Obstructive Sleep Apnea Care Essentials

A Pocket Guide for Clinicians

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OSA Management in the Primary Care Setting

Welcome! As a frontline provider in patient care, you play a crucial role in the early identification, management, and ongoing support of individuals affected by obstructive sleep apnea (OSA). Understanding what to look for and how to guide patients through diagnosis and treatment can make a difference in whether patients receive care. This brochure covers:

- How to recognize and screen for OSA
- OSA diagnosis
- Treatment options for OSA

Included in the pages of this brochure are links to additional resources for further information as needed.



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OSA Overview



OSA is the most common sleep disorder in adults evaluated at sleep centers.[1]

It is caused by repetitive collapse of the upper airway during sleep.[1]

Episodes of airflow obstruction cause arousal from sleep and oxyhemoglobin desaturation.[1]

> Approximately 1 in 7 (or 24 million) individuals in the US have moderate to severe OSA.[2]

~70%
of people with OSA have obesity[3]



80%-90%
of patients with OSA are undiagnosed[4]



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OSA Symptoms

Patients can have common and/or uncommon symptoms

Common Symptoms



Snoring[5,6]



Breathing pauses, choking, or gasping during sleep[5,6]



Unrefreshing sleep[5,a]



Daytime sleepiness[5-8,a,b]



Morning headache[5,8]



Large neck circumference[6]

Men are more likely to present with hallmark OSA symptoms.[9,10]

[a]The relationship between OSA severity and accompanying symptoms (eg, daytime sleepiness, unrefreshing sleep, depression) is not well established.[7] [b]Daytime symptoms (eg, sleepiness) and apnea-hypopnea index (AHI) measurements of the severity of OSA are not strongly correlated.[7]

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OSA Symptoms (cont.)

Patients can have common and/or uncommon symptoms

Uncommon Symptoms



Insomnia[8,9]



Brain fog and difficulty concentrating[7]



Decreased libido[7]



Depression and irritability[7,9,a]



Fatigue[6-9]

Women may present with vague OSA symptoms, which can make diagnosis more challenging and reduce their likelihood of undergoing screening.[9]

[a]The relationship between OSA severity and accompanying symptoms (eg, daytime sleepiness, unrefreshing sleep, depression) is not well established.[7]

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OSA Comorbidities

A large percentage of patients with cardiometabolic disease also have OSA



Obesity[11]

55%-90%



Type 2 diabetes[5]

65%-85%



Hypertension[5]

73%-82%



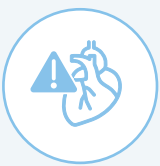
Stroke[5]

71%



Atrial fibrillation[5]

76%-85%



Heart failure[11,12]

12%-64%

Consider screening for OSA in patients with these diseases.

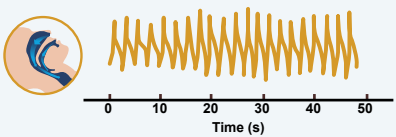
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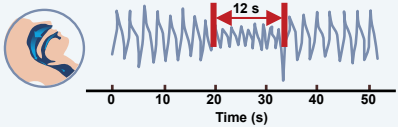
Understanding the Apnea-Hypopnea Index (AHI)

OSA severity is quantified by AHI[6]

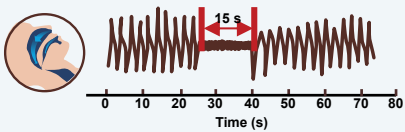
Normal Breathing



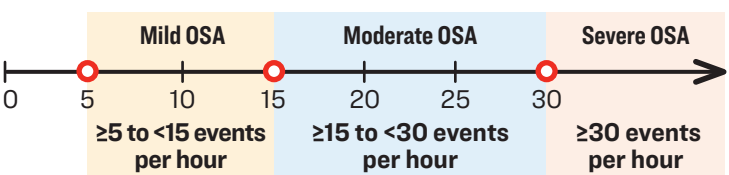
Sleep Hypopnea Event



Sleep Apnea Event



AHI: number of apnea and hypopnea events that occur per hour



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OSA Screening and Diagnosis Algorithm

The American Academy of Sleep Medicine offers an algorithm for OSA screening and diagnosis.[13]

Step 1: Screen the patient for OSA risk.

Includes physical examination (eg, weight, BMI, tongue size, neck circumference), sleep questionnaires, and sleep-related history. Although information from wearable devices can assist in OSA screening, it should be used to complement the tools described above rather than replace them.[13-15]

Step 2: Take ≥1 of the following actions based on patient characteristics: identify the appropriate sleep test, provide supportive/lifestyle care (eg, weight management counseling), or refer to a sleep or obesity specialist.[6]

PSG and HSATs are accepted tests to diagnose OSA per the current AASM Clinical Practice Guidelines.[13]

AASM = American Academy of Sleep Medicine; BMI = body mass index; HSAT = home sleep apnea test; PSG = polysomnography.

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OSA Screening and Diagnosis Algorithm (cont.)

Positive diagnosis from step 2?

Step 3a: Discuss treatment options and coordinate appropriate referrals.[13]

Negative diagnosis from step 2?

Step 3b: Evaluate for other sleep disorders or perform PSG. Repeat step as needed.[13]

Step 4: Initiate OSA treatment (CPAP therapy, pharmacotherapy for weight loss, surgery, or oral appliances).[6]

Step 5: Follow up, coordinating as needed with specialists.[13]

CPAP = continuous positive airway pressure.

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Screening Questionnaires for OSA

Short, easy-to-fill-out surveys

STOP-Bang Questionnaire: most commonly used survey; 8 questions (4 related to OSA clinical features, 4 related to demographics); high sensitivity[16,17]

STOP-Bang score	0-2	3-4	5-8
Risk of moderate-to-severe OSA	Low	Intermediate	High

Additional questionnaires

Epworth Sleepiness Scale – daytime sleepiness (10 questions)[18]

Berlin Questionnaire – snoring, daytime sleepiness, and obesity/blood pressure (10 questions)[19]

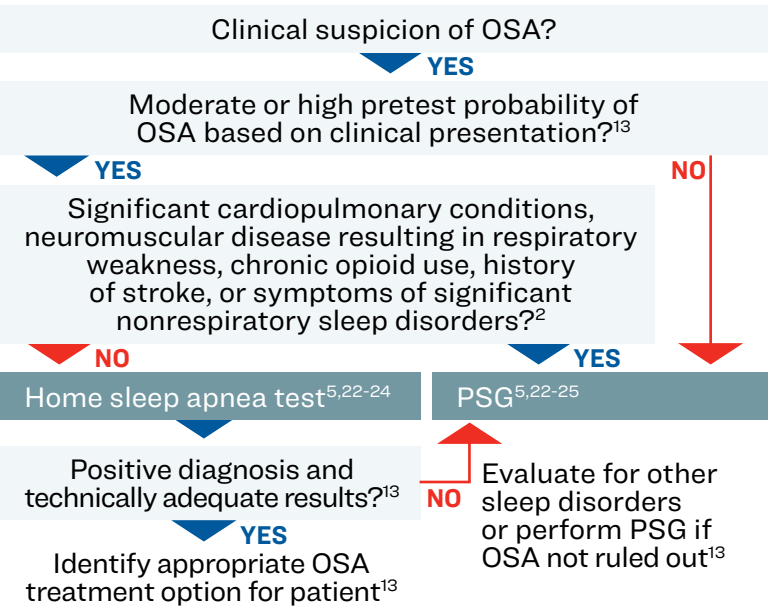
Pittsburgh Sleep Quality Index – sleep quality (19 items)[20]

Functional Outcomes of Sleep Questionnaire – quality of life as related to disorders of excessive sleepiness (30 questions)[21]

Surveys or portions of surveys can be included on patient intake forms to assist in screening.

Selecting the Appropriate Test in Primary Care

The PCP is in the best position to screen and help diagnose patients with OSA.[22]



PCP = primary care provider.

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Home Sleep Apnea Tests

Conducted at home rather than in a hospital setting[22]



Appropriate for patients at high risk for OSA without cardiac, pulmonary, or neurologic comorbidities.[5,13]

Collected data are used to calculate the rate of apneas and hypopneas.[5]

HSAT types[23]

Type 2: measures EEG, EOG, chin EMG, ECG, airflow, respiratory effort, and O_2 saturation

Type 3 (most common): measures 4-6 signals (2 respiratory variables, O_2 saturation, and heart rate)

Type 4: measures airflow and O_2 saturation

PCPs can order an HSAT without referring the patient to a sleep specialist.[22]

ECG = electrocardiogram; EEG = electroencephalogram; EMG = electromyography; EOG = electrooculography.

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Polysomnography

Conducted in a sleep lab[13]



Recommended for patients with conditions that place them at an increased risk of nonobstructive sleep-disordered breathing or chronic opioid medication use.[13]

Measures EEG, EOG, chin EMG, ECG, airflow, respiratory effort, and O_2 saturation.[5]

PSG options[22]

Full: tracks parameters for entire night, followed by a second night of titration

Split-night: half-night parameter tracking followed by PAP titration on the same night

> PSG usually requires referring the patient to a sleep specialist.[22]

PAP = positive airway pressure.

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Codes for OSA and Common Comorbidities

Code	Description
G47.33	OSA[26]
E66.01	Obesity (BMI ≥30)[27]
E66.1	Drug-induced obesity[27]
I10	Essential (primary) hypertension[28]
I48.91	Unspecified atrial fibrillation[29]
E11.65	T2D with hyperglycemia[29]

Confirm the exact type of sleep apnea from the sleep study and use code G47.33 for OSA[30]

Make sure your ICD-10 code always appears on your treatment claims and that it aligns with the documented condition[30]

Document comorbidities and include codes for complications as appropriate. For obesity diagnoses, include a Z code for BMI (Z68.XX)[27]

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Current Procedural Terminology Codes (CPT) for OSA[31]

CPT Code	Description
95782	PSG; <6 years of age, sleep staging with ≥4 additional sleep parameters, attended by a technologist
95783	PSG; <6 years of age, sleep staging with ≥4 additional sleep parameters, with initiation of CPAP therapy or bilevel ventilation, attended by a technologist
95800	Sleep study, unattended, simultaneous recording; heart rate, O_2 saturation, respiratory analysis, and sleep time
95801	Sleep study, unattended, simultaneous recording; minimum of heart rate, O_2 saturation, and respiratory analysis
95806	Sleep study, unattended, simultaneous recording of heart rate, O_2 saturation, respiratory airflow, and respiratory effort

CPT Codes for OSA (cont.)[31]

CPT Code	Description
95807	Sleep study, simultaneous recording of ventilation, respiratory effort, ECG or heart rate, and O_2 saturation, attended by a technologist
95808	PSG; any age, sleep staging with 1-3 additional sleep parameters, attended by a technologist
95810	PSG; ≥6 years of age, sleep staging with ≥4 additional sleep parameters, attended by a technologist
95811	PSG; ≥6 years of age, sleep staging with ≥4 additional sleep parameters, initiation of CPAP therapy or bilevel ventilation, attended by a technologist
94660	CPAP ventilation initiation and management

Treatment Options for OSA Overview[5]



CPAP



Hypoglossal nerve stimulation



Mandibular advancement devices



Surgical procedures



Weight management

Continuous Positive Airway Pressure



Overview – Pressure is delivered to the airway through a mask worn over the nose or nose and mouth to prevent airway collapse during inspiration[5]

Characteristics of typical patient using this treatment option – moderate-to-severe OSA[32]

Efficacy – reduction in AHI of 33.3%-48.3% when compliance (ie, used for ≥4 hours per night) is followed[33]

Compliance – 17%-54%[34]

Hypoglossal Nerve Stimulation



Overview – Surgically implanted electrode stimulates the hypoglossal nerve to enhance tongue protrusion and stabilize the upper airway during inspiration[5]

Characteristics of typical patient using this treatment option – patients with moderate-to-severe OSA intolerant to CPAP, without severe obesity, and with <25% central mixed events[35]

Efficacy – 50% reduction in AHI[36]

Compliance – 52.5%-94%[37-39]

Mandibular Advancement Devices



Overview – Specialized dental trays are fitted to the upper and lower teeth. Position of the plates is adjusted, allowing advancement of the mandible relative to the maxilla, thereby increasing upper airway volume[5]

Characteristics of typical patient using this treatment option – mild-to-moderate OSA, tongue-base collapse at DISE, intolerant of PAP[32]

Efficacy – 23.9%-72.0% reduction in AHI[40]

Compliance – 83% (ie, used for ≥4 hours per night)[41]

DISE = drug-induced sleep endoscopy procedure.

Surgery: Maxillomandibular Advancement



Overview – Le Fort I maxillary and bilateral mandibular osteotomies are used to produce forward fixation of the facial skeleton by approximately 10 mm[5]

Characteristics of typical patient using this treatment option – severe OSA (AHI >30), unsuccessful previous surgeries for OSA, poor tolerance of CPAP. Outcomes are less favorable in patients with cardiovascular disease[42-44]

Efficacy – mean postoperative reduction in AHI of 47.8 (80.1% reduction), successful surgery rate of 85.5%, surgical cure rate of 38.5%[42,a]

Compliance – Successful surgery ensures compliance[42]

[a]Surgical success is defined as a reduction in AHI >50% + postoperative AHI <20. Surgical cure defined as postoperative AHI <5.

Surgery: Soft Tissue Procedures



Overview – Includes uvulopalatopharyngoplasty (UPPP), barbed reposition pharyngoplasty (BRP), expansion sphincter pharyngoplasty (ESP), lateral expansion pharyngoplasty (LEP), and related procedures. Portions of soft tissue upper airways are repositioned or removed to increase pharyngeal volume[45-48]

Characteristics of typical patient using this treatment option – intolerant of or noncompliant with CPAP or has anatomical abnormalities like enlarged oral soft tissues[45-49]

Efficacy – 49.8%-67.0% reduction in AHI[46]

Compliance – Successful surgery ensures compliance; increases in BMI after surgery can reduce efficacy[49]

Weight Management



Overview – Reduction in weight reduces fat deposition around the neck and upper airways, thereby increasing upper airway volume. Weight loss treatments include lifestyle changes, obesity management medications (OMMs), and bariatric surgery[5,50]

Indication – all overweight/obese patients with OSA; bariatric surgery in severely obese patients[50]

Efficacy – BMI reduction of 20% associated with an AHI reduction of 57%[51]

Compliance – 60.5% for lifestyle changes,[52] 18.1%-41.8% for OMMs[53]; successful bariatric surgery guarantees compliance, although adherence to 1-year follow-up appointments ranges from 54.3%-75.0%[54,55]

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Notes

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