
# Screening and Diagnostic Tools for Obstructive Sleep Apnea

What do you do if you suspect obstructive sleep apnea (OSA) in a patient? The American Academy of Sleep Medicine (AASM) and other resources offer a clinical algorithm for implementation of clinical practice guidelines to screen and diagnose OSA[1]

**Step 1: Evaluate the potential risk level for OSA.**

A comprehensive health evaluation may include a complete medical and sleep history, relevant laboratory studies, and a physical examination that covers the respiratory, cardiovascular, and neurologic systems.[1-4,a]

**Step 2: If a patient demonstrates an increased risk for moderate to severe OSA, refer them for the appropriate diagnostic testing based on the comprehensive health evaluation. Additionally, consider referral to a sleep specialist, otolaryngologist, dentist, or another professional experienced in the evaluation and management of OSA[5,6]**

Polysomnography (PSG) and home sleep apnea testing (HSAT) are accepted tests to diagnose OSA per the current AASM Clinical Practice Guidelines.

**See page 2 for more information about each test to help select the most appropriate option for your patients!**

Positive diagnosis

**Step 3A: Discuss treatment options and coordinate appropriate referrals.[5-7]**

Negative diagnosis

**Step 3B: Evaluate for other sleep disorders OR perform PSG if OSA has not yet been ruled out. Repeat step as needed.**

Positive diagnosis

**Step 4: Initiate OSA treatment. Treatment options for OSA vary based on the severity of the condition, underlying causes, and patient preferences, and may include lifestyle modifications, CPAP, oral appliances, pharmacological intervention, and surgical intervention.[5-7]**

**Step 5: Follow up, coordinating as needed with specialists.**

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# AASM Clinical Practice Guidelines Algorithm

## PSG and HSAT are accepted tests to diagnose OSA per the current AASM Clinical Practice Guidelines.

### PSG[1]

- Typically performed in a sleep laboratory
- Evaluates sleep, respiratory, brainwave, and movement parameters[8]
- Collected data are used to calculate the number of apneas and hypopneas per hour of sleep.[8]

**PSG options[9]**

- Full: tracks parameters for entire night, followed by a second night of titration
- Split-night: half-night parameter tracking followed by CPAP titration on the same night

### HSAT[6]

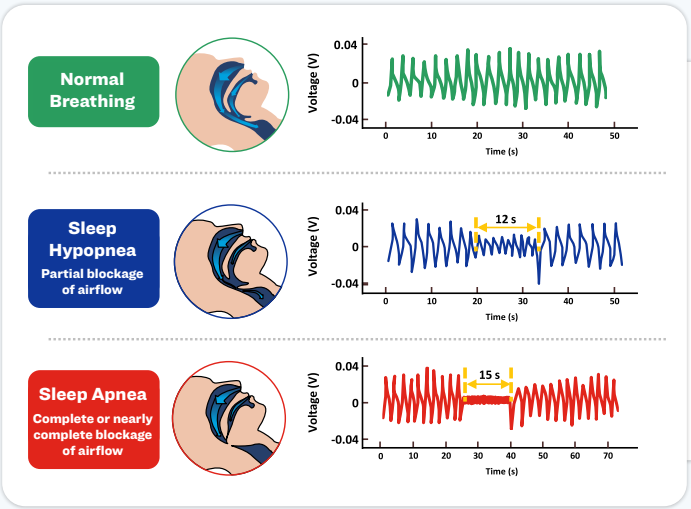
- Performed at the patient's home
- Appropriate for patients at high risk for OSA without cardiac, pulmonary, or neurologic comorbidities[6]
- Evaluates airflow, respiratory effort, and oxygen saturation[8]
- Collected data are used to calculate the number of apneas and hypopneas per hour of recording.[8]

**HSAT can fall under the following sleep study categories:[1,10]**

- Type 2: same setup as PSG but performed at patient's home[11]
- Type 3: the most common HSAT option. Measures 4+ cardiopulmonary parameters ($O_2$ saturation, airflow, respiratory movement, heart rate).[11]
- Type 4: measure 1-2 cardiopulmonary parameters ($O_2$ saturation plus airflow or heart rate)[11]


If the patient has conditions that place them at an increased risk of non-obstructive sleep–disordered breathing[b] or chronic opioid medication use, PSG is the recommended testing option.[1]

Severity of OSA[c] diagnosis is defined by the number of apnea-hypopnea[d] events per hour.[8]



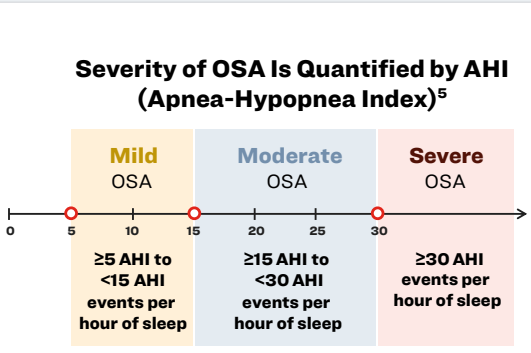




Figure modified from Peng X, et al. *Adv Funct Mater*. 2021;31(34):2103559.

[a]Primary care providers are encouraged to refer complicated cases to a sleep specialist.
[b]Precluding conditions include significant cardiopulmonary disease, potential respiratory muscle weakness due to neuromuscular condition, awake hypoventilation or high risk of sleep-related hypoventilation, history of stroke, severe insomnia, and symptoms of other significant sleep disorder(s). [c]OSA encompasses both apneas and hypopneas. [d]Hypopnea is defined as a ≥10-second episode of reduced airflow.


**References**

1. Kapur VK, et al. *J Clin Sleep Med*. 2017;13(3):479-504.
2. Goldberg AN, Schwab RJ. *Otolaryngol Clin North Am*. 1998. 31(6):919-930.
3. Yu JL, Rosen I. *J Clin Sleep Med*. 2020. 16(2):303-308.
4. Chung F, et al. *Br J Anaesth*. 2012;108(5):768-775 .
5. Yeghiazarians Y, et al. *Circulation*. 2021;144(3):e56-e67.
6. Barnes N, Herbert L. *J Nurse Pract*. 2023;19(7):104649.
7. Sutherland K, et al. *Multidiscip Respir Med*. 2018;13:44.
8. Gottlieb DJ, Punjabi NM. JAMA. 2020;323(14):1389-1400.
9. Chesson AL, et al. *Sleep*. 1997;20(6):406-422.
10. Collop NA, et al. *Am J Respir Crit Care Med*. 2004;169(10):1160-1163.
11. Yamada Y, et al. *Ann Palliat Med*. 2020;9(5):2895-2902.
12. Peng X, et al. *Adv Funct Mater*. 2021;31(34):2103559.

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