

Definition

sleep-related breathing disorder that involves a decrease or complete halt in airflow despite an ongoing effort to breathe. This leads to partial reductions (hypopneas) or complete pauses (apneas) in breathing that last at least 10 seconds during sleep

Risk Factors

- BMI > 30 kg/m²
- Down Syndrome
- Acromegaly
- Hypothyroidism
- Smokers
- Middle-aged and older men
- post-menopausal women
- Family member with OSA
- Abnormal nasal morphology
- Craniofacial abnormalities
- Neck sizes ≥ 17 inches (men) ≥16 inches (women)
- Ethnic groups e.g Asian, African American, Native American, and Hispanic
- Retrognathic mandible (small lower jaw)
- Children with large tonsils and adenoids

High Risk Individuals

- Obesity (BMI > 35)
- Congestive heart failure
- Atrial fibrillation
- Resistant hypertension
- Type 2 diabetes
- Individuals with Retrognathic Maxilla & Mandible
- Nocturnal dysrhythmias
- Stroke
- Pulmonary hypertension
- High-risk driving populations
- Preoperative for bariatric surgery

Clinical presentation

- Restless non-refreshing sleep
- Snoring
- Morning headaches
- Drowsiness
- Sleep fragmentation
- Witnessed apneas
- Nightmares
- Excessive nocturnal sweating
- Nocturnal heart burn
- Nocturia
- Excessive daytime sleepiness EDS (Epworth Sleepiness Scale)
- Awakenings (with gasping or paroxysmal nocturnal dyspnea)
- Decreased concentration and memory
- Motor vehicle accidents
- Erectile dysfunction and female sexual dysfunction
- Dry mouth and throat on awakening
- Increased BP during sleep and in the early morning upon awakening
- Excessive salivation during sleep
- Mood disorders

Physical examination

- Neck sizes ≥ 17 inches (men) ≥16 inches (women)
- BMI > 30 kg/m²,
- Modified Mallampati score of 3 or 4
- Craniofacial abnormalities; retrognathia, micrognathia, lateral peritonsillar narrowing, macroglossia, tonsillar hypertrophy, elongated/enlarged uvula, high arched/narrow hard palate
- Nasal abnormalities (polyps, deviation, valve abnormalities, turbinate hypertrophy) and/or overjet
- Signs of complications : right sided heart failure, pulmonary hypertension
- Resistant hypertension

Epworth Sleepiness Scale (ESS)

How likely are you to doze off or fall asleep in the following situations, in contrast to feeling just tired? This refers to your usual way of life in recent times.

	0 No chance	1 Slight chance	2 Moderate chance	3 High chance
Sitting and reading	0	1	2	3
Watching TV	0	1	2	3
Sitting, inactive, in a public place	0	1	2	3
As a passenger in a car for an hour without stopping for a break	0	1	2	3
Lying down to rest when circumstances permit	0	1	2	3
Sitting and talking to someone	0	1	2	3
Sitting quietly after a meal without alcohol	0	1	2	3
In a car, while stopped for a few minutes in traffic or at a light	0	1	2	3

A score ≥10 raises concern

Total Score=

The Mallampati Score



Class I: Complete visualization of the soft Palate



Class II: Complete visualization of the Uvula



Class III: visualization of only the base of the Uvula



Class IV: Soft Palate is not visible at all

**STOP-BANG questionnaire
Risk Stratification**

- | | |
|----------------------------------------------|-------------------------------|
| S noring | B MI >35 |
| T ired, fatigued, or sleepy | A ge > 50 |
| O bserved apnea | N eck size > 16 inches |
| P ressure (hx of high blood pressure) | G ender: male |

Each 1 point

Low risk 0-2

Intermediate risk 3-4

High risk 5-8

Differential diagnosis

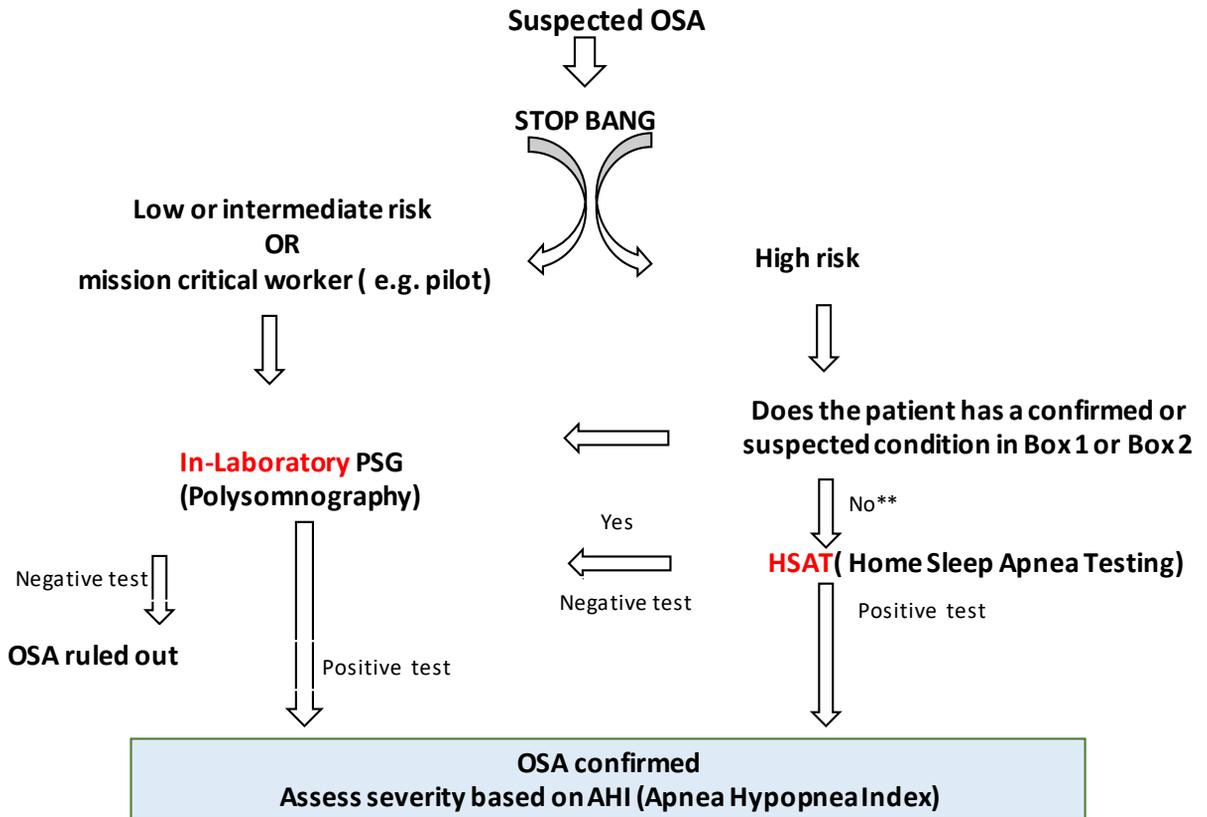
Box1 conditions associated with non-obstructive sleep-disordered breathing:

- GOLD stage 2,3,4 COPD
 - NYHA class 3 or 4 heart failure
 - Neuromuscular weakness
 - Opioid Use
 - History of Stroke*
- * Majority will have obstructive sleep apnea

Box2 Non-respiratory sleep disorders

- Narcolepsy or other hypersomnia disorders
- Severe insomnia
- Parasomnia
- Movement disorders

Investigations & Management



**in the absence of conditions in Boxes 1 &2, In Lab PSG is still the gold standard diagnostic test by the American Academy of Sleep Medicine. And HSAT is option "B", NOT option "A"

Mild: AHI 5-15

- Weight loss 5-10%
- CPAP if symptomatic or co-morbidity
- Oral appliances

Moderate: AHI 15-30	Severe : AHI >30
<ul style="list-style-type: none"> • CPAP- (GOLD STANDARD for ADULTS) • Adenotonsillectomy (GOLD STANDARD for PEDIATRICS) • Oral appliances • Surgical interventions, Maxillo-mandibular Advancement, hypoglossal nerve stimulation therapy, uvulopalatopharyngoplasty (UPPP) in highly selected cases only) 	