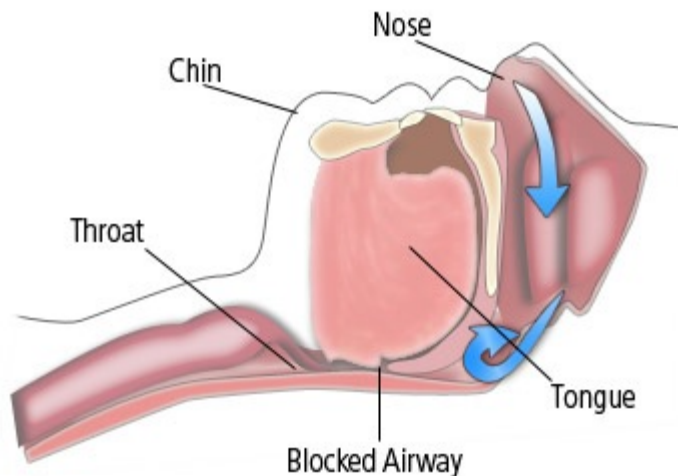


Obstructive Sleep Apnea Information Sheet for MobileSleepDoc Users:

Definitions:

Obstructive Sleep Apnea, or OSA, is a breathing-related sleep disorder characterized by obstruction of the upper airway. People who have OSA experience repeated pauses in breathing while they sleep (called apneas, which are cessations of flow lasting 10 seconds or longer; or hypopneas, which are decreases in airflow lasting 10 seconds or longer), despite the effort to breathe. Apneas and hypopneas may be associated with decreased levels of oxygen in the blood, as oxygen is prevented from entering the body when one stops breathing. OSA is also associated with other health problems, such as heart disease. OSA is considered a chronic disorder.



Clinically, OSA is defined by the occurrence of daytime sleepiness, loud snoring, witnessed breathing interruptions during sleep, or awakenings due to gasping or choking, combined with at least 5 obstructive respiratory events (apneas, hypopneas or respiratory effort related awakenings) per hour of sleep. The presence of 15 or more obstructive respiratory events per hour of sleep without the presence of other symptoms is also sufficient for a diagnosis of OSA.

OSA is a common disorder affecting at least 2-4% of the adult population.

Diagnosing OSA:

The STOPBANG questionnaire is one of the tools used to screen for OSA. It assesses the main risk factors of OSA, such as having a body mass index greater than 35, being older than 50, and being a male or post-menopausal female.

Signs and symptoms of OSA should be evaluated during a comprehensive sleep evaluation with a health professional. Common signs and symptoms include:

- Witnessed apneas
- Snoring
- Gasping/choking at night
- Excessive sleepiness not explained by other factors
- Nonrefreshing sleep
- Total sleep amount
- Sleep fragmentation/trouble sleeping through the entire night
- Need to urinate during the night
- Morning headaches
- Decreased concentration
- Memory loss
- Decreased libido
- Irritability

Although the signs and symptoms may suggest OSA, OSA should be formally diagnosed with either a full “polysomnography,” which is a sleep study conducted in a lab setting and overseen by technicians, or a portable monitoring device, which can be used in the convenience of one’s own home. Home sleep tests record measures such as airflow and chest movement while breathing, blood oxygen levels, and heart rate. Full polysomnographies are much more comprehensive, and may also record brain activity, stages of sleep, and limb movements. A physician should determine which test is appropriate.

Treatment options:

1) Behavior modification:

- Exercise and weight loss may improve overall health and reduce the severity of OSA.
- Studies have shown that some people experience more severe OSA while sleeping on their backs. Sleeping in a different position, such as on your side or propped up at an angle, may decrease the severity of OSA.
- People with OSA should avoid alcohol consumption altogether, but particularly before bed. Alcohol can depress the central nervous system and exacerbate OSA, worsen sleepiness, or promote weight gain.
- People who have OSA should avoid certain medications, such as benzodiazepines and opiates, because they inhibit the central nervous system. Side effects of some drugs, such as those that cause restlessness, may also be problematic.
- These behaviors should be used in conjunction with other therapies for OSA.

2) Positive airway pressure therapy:

- Positive airway pressure (PAP) therapy is the most commonly used and most widely studied treatment for OSA. PAP therapy works by delivering pressurized air through the mouth and throat, which keeps the upper airway open, thus reducing/eliminating obstructions.
- PAP therapy involves using a machine every night while sleeping. A mask is worn on the face and is attached to a small machine via a tube. Pressurized air is delivered from the machine, through the tube and through the mask.
- There are different types of PAP therapy, the two most commonly used of which are CPAP and Bilevel PAP (BPAP). CPAP delivers positive airway pressure at a constant rate. BPAP to deliver a higher pressure on inhalation and a lower pressure on exhalation. Although CPAP is the most commonly used and best understood type of PAP therapy, some people find it easier to adjust to BPAP. A physician's care and a sleep study should be used to determine which type of PAP therapy is appropriate.



3) Oral appliances:

- In some cases, an oral appliance may be deemed appropriate, especially for patients with mild or moderate obstructive sleep apnea, or if the patient tried CPAP but was unable to tolerate it. Oral appliances are small devices worn in the mouth over the bottom and upper teeth, and they work by

adjusting the position of the jaw or tongue in such a way that keeps the airway from closing.

4) Surgery:

- Other treatments for OSA include a range of surgeries aimed at altering different parts of the upper airway, depending on where there may be an anatomical obstruction. The surgeries may be more minor, such as tonsillectomy or correction of a deviated septum, or more invasive, such as facial reconstructive surgery, or jaw advancement (maxillary mandibular advancement). The classic operation many are referring to when they mention “sleep apnea surgery” is uvulopalatopharyngoplasty, or UPPP. This procedure involves removing the uvula and part of the soft palate. A full review and discussion of the different surgeries performed in sleep apnea patients is beyond the scope of this information sheet, but finding a surgeon highly experienced in the full array of sleep apnea surgeries is advised before considering a surgical option. Generally speaking, surgery is typically not the first treatment option but may be a useful adjunctive treatment, or alternative treatment if other measures fail.

For additional information please refer to the following paper and references therein:

Epstein LJ; Kristo D; Strollo PJ; Friedman N; Malhotra A; Patil SP; Ramar K; Rogers R; Schwab RJ; Weaver EM; Weinstein MD. Clinical guideline for the evaluation, management and long-term care of obstructive sleep apnea in adults. J Clin Sleep Med 2009;5(3):263-276.
