

# Obstructive Sleep Apnea

## What it is and How it is Treated

Obstructive sleep apnea (OSA) is defined as a periodic reduction or cessation of breathing due to narrowing of the upper airways during sleep. This condition affects approximately 2% of women and 4% of men in the U.S. However, about 95% of all cases go undiagnosed and untreated, which is alarming considering that untreated obstructive sleep apnea poses several major health risks.

Studies show that patients with sleep apnea have increased baseline heart rates, increased blood pressure, and lower levels of blood oxygen, which may put them at increased risk for cardiovascular problems such as hypertension, stroke, and heart failure. Often, patients present to their primary care manager (PCM) complaining of persistent daytime fatigue, regardless of how much sleep they have had the night before. The good news for patients who have been diagnosed with OSA is that with proper treatment and lifestyle change, full recovery can be achieved and the health risks reversed.

Common Symptoms	Risk Factors
<ul style="list-style-type: none"> <li>■ Snoring</li> <li>■ Daytime sleepiness or fatigue</li> <li>■ Sleep fragmentation or recurrent night awakenings</li> <li>■ Unrestful sleep</li> <li>■ Increased irritability</li> <li>■ Morning headaches</li> <li>■ Decreased memory</li> <li>■ Difficulty concentrating</li> <li>■ Nocturia (awakening from sleep to urinate)</li> <li>■ Falling asleep while driving</li> </ul>	<ul style="list-style-type: none"> <li>■ First degree relative diagnosed with sleep apnea</li> <li>■ Obesity</li> <li>■ Hypertension</li> <li>■ Male gender</li> <li>■ Age (greater than 40)</li> <li>■ Neck circumference</li> <li>■ Postmenopausal women (higher risk than premenopausal)</li> </ul>

### How is sleep apnea diagnosed?

A nocturnal polysomnogram (sleep study) is conducted by sleep specialists to diagnose obstructive sleep apnea. During this assessment information regarding chest wall effort, airflow, body positioning, snoring, and oxyhemoglobin saturation is recorded. As you may have guessed, the sleep specialists literally observe you sleeping while monitoring your brain / sleep patterns. Often times, patients report their sleep duration as being longer or shorter than it actually is. This assessment can identify exact sleep onset time, wake after sleep onset episodes and the depth and quality of your sleep.

## Treatments

A variety of treatments for sleep apnea exist and the use of each treatment is determined by the severity of the disturbance in breathing during sleep. A combination of the following treatments provided by a multidisciplinary team is ideal and can include: a behavioral medicine specialist, a dietitian, an exercise specialist, a respiratory therapist and a pulmonary doctor that has specialty training in sleep disorders. Below is a description of the types of treatments that are currently available for OSA.

### Behavioral

- Weight loss – as little as a 10% decrease in body weight has been found to have significant improvement in obstructive breathing problems.
- Avoidance of alcohol and sedatives
- Avoidance of sleep deprivation
- Positioning – Laying on side rather than back

### Medical

- CPAP Mask – Positive pressure through a mask
- Oral Appliance – Recommended for patients with mild to moderate sleep apnea

### Surgical

Sometimes used when patients are unable to tolerate positive airway pressure and for those that find other treatments ineffective. However, sometimes surgeries do not entirely eliminate the obstruction.

### Treatment Goals

- Establish normal nocturnal oxygenation and ventilation
- Eliminate snoring
- Eliminate disruption of sleep

## Continuous Positive Airway Pressure (CPAP)

Nasal continuous positive airway pressure (CPAP) is the most common treatment for moderate to severe obstructive sleep apnea. Research finds that this method is also highly effective when used for more than 4.5 hours a night on a consistent basis. Studies have also shown that adequate CPAP use can decrease the risk of cardiovascular diseases in patients with sleep apnea. A CPAP unit provides immediate effects and complications with CPAP treatment are rare. However, use of the CPAP masks may result in some level of discomfort. The following table shows effective corrections for negative side effects from CPAP masks. However, if symptoms persist, contact your physician.

Problems associated with CPAP Masks	Cause	Adjustment
Nasal congestion Dry nose and/or throat	Dry air	Try nasal saline spray before bedtime or upon awakening. Add heated humidification. Try antihistamines or topical corticosteroids.
Dry mouth	Sleeping with mouth open	Try a chin strap and if it is not helpful consider a full-face mask. Add heated humidification.
Sore, dry, irritated or swollen eyes	Mask leaks Mask too tight	Try readjusting the mask on face. Readjust headgear straps. Inspect mask for breaks. Use eye patch.
Runny nose	Dry air	Try saline nasal spray before bedtime. Try topical nasal steroid preparation before bedtime. Add heated humidification.
Hay fever	Irritants drawn in with room air through machine	Put unit away from dust or animal hairs. Some units can have special filters added. Add heated humidification.
Air leaks	Strap is loose or tight. Incorrect mask size. Worn-out mask. Dirty mask	Readjust headgear straps. The mask should be loose but still create a seal. Nasal pillows may improve fit. Consider full face mask that covers nose and mouth. Inspect mask for leaks or cracks. Wash mask daily.
Chest discomfort Sensation of too much pressure. Difficulty exhaling	Pressure requirement may be lower at beginning of sleep period	Try pressure ramp at beginning of sleep period. Reduce pressure with bilevel positive airway pressure.
Feelings of claustrophobia	Initial adjustment period	Consider changing mask (nasal mask, full face, nasal prongs)
CPAP machine too noisy	Blocked air intake Too close to sleep area	Check if filter is clean and not blocked by item. Place unit farther away. May need to add to length of hose.
Bed partner intolerance	Noise, anxiety	Attend patient support group (such as, A.W.A.K.E Network of the American Sleep Apnea Association)

## Non-Compliance

The most common form of treatment for sleep apnea is with continuous positive airway pressure (CPAP). However, as many as 50% of patients stop CPAP therapy during the first 2-4 weeks of treatment because of the negative side effects.

Did you know that research has found that.....

- CPAP refusers are more likely to be female and current smokers.
- Non-compliance is related to high BMI (>30 kg/m<sup>2</sup>) and CPAP pressure >12.
- Acceptance of CPAP treatment is not predicted by severity of sleep apnea or degree of sleepiness.
- Adequate compliance = >4.5 hours of CPAP use per night on a regular basis.
- Patient education is especially important first month of treatment.
- Follow-up with physician is important at least once after initiation of treatment and annually thereafter.
- Noncompliance is classified in terms of tolerance problems, psychological factors, and lack of education, support and adequate follow-up care.