



## Sleep


Sleep plays a vital role in physical and mental health. Inadequate sleep can take a toll on a person's health and quality of life. Through assessment within a sleep laboratory, the presence of sleep disorders can be identified and treated to ensure restful and restorative sleep.

## Sleep Apnea

Sleep apnea is a serious medical condition that left untreated can increase the chance of automobile accidents, stroke, hypertension, heart attack, diabetes, impotence, gastro esophageal reflux disorder, arteriosclerosis and other chronic diseases.

## Other Sleep Disorders

Besides sleep apnea, there are many other sleep disorders and parasomnias which can disturb sleep and impact the quality of life. These include Insomnia, Periodic Limb Movements, Restless Legs Syndrome, Narcolepsy, Bruxism (teeth grinding), REM Behaviour Disorder (acting out in sleep), Night Terrors and Circadian Rhythm Disorders.



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ODSL

## Obstructive Sleep Apnea

## What is Obstructive Sleep Apnea?

Obstructive Sleep Apnea (OSA) consists of periods of cessation of breathing (apnea) during sleep. This affects sleep quality and can result in daytime sleepiness and fatigue. In severe cases, obstructive sleep apnea can result in an increased risk of heart diseases and stroke.

When awake, muscles surrounding the upper airway (nose, mouth and throat) are rigid and provide support to keep the airway open. During sleep, muscles are relaxed which in turn can lead to snoring and may also cause a partial or complete closure of the airway resulting in apnea or apneic events. When breathing stops, heart rate decreases as do blood oxygen levels. The brain detects there is a problem and triggers an awakening from sleep. These awakenings disrupt sleep but also restore normal muscle tone which opens the airway and breathing resumes. Heart rate may rapidly increase after apnea as the heart tries to increase blood oxygen to an acceptable level. A person may be aware of apnea during sleep if they wake up choking or feel as though their heart is racing but, in many cases, one is unaware of these apneic events and the resulting awakenings. When they wake up for the day though they often do not feel refreshed.

### Typical Indications for Obstructive sleep apnea include:

Snoring, morning/night time headaches, excessive daytime sleepiness, restless sleep, snorting/choking and observed pauses in breathing are all indicators of Obstructive Sleep Apnea. Obesity and high blood pressure are frequently seen in patients with sleep apnea. Type II Diabetes is also seen in some cases. If there is difficulty in maintaining glucose and insulin levels, obstructive sleep apnea may be a contributing factor.

## Pre-Screening Indicators for Sleep Apnea

As well as Typical Indications, the following conditions indicate that a person may be at risk of having Obstructive Sleep Apnea

### Respiratory

Severe COPD, severe hypoxemia, hypercapnia, obesity related hypoventilation syndrome and respiratory muscle weakness.

### Cardiovascular System

Hypertension (high blood pressure) and difficulty controlling it, irregular heartbeats, atrial fibrillation, Congestive Heart Failure/Cardiomyopathy

### Central Nervous System /Psychiatry

Memory loss, depression, irritability, poor judgement, concentration problems

### Menopause

Several studies indicate that OSA occurs more frequently in women after menopause than women of a younger age. Hormonal changes can affect the function of the upper airway and predispose a woman to having OSA.

### General

- Body Mass Index more than 33
- PCOS
- Type II Diabetes
- High Cholesterol
- Chronic Fatigue
- Neuromuscular disease
- Sexual Dysfunction
- Age (>40 yrs in males; > 50 yrs in females)-
- Lifestyle habits - alcohol, sedatives, smoking
- Gastric Reflux
- Fibromyalgia
- Down Syndrome
- Hypothyroidism

## Obstructive Sleep Apnea Treatment

Sleep apnea can be treated in a number of different ways. The type of treatment is usually decided upon based on the symptoms, the risk to health and the severity of the diagnosis of apnea.

### Behaviour and Lifestyle Modifications:

Weight loss can be a crucial factor and some patients have been cured of sleep apnea after losing weight. Other considerations are regular exercise, smoking cessation, avoidance of alcohol or sedatives before sleeping and training oneself not to sleep on the back.

Surgery: Surgery is an excellent way to treat snoring however the success for treating symptomatic sleep apnea is low. Surgery is therefore not considered as a first line treatment.

### Continuous Positive Airway Pressure (CPAP):

A CPAP machine is a portable unit that blows pressurized air through a mask to maintain the rigidity of the airway during sleep thus preventing apnea. This non-invasive method to treat sleep apnea is extremely effective however time must be allowed for a person to become accustomed to sleeping while using the unit. It can take several weeks of using the machine before the patient becomes completely comfortable with the equipment. CPAP is the most common type of treatment for symptomatic sleep apnea due to its effectiveness.

Oral appliance: This is a mouthguard which adjusts the position of the lower jaw to help open the airway during sleep. This can be easier to tolerate than CPAP however it is not effective in all cases of Obstructive Sleep Apnea.