

**OBSTRUCTIVE
SLEEP APNEA**

(OSA)



CANADIAN SLEEP SOCIETY

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What is obstructive sleep apnea?

Obstructive sleep apnea (OSA) consists of periodic stoppage of breathing (apnea) during sleep. This disrupts sleep quality, and can result in daytime sleepiness and fatigue. In severe cases, obstructive sleep apnea can result in an increased risk of heart disease and stroke.

Briefly, sleep induces muscle relaxation, which in turn allows pharyngeal (throat) structures to vibrate (snoring). If taken to an extreme, the airway gets sucked shut, similar to what occurs when sucking hard on a paper straw. Breathing stops (apnea), however, the brain detects a problem, and triggers an arousal from sleep. These arousals disrupt sleep quality, but restores normal muscle tone, thus opening the airway, and breathing resumes. Although a person may be unaware that they are experiencing frequent apneas, they may wake up feeling unrefreshed.

How common is obstructive sleep apnea?

Obstructive sleep apnea is extremely common. It has been estimated that 24% of middle-aged men and 9% of middle-aged women have obstructive sleep apnea. However, just like snoring, not everyone with OSA requires treatment. Symptomatic OSA occurs in about 4% of men and 2% of women, and is usually characterized by sleep disruption and/or daytime sleepiness.

Do I need to be treated for sleep apnea?

As mentioned previously, sleep apnea is extremely common. Treatment is considered if there is: (a) impaired quality of life or (b) health risk. In general, health risk from sleep apnea is only present in patients with severe sleep apnea. Most people seeking treatment for OSA do so for quality of life reasons. Impaired quality of life usually consists of poor sleep quality, daytime fatigue or sleepiness. Another concern for those people with OSA and excessive daytime sleepiness is the risk of falling asleep while driving.

Many medical and psychiatric conditions, and other sleep disorders can result in daytime fatigue, so it is important to make sure these have been ruled out. Also, an insufficient sleep time or insomnia (an inability to fall asleep or stay asleep) can cause daytime sleepiness as well.

How do I know if I have sleep apnea?

The most common symptoms are snoring, witnessed apneas (people observing you stopping breathing during sleep), choking/gasping episodes during sleep, and daytime sleepiness (despite a seemingly adequate sleep time). Obesity and high blood pressure are frequently seen in patients with sleep apnea, but not necessarily all the time. If you have symptoms suggestive of sleep apnea, then it is worthwhile having a sleep study. Depending on where you live in Canada, this may take the form of a portable monitor (home testing), or a visit to the sleep centre for an overnight sleep study or polysomnogram (PSG). Both of these tests measure your breathing and oxygen level in the blood. The PSG is a more sophisticated test which monitors brain wave (EEG) activity, eye movements (EOG), muscle activity (EMG), and breathing effort. It can also be used to diagnose sleep disorders other than sleep apnea, and can be used to guide therapy. Patients suspected of having severe sleep apnea, or an underlying heart or lung condition, are best evaluated with a PSG in a sleep centre setting.

How is sleep apnea treated?

Sleep apnea can be treated in a number of different ways. The type of treatment is usually decided upon based on balancing the severity of symptoms against desirability of therapy. Clearly, a less symptomatic person will wish a less aggressive form of therapy.

(1) *Behaviour and lifestyle modification:* Weight loss is the most important factor, and 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 one-self to sleep more on the side.

(2) *Surgery:* This 'opens' up the back of the throat. Surgery is an excellent way of treating snoring, however, the success rate for treating symptomatic sleep apnea is low. As such, surgery is not considered a first line treatment for sleep apnea. There are two types of procedures: uvulopalatopharyngealplasty (UP3) or laser-assisted uvulopalatopharyngealplasty (LAUP). UP3 is a conventional surgical procedure which requires a hospital visit. LAUP can be performed in a specialist's office, but frequently requires repeated treatments to be effective.

(3) *Continuous Positive Airway Pressure (CPAP):* CPAP consists of a portable machine that blows pressurized air thru a mask that is worn over the nose. The pressurized air holds the airway open, and thus prevents apneas. CPAP is extremely effective, but since it can be a bit cumbersome, a decision to use CPAP is dependent on balancing the severity of symptoms against the hassles of therapy. However, because of its effectiveness, CPAP is the most common type of treatment for symptomatic sleep apnea.

(4) *Oral appliance:* This is a mouthguard which advances the lower jaw, thus opening up the space at the back of the throat. It is worn while sleeping, and removed after waking. The oral appliance is less effective than CPAP but some patients find it easier to tolerate than CPAP therapy.

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