

OBSTRUCTIVE SLEEP APNEA



OBSTRUCTIVE SLEEP APNEA (OSA) IS

a breathing disorder characterized by repetitive episodes of upper airway obstruction during sleep. It is associated with a reduction in blood oxygen saturation and a wide variety of symptoms -including loud snoring, fragmented sleep and excessive daytime sleepiness. OSA is a problem that can sometimes prove very dangerous as the oxygen flow to the brain & heart may become disrupted.

To diagnose obstructive sleep apnea, an all-night sleep study must be performed to measure, amongst other parameters, the patient's Apnea-Hypopnea index (AHI). This index is a measure of the number of apneas and hypopneas per hour of sleep. If airflow into the lungs is interrupted for 10 seconds or more during sleep as a result of upper airway obstruction, this is recorded as an apneic episode. If the obstruction is only partial, this is known as a hypopnea episode.

A patient with an AHI of 5-15 is described as having mild OSA, while patients with an AHI of 15-30 and 30+ is described as having moderate OSA and severe OSA respectively.

OSA patients are often detected when the patient's bed partner complains that the patient snores in a loud and alarming manner. These snores are sometimes accompanied by choking, gasping or restless sleep, and the snoring is often worse when the patient is in the supine position.

The obstruction of the upper airway at night is usually also accompanied by increased gastric pressures and resultant heartburn or acid reflux symptoms, making the patient's sleep even less restful. Heavy sweating and snorting have also been noted as fairly common symptoms, as are dry mouth, drooling, sore-throat and morning headache on awakening. There is also a frequent need to pass urine during the night.

Another group of OSA patients are diagnosed when they complain of daytime tiredness and fatigue. They often notice that they have a tendency to fall asleep during quiet passive situations, to take naps and to have short periods of attention lapse during

tedious, repetitive tasks. This is a result of the sleep fragmentation and consequent sleep deprivation associated with OSA.

OSA has been known to lead to a wide variety of systemic and lung blood flow changes ranging from blood pressure and heart beat rhythm disorders to decreased blood flow in the brain and an increased chance of developing myocardial infarctions (heart attacks) and strokes.

Once OSA has been diagnosed, the condition can usually be improved by improving one's general health. Reducing one's weight and improving one's body mass index (BMI), is particularly effective, as is adopting a healthier lifestyle by exercising more and quitting smoking and drinking.

The use of a nasal continuous positive airway pressure (CPAP) machine at night has been known to be effective in keeping the airway patent especially in moderately severe and severe OSA. Within a short period, most patients will typically report decreased nocturnal awakenings, morning headaches and fatigue in addition to increased daytime alertness and cognitive function.

Surgery may be considered for nasal blockage to unblock the nose so that the CPAP may work better with less nasal complaints. The most common complaints with the CPAP machine are discomfort and interference with lifestyle. There may be other complaints of mask leak, claustrophobia, skin abrasion, sinus and chest discomfort, swallowing air. Nasal complaints of nasal congestion, running nose, nasal dryness and nose bleeding can occur. Where the patient does not comply with CPAP use, surgery may be considered.

The gold standard for surgical therapy for OSA is a tracheostomy- this is an opening made in the windpipe in the front of the neck. It shortcuts the upper airway through to the lungs. However as you can imagine an opening in the neck is associated with significant morbidity and psychosocial inconvenience. It's rarely used nowadays. From the 1980's various surgical options have been developed in an attempt to find a more permanent and less morbid cure to the problem. The surgical method used is tailored to the individual's upper airway problem. At the nose level, nasal valve surgery both for the internal and external nasal valves is done. It may involve as in a number of my patients a septorhinoplasty with batten grafting



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to prevent nasal valve collapse that occurs with aging and trauma. Soft palate resection and tightening via the UPPP or its modifications (with or without tonsillectomy) carries a 60% cure rate & is appropriate for my patients with narrowing or collapse at the retro palatal region (posterior roof of the mouth). For obstruction at the tongue base level, many options are available. For example lingual tonsils is removal when this is enlarged. Minimally invasive coblation tongue channeling is used when the whole tongue is noted to be bulky and affecting the airway patency when in the recumbent position. ■