

## Problem Solvers 32 Sleep Apnea

Synonyms: Snoring, C-PAP, sleep apnea, labored breathing, mouth breathing

In an Institute of Medicine study it was found that 50-70 million people have chronic sleep disorders in the United States. Obstructive sleep apnea may affect 18 million of these people and many people go undiagnosed. This can cost our health care system \$150 billion in lost wages; productivity and can result in workplace accidents. The treatments of obstructive sleep disorders, including apnea, are important as it can save lives if it is recognized and treated.

Sleep disorders such as snoring can be an indication you have sleep apnea. This is an illness that can be dangerous and can lead to impaired concentration, daytime sleepiness, morning headaches, decreased sex-drive and can result in heart attack and sudden death if left untreated.

### What is sleep apnea?

Sleep apnea is a medical condition where your body stops breathing during sleep. While there are different theories as to the causes of sleep apnea, it is thought that your muscles in your throat relax and the tongue may fall back in to this space reducing your airway during sleep. The resulting lack of oxygen can put strain on all of your organs. People that have sleep apnea may stop breathing for short intervals during their sleep and may wake up frequently as a result of this apnic episode. This can contribute to chronic fatigue syndrome.

### How is sleep apnea diagnosed?

Usually the symptoms such as snoring, poor sleep, chronic fatigue and excessive daytime sleepiness will lead a patient to pursue seeing a sleep medicine physician who will refer the patient for a sleep study. A sleep doctor will perform a test called polysomnography. This will measure your Apnea-hypopnea index using electrodes. This number is the average partial and complete pauses in breathing that occurs per hour of sleep.

Mild sleep apnea has an index AHI (Apnea-hypopnea index) of 5-15.

Moderate sleep apnea has an AHI of 15-30.

Severe sleep apnea as an AHI of more than 30.

### How is sleep apnea treated?

There are CPAP or Continuous Positive Air Pressure machines that push oxygen into the lungs during sleep.

Another type of treatment includes use of a dental appliance to reposition the lower jaw to improve airway patency and airflow.

Surgical intervention can be used to try and treat breathing disorders as well. This may include removal of tonsils, adenoids and part of the soft palate or throat surgery.

When should I pursue dental care for sleep apnea?

Oral sleep devices are a beginning treatment for mild to moderate obstructive sleep apnea. These involve using a retainer like device during sleep to help reposition the tongue and soft tissues in the throat to help decrease restricted breathing. It can often be used in conjunction with a CPAP machine.

Other candidates for dental devices are those people that are candidates for surgery who refuse surgical treatment or are CPAP intolerant.

How are these appliances made?

The dentist will often take impressions of your teeth and a registration of how you bite so that the dental laboratory can construct the appliance according to the dentists' prescription. This may mean that it will position your jaw forward to try and coax the tongue and throat muscles forward to keep the airway open at night. The success of treatment can be evaluated by performing sleep studies to verify the improvements in sleep after proper initial adjustment and evaluation. The sleep study can evaluate the incidence of snoring and apnea episodes throughout the nights study.

How do these appliances work?

They reposition the lower jaw, tongue and soft palate.

They stabilize the jaw in these new positions.

They may increase the muscle tone of the tongue.

I saw a device that looks like a turkey baster you put on your tongue, how are these?

A tongue -retaining device is a suction bulb that is used to pull the tongue forward during sleep. It may be a good device for some people.

Are there different types of sleep appliances?

Yes there are some that you put in boiling water and mold to your teeth and there are some precision crafted devices that have screws embedded in acrylic to allow for fine tuning and positioning. The type of device chosen will depend upon the care, skill and judgment of the treating dentist.

What are the types of surgery that I might consider if I can't wear my CPAP?

The first type is MMA or maxillomandibular advancement. This surgery involves moving the upper and lower jaw forward and wiring the jaw shut in this new position to tighten the soft palate and tongue. It is said to have a 94-100% success rate.

Anterior inferior mandibular osteotomy with hyoid suspension: This surgery involves pulling the tongue forward and neck muscles to tighten the base of the tongue. This does not require wiring your jaw shut.

Soft palate surgery: This can involve a Uvulopalatopharyngoplasty (UPPP) which involves trimming the tissues in the soft palate. It can include a modified surgery called a Laser Assisted Uvuloplasty (LAUP) that is designed to tighten the soft palate by cutting and scarring the soft palate in order to create tighter tissues. Another soft palate surgery is Somnoplasty that uses radiofrequency or energy waves to shrink the soft palate and tongue base.

All of these surgeries have the potential for complications such as throat swelling, infection, nasal reflux and should be evaluated carefully with the surgeon to understand all risks, benefits, advantages, disadvantages, and costs of the procedure.

Tongue reduction surgery can be performed for patients with severe tongue enlargement.

Weight reduction surgery such as bariatric surgery can be done (gastric bypass), to help treat obesity; which is highly linked to sleep apnea, snoring and health problems that are all exacerbated by obesity.

Sleep problems can lead to drowsy driving which can kill! Drivers with sleep apnea and chronic fatigue can be 15 times more likely to be involved in a motor vehicle death. The cost to our health care system approaches 48 million dollars a year for driving while sleep deprived.

It is important to have a team to treat sleep apnea which may include your physician, dentist, and oral surgeon. While CPAP is the gold standard for treatment of sleep apnea it is important to realize that up to 50% of patients can not tolerate this type of treatment so the use of oral appliances has been an important modality to help treat this severe medical condition.

If I give up smoking will it help my sleep apnea?

Behavior modification is an excellent adjunct to improving symptoms and sleep

apnea. These may include smoking cessation, alcohol avoidance, treatment for obesity, postural training to find different sleep positions and pillows to treat sleep issues.

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