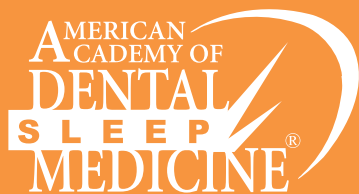


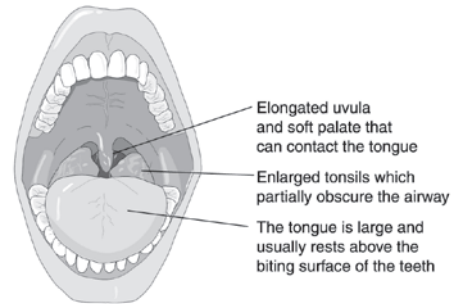
# Oral & Maxillofacial Surgery for Snoring & Obstructive Sleep Apnea

An Educational Pamphlet from the American Academy of Dental Sleep Medicine



## Snoring and Obstructive Sleep Apnea ♦♦♦

Snoring and obstructive sleep apnea (OSA) are common sleep-related breathing disorders (SBD). Snoring, primarily a social problem, is the sound of partially obstructed breathing during sleep. OSA, a potentially life-threatening medical disorder, occurs when the tongue and sometimes the soft palate collapse against the back of the throat to completely obstruct the airway and restrict oxygen flow to the body. The most common symptoms of OSA are snoring and excessive daytime sleepiness. Other OSA-related signs and symptoms include morning headaches, short-term memory loss, irritability, depression, reduced sex drive and impaired concentration. OSA progressively worsens with age and/or weight gain. Left untreated, OSA can cause high blood pressure, strokes, heart attacks, and death during sleep, as well as motor vehicle accidents due to drowsiness while driving.



What your dentist might see if you snore or have obstructive sleep apnea

## Surgical Treatment Options ♦♦♦

In general, surgery is indicated when the above-listed conservative therapies are non-applicable, unsuccessful, or intolerable. Surgery may be an effective treatment for SBD, but only if performed competently and on correctly identified anatomic sites that contribute to upper airway obstruction, which varies between different patients. A detailed examination of the entire upper airway is necessary before deciding which surgical procedures may be most effective. There are many surgical procedures available, some of which are listed on the next panel.

# SURGICAL TREATMENT OPTIONS ♦♦♦♦

## Maxillomandibular Advancement (MMA)

MMA involves osteotomies (bony cuts performed via intraoral incisions) to advance the upper and lower jaws to pull forward and tighten the soft palate, tongue and other attached soft tissues to enlarge and stabilize the entire upper airway. MMA is the most effective acceptable surgical treatment of moderate to severe OSA, with published success rates ranging from 94% to 100%. An overnight hospital stay is required and the jaws may be wired shut for several weeks, which may result in weight loss. MMA is a long operation that is difficult to perform, expensive, that may result in a malocclusion and numbness of the lips and chin.

## Anterior Inferior Mandibular Osteotomy (AIMO) with Hyoid Suspension

The AIMO involves a chin bone osteotomy for advancement of the genial tubercles to pull forward the attached tongue and hyoid (the U-shaped bone in the anterior neck) muscles to enlarge and stabilize the airway behind the tongue base. Although not as effective as MMA, the jaws do not have to be wired shut and there is no change in occlusion. AIMO may be performed solely as an outpatient procedure or in combination with MMA and other procedures.

## Surgery of the Soft Palate

There are many soft palatal operations that may be effective for mild to moderate SBD. Possible adverse side effects include throat swelling and pain immediately after surgery, and nasal reflux of air during speech and fluid while drinking. The most commonly performed procedure is a **Uvulopalatopharyngoplasty (UPPP)**, which involves trimming of a bulky soft palate, often performed in combination with removal of enlarged tonsils and/or adenoids. It has a published overall success rate of 41% for OSA. The following procedures are less therapeutic, but may have fewer side effects than UPPP: A **Laser-Assisted Uvuloplasty (LAUP)** is a modified UPPP that involves “scarring” cuts to tighten the soft palate and sequential trimming of the uvula over several appointments. **Radiofrequency Volumetric Tissue Reduction (RFVTR)**, sometimes called “Somnoplasty,” attempts to shrink the soft palate and tongue base using energy microwaves, delivered via a needle inserted within the tissues. **Pillars** are injectable synthetic threads designed to stiffen the soft palate.

## Nasal Surgery

Nasal obstruction may be treated by surgical procedures, including **Septoplasty** to straighten a deviated septum, and **Turbinate Reduction** to remove or reduce large turbinates and polyps. While these procedures may be performed independently as outpatient procedures, they are often used in combination with other procedures to treat SBD.

## Tongue Reduction Surgery

A wedge-shaped surgical reduction of the tongue base is generally subtherapeutic and has many potential adverse side effects.

## Weight Reduction Surgery

**Cervicofacial Liposuction** is a relatively safe procedure which selectively removes excessive fatty tissue below the chin and anterior neck to reduce the weight against underlying soft tissues and, thus, helps minimize airway collapse behind the tongue base. Its effectiveness for the treatment of SBD is not well-documented and is usually used in combination with other surgical procedures. **Bariatric surgery**, such as gastric bypass, is performed by general surgeons. It has many potential adverse side effects and a reported 0.5% mortality rate and, thus, may be indicated as a last resort treatment of morbidly obese patients with OSA.

## Tracheostomy

This operation bypasses the entire upper airway by the creation of an opening into the larynx (“windpipe”). Although having the highest therapeutic efficacy of any surgery, tracheostomy has many psychosocial problems and, thus, is typically reserved as a last resort for severe OSA. It is also indicated as an emergency or temporary airway access and for OSA patients with complicated medical conditions that prevent other surgical procedures.

Currently, there is no single universally effective and tolerable treatment for SBD. Therefore, dental sleep medicine requires an interdisciplinary approach that partners sleep physicians and dentists for the management of snoring and OSA.

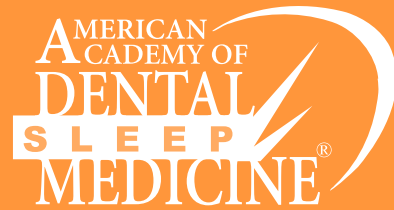
## Non Surgical Treatment Options ♦♦♦

Conservative therapies include weight loss, positional therapy, reduction in late evening consumption of alcoholic beverages or sedative-hypnotic medications, oral appliance therapy (OAT) and continuous positive airway pressure (CPAP). Oral appliances are small acrylic devices, similar to orthodontic retainers or sports mouth guards, worn in the mouth while asleep to protrude the lower jaw and tongue to enlarge the airway. OAT is quite effective for treating mild to moderate SBD, but may cause jaw joint discomfort. Nasal CPAP delivers pressurized room air through a nasal mask to pneumatically splint open the airway. CPAP is the most effective non-surgical treatment for OSA, but some patients have difficulty tolerating this device and may be noncompliant with required nightly use.

## American Academy of Dental Sleep Medicine ♦♦♦

Your American Academy of Dental Sleep Medicine dentist and sleep physician will work together with you to determine the best course of therapy.

To learn more about dental sleep medicine, please talk to your dentist, physician, or visit the American Academy of Dental Sleep Medicine Web site at [www.aadsm.org](http://www.aadsm.org).



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