

# Sleep Apnea Information and Resources

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In addition to the information below, check out the new [Stanford Sleep and Dreams website](#) to learn more about sleep apnea.

## What is Obstructive Sleep Apnea?

The most common kind of sleep apnea is called Obstructive Sleep Apnea Syndrome. Sleep apnea means "cessation of breath." It is characterized by repetitive episodes of upper airway obstruction that occur during sleep, usually associated with a reduction in blood oxygen saturation. In other words, the airway becomes obstructed at several possible sites. The upper airway can be obstructed by excess tissue in the airway, large tonsils, a large tongue and usually includes the airway muscles relaxing and collapsing when asleep. Another site of obstruction can be the nasal passages. Sometimes the structure of the jaw and airway can be a factor in sleep apnea.

## What are the symptoms?

- excessive daytime sleepiness
- frequent episodes of obstructed breathing during sleep. (The patient may be unaware of this symptom -- usually the bed partner is extremely aware of this).

## Associated features may include:

- [loud snoring](#)
- morning headaches
- unrefreshing sleep
- a dry mouth upon awakening
- chest retraction during sleep in [young children](#) (chest pulls in)
- high blood pressure
- overweight
- irritability
- change in personality
- depression
- difficulty concentrating
- [excessive perspiring during sleep](#)
- heartburn
- reduced libido
- [insomnia](#)
- frequent nocturnal urination (nocturia)
- restless sleep
- nocturnal snorting, gasping, choking (may wake self up)
- rapid weight gain
- [confusion upon awakening](#)

## How serious is sleep apnea?

**It is a potentially life-threatening condition that requires immediate medical attention.** The risks of undiagnosed obstructive sleep apnea include heart attacks, strokes, impotence, irregular heartbeat, high blood pressure and heart disease. In addition, obstructive sleep apnea causes daytime sleepiness that can result in accidents, lost productivity and interpersonal relationship problems. The severity of the symptoms may be mild, moderate or severe.

## How does the doctor determine if I have Obstructive Sleep Apnea?

A sleep test, called [polysomnography](#) is usually done to diagnose sleep apnea. There are two kinds of polysomnograms. An overnight polysomnography test involves monitoring brain waves, muscle tension, eye movement, respiration, oxygen level in the blood and audio monitoring. (for snoring, gasping, etc.) The second kind of polysomnography test is a home monitoring test. A Sleep Technologist hooks you up to all the electrodes and instructs you on how to record your sleep with a computerized polysomnograph that you take home and return in the morning. They are painless tests that are usually covered by insurance.

## How is Sleep Apnea treated?

Mild Sleep Apnea is usually treated by some behavioral changes. Losing weight, sleeping on your side are often recommended. There are oral mouth devices (that help keep the airway open) on the market that may help to reduce snoring in three different ways. Some devices (1) bring the jaw forward or (2) elevate the soft palate or (3) retain the tongue (from falling back in the airway and blocking breathing). Sleep Apnea is a progressive condition (gets worse as you age) and should not be taken lightly.

Moderate to severe Sleep Apnea is usually treated with a **C-PAP (continous positive airway pressure)**. C-PAP is a machine that blows air into your nose via a nose mask, keeping the airway open and unobstructed. For more severe apnea, there is a **Bi-level (Bi-PAP) machine**. The Bi-level machine is different in that it blows air at two different pressures. When a person inhales, the pressure is higher and in exhaling, the pressure is lower. Your sleep doctor will "prescribe" your pressure and a home healthcare company will set it up and provide training in its use and maintenance.

Find out about the different manufacturers who provide [respiratory equipment for obstructive sleep apnea](#). They have photos of their CPAP machines, masks and other equipment, so take a look.

Some people have facial deformities that may cause the sleep apnea. It simply may be that their jaw is smaller than it should be or they could have a smaller opening at the back of the throat. Some people have enlarged tonsils, a large tongue or some other tissues partially blocking the airway. Fixing a deviated septum may help to open the nasal passages. Removing the tonsils and adenoids or polyps may help also. Children are much more likely to have their tonsils and adenoids removed.

## TRACHEOSTOMY

The only available treatment until the early 1980's was a [tracheostomy](#). A tracheostomy is a surgical procedure where a small hole is cut in the neck and a tube with a valve is inserted into the hole. During the day the valve is closed so the person can speak. At night, the valve is opened, thus avoiding the obstructions. This procedure is only used today as a last resort or to avoid respiratory distress, or other serious medical complications (You would have to be extremely sick to require this).

## UVULOPALATOPHARYNGOPLASTY (UPPP)

What is available today in the way of surgery is the [uvulo-palato-pharyngoplasty \(UPPP\)](#). What does this mean? The **uvulo** refers to the uvula, that fleshy thing hanging in the back of your throat, **palato** refers to the palate, and **pharyngoplasty** means plastic surgery of the pharynx (the pharynx is the joint opening of the gullet and the windpipe). The uvula is removed along with excess tissue. This surgery is usually done for patients who can't tolerate nasal CPAP. This surgery has mixed reviews, it helps in around 50% who have the surgery and in others it does not help at all or it helps only partially and the patient may still need to use the C-PAP machine due to scar tissue.

## MANDIBULAR MYOTOMY

A procedure called **mandibular myotomy** was crafted by Drs. Nelson Powell and Robert W. Riley who are associated with the Stanford University Sleep Disorders Center. This procedure, **mandibular myotomy ( mandibular = relating to the lower jaw bone, and myotomy = surgical division of a muscle) with genioglossis (chin and tongue) advancement**, involves cutting a rectangular piece of bone in the anterior (front part) portion of the mandible (jaw) to which the tongue muscles are attached. At that point, the rectangular piece is pulled outward, rotated 90 degrees and attached so it overrides the defect produced by the osteotomy (cutting of bone), where it is reattached. This pulls the tongue forward six to ten millimeters and almost always eliminates the sleep-related obstruction.

These surgeries requires much research and consideration before you undertake it. They should only be performed by surgeons with considerable experience and documented training and skill in both ENT surgery and maxillofacial surgery.

## LASER ASSISTED UVULOPLASTY (LAUP)

There is also [Laser Assisted Uvuloplasty \(LAUP\)](#), is a surgical procedure to remove the uvula and surrounding tissue to open the airway behind the palate. This procedure has been used to relieve snoring. It has been used somewhat successfully in treating sleep apnea. Always make sure you have a doctor who has done the procedure many times and is preferrably extremely knowledgeable about sleep apnea. Ask lots of questions and do your homework!

## RADIO FREQUENCY (RF) PROCEDURE OR SOMNOPLASTY

The newest surgical procedure for **snoring** and **sleep apnea** is called [somnoplasty](#). The U.S. Food and Drug Administration has approved a treatment for snoring that uses radio waves to shrink tissue in air passages and [eliminate snoring](#). The procedure is called **radiofrequency volumetric tissue reduction of the palate**.

A new treatment for sleep apnea, **radiofrequency volumetric reduction of the tongue** has been approved by the FDA.

The radiofrequency treatment involves piercing the tongue, throat or soft palate with a special needle (electrode) connected to a radio frequency generator. The inner tissue is then heated to 158 to 176 degrees, in a procedure that takes approximately half an hour. The inner tissues shrink, but the outer tissues, which may contain such things as taste buds, are left intact. Several treatments may be required.

Unfortunately, at this time the procedure is so new that insurance companies are not covering it yet. It is still seen as an experimental procedure.

If you are still interested in the procedure, call Stanford Facial Reconstructive Surgery at (650) 328-0511.

Here's some articles about the **Radio Frequency (RF) Procedure (Somnoplasty)**:

- [Radio energy shrinks airway tissue, suggesting cure for snoring, apnea.](#) NEW
- [Somnoplasty](#) -- Channel 4000 News
- [Somnus Medical Technologies Somnoplasty System - Yahoo](#)
- [Company Founded to Develop Treatments for Snoring and Obstructive Sleep Apnea](#)
- Somnoplasty discussed on the SleepNet Forum One
  - [Message 1](#)
  - [Message 2](#)

## NASAL OBSTRUCTION

Sometimes the nasal passages are a site of obstruction. It can be from a deviated septum, large turbinates (nasal bones) or a collapse of the nostril area, called the nasal valve. The Radiofrequency procedure (see above) can effectively

reduce the size of the turbinates. Septoplasty surgery can fix a deviated septum and nasal valve surgery will take care of nostril collapse.

## ORAL POSITIVE AIRWAY PRESSURE (OPAP)

Another new invention that is being tested is the [OPAP](#), a dental appliance that conducts air through it. It may prove to be an alternative to the mask and headgear.



## RESOURCES

### AMERICAN SLEEP APNEA ASSOCIATION (ASAA)

1424 K Street NW

Suite 302

Washington, DC 20005

Tel: (202) 293-3650

Fax: (202) 293-3656

Contact Person: Christin Englehardt, Director of Programs and Development E-mail: [asaa@nicom.com](mailto:asaa@nicom.com)

Internet address: <http://www.sleepapnea.org>

Newsletter: **Wake-Up Call: The Wellness Letter for Snoring and Sleep Apnea** (Bi-monthly)

#### What they offer:

Membership includes a year long subscription to the bi-monthly ASAA newsletter **Wake-Up Call: The Wellness Letter for Snoring and Sleep Apnea**, with useful articles such as:

- Sleep Apnea and Anesthesia
- Sleep Apnea in Children
- Understanding a Sleep Study
- "Ask the Doctor" column
- "Ask the Lawyer" column

First time members receive a medical alert style identification bracelet or necklace to help assure that you will receive appropriate treatment for your sleep apnea during a medical emergency.

You are also invited to participate in the ASAA A.W.A.K.E. (Alert, Well and Keeping Energetic) Network with more than 200 mutual-help groups throughout the country. The ASAA can direct you to the nearest A.W.A.K.E. group or instruct you on how to start your own group. ASAA Membership is \$25 a year.

The ASAA also offers informational material on sleep apnea:

- A brochure, "**What is Sleep Apnea?**," defines the disease, describes its symptoms, explains the consequences of untreated apnea, and encourages those who may have apnea to seek diagnosis and treatment. The brochure includes the ASAA Snore Score, a simple self-diagnostic test.
- In addition, there are two videos available. "**What is Sleep Apnea?**" is a 17-minute video that explains in lay terms, what sleep apnea is, what the consequences may be, how diagnostic testing is performed, different treatment options and how C-PAP works.
- The second video, "**Sleep Apnea: There is an Alternative,**" is also 17-minutes in length to help persons as they first begin to use a CPAP machine. Several men and women who use CPAP explain how they adjusted to C-PAP. Bed partners also provide their perspective; all emphasize the tremendous improvement in life after treatment. The videos are \$19.95 each plus \$3.00 for postage and handling for each video.



## SLEEPNET

Internet Address: <http://www.sleepnet.com/>

All you wanted to know about sleep disorders but were too tired to ask. A comprehensive site that covers all sleep disorders. Sleep Apnea information is readily available. Read **The SnoozePaper** for new and interesting facts and information in the sleep disorder community. The Sandman has started a rating system to help web surfers find the best information. There is also forums to discuss sleep apnea and other sleep disorders.



## PHANTOM SLEEP PAGE

Internet Address: <http://www.newtechpub.com/phantom>

Jerry Halberstadt's **Phantom Sleep Page** is full of great information on sleep apnea as well as incorporating **SNORE CENTRAL's** information. Jerry Halberstadt and Dr. T. Scott Johnson wrote a great book, Phantom of the Night, that deals with all aspects of Sleep Apnea. Jerry has sleep apnea, so it is a unique and useful book for sleep apnea sufferers.



## SLEEP MEDICINE HOME PAGE

Internet Address: <http://www.cloud9.net/~thorpy>

The Sleep Medicine Home Page lists resources regarding all aspects of sleep.



## SLEEP APNEA ARTICLES



- [What is Apnea?](#)
- [Apnea & CPAP Equipment - What are they?](#)
- [Modern Medicine: Apnea: 'Lost sheep' of sleep disorders](#)
- [CNN - Sleeping Conditions - Apnea](#)
- [Sleep Apnea and the way it affects your breathing](#)
- [Sleep apnea - Can snoring really be fatal?](#)
- [Treatment of sleep apnea](#)
- American Academy of Family Physicians (AAFP) on Sleep Apnea
  - [What you can do about Sleep Apnea](#)
  - [Health Effects and Treatment of Sleep Apnea - 10/1/97](#)
- [Facts About Sleep Apnea - NIH, National Heart, Lung and Blood Institute \(NHLBI\)](#)
- [Sleep Apnea Mini Fact Sheet - July 1997 - National Institute of Neurological Disorders and Stroke \(NINDS\)](#)
- [Ask A Sleep Doc - A qualified sleep doctor will answer your questions](#)

- [Polysomnography - clinical practice guidelines](#)
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Please note: If you see a mistake, or wrong information, please E-mail: [Nodmaster](#). We welcome your comments, suggestions or notification of sleep related information.



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