

Snoring/Sleep Apnea

What are the symptoms of snoring with sleep apnea? When excessive tissues in the throat relax during sleep, air passing through vibrates these tissues to produce snoring. When these tissues collapse in some heavy snorers, there may be increased resistance to or decrease in flow of air, or stopping of breathing. This is called sleep apnea. With each breathing disturbance the heart slows, blood pressure rises, blood and brain oxygen drop, and cholesterol may be deposited in blood vessels. Then an awakening may occur, usually too short to remember, and normal breathing resumes. Mild sleep apnea affects 24% of men and 9% of women, and seems harmless. Moderate sleep apnea affects 4% of men and 2% of women and causes daytime sleepiness. Severe sleep apnea causes a significant increase in the risk of high blood pressure, heart attacks, strokes and sudden death.

How is it diagnosed? Monitoring of sleep and breathing throughout the night, in a sleep disorders center, is the best way to diagnose sleep apnea.

How is it treated? Severe sleep apnea is potentially life threatening, and should be treated aggressively. Severe sleep apnea is best treated with CPAP, a device that pumps air into the airway and inflates it. CPAP always works, controls the sleepiness and prevents the deaths associated with severe sleep apnea. Surgery on the palate and uvula is usually not sufficient, but additional surgery to cut and move forward both jaws works. When apnea is moderate, options include CPAP, palate surgery, a mouth device, or medicines. Moderate sleep apnea should definitely be treated if it causes sleepiness. Otherwise, treatment for mild to moderate sleep apnea is optional, since it is a social problem more than a medical problem.

When should I seek help? If snoring is accompanied by sleepiness, or someone has noticed you stopping breathing in sleep, you probably have sleep apnea. It is very important to have this evaluated, and, if necessary, treated. When there is snoring without sleepiness or stopping breathing in sleep, medical evaluation and testing is not always necessary.

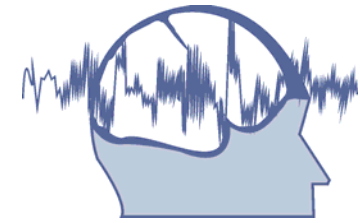
Testing for Sleep Apnea

The best test for sleep apnea is a Polysomnography. Polysomnography involves monitoring of brain waves, eye movements and chin muscles to determine presence and type of sleep. Brain waves are also monitored to look for possible seizures. Heart monitoring for irregular heart beats and monitoring of breathing for altered breathing in sleep also occurs. Monitoring of breathing effort gives the reason for altered breathing. Leg muscle activity shows arousals and abnormal movements in sleep. Monitoring of blood oxygen with a light-emitting probe on the finger shows the effect of altered breathing on blood oxygen levels. The testing occurs in a private room in the office designed to look like a hotel room. A technologist is present all night in a monitoring room to monitor you, using video and audio monitors and the neurophysiological equipment. Patients often ask how they will sleep in such circumstances. Yet most patients sleep about the same as they do in a hotel room.

Testing for daytime sleepiness is by monitoring how quickly you fall asleep during multiple tests during the day. Sleepy people fall asleep too quickly and have difficulty staying awake.

Sleep Medicine is now a well established field, practiced mostly by the specialties of clinical neurophysiology and pulmonary medicine. Sleep Medicine has its own section in the neurophysiological procedure codes. Most insurances cover most of the testing fees. However, the medical reimbursement area changes rapidly, and each third party payer may have its own rules and policies. A physician's office provides diagnostic testing at a much lower cost than a hospital outpatient center. If you have co-pays, you have to pay more out of pocket at the hospital.

Testing should be performed at a sleep disorders center accredited by the American Academy of Sleep Medicine. There are many sleep disorders centers in the area, and your best assurance of quality is such accreditation. **The Sleep Disorders Institute is accredited.** For a list of accredited centers, call the American Academy of Sleep Medicine at (507)287-6006.



Snoring And Sleep Apnea

An informational brochure brought to you courtesy of the **Sleep Disorders Institute** (R Bart Sangal, MD, Director)

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Treatment of Sleep Apnea

Severe sleep apnea, with more than 30 respiratory disturbances per hour sleep, may increase risk of high blood pressure, heart attacks, strokes and sudden death. Treatment is necessary whether or not sleepiness is present. **Moderate sleep apnea**, with 10-30 respiratory disturbances per hour sleep, is also not clearly associated with increased risk of illness or death. However, it can cause daytime sleepiness and auto accidents. Treatment is necessary in the presence of sleepiness, and optional in the absence of sleepiness. **Mild sleep apnea and snoring without sleep apnea**, with less than 10 respiratory disturbances per hour sleep, are not associated with increased medical risks. Treatment for snoring only is not medically necessary; therefore insurance may not cover it. **Treatments for sleep apnea include:**

1. Continuous Positive Airway Pressure (CPAP): This is the definitive treatment. CPAP is the most effective treatment for moderate to severe sleep apnea, and works almost all the time. It is the preferred first step. Follow-up studies show that patients treated with CPAP are less likely to die than untreated patients or patients treated with surgery. CPAP consists of a mask placed on the nose. This connects by a hose to a small portable pump in the room. The pump works electrically, draws room air and pumps it into the airway. This inflates the entire airway, and prevents it from collapsing. The snoring and the apnea stop. However, CPAP requires a commitment to use it every night. Although it is uncomfortable initially, most people get used to it. It is about as noisy as a fan, which is much less noisy than snoring.

To find the correct air pressure to prescribe, the device is used with different pressures during an overnight test. Thereafter, the device is prescribed and may be obtained from any medical supply company. The initial prescription is typically for three months. Insurers often want the physician to certify that the patient received the device. This can only be done if the patient returns for an office visit after the supplier sends the paper-work to us. If the device works well and is well tolerated, the next prescription is usually for a year. Thereafter, annual office visits and continuing prescriptions are necessary. **Possible problems include:** (a) Dry

nose or congestion: A humidifier in the circuit helps. The supplier should give you a humidifier at no additional cost to you. If you are still congested, do not use over the counter decongestants. Call us for a prescription of nasal steroids. If your mouth opens up, a chin strap may help. (b) Uncomfortable mask: Contact supplier for a different size, a spacer between the nose and mask, or a nasal pillow. Within the first week, the supplier should change masks at no further cost to you. If the mask actually causes bruising, use moleskin and a local steroid cream. (c) Difficulty sleeping with the device: Medicines that help you sleep may help. (d) The air pressure feels too high: Lowering the pressure temporarily may help. A BiPAP unit may help by lowering the pressure when you breathe out.

2. Surgery: Several types of surgery are available to treat sleep-related problems of snoring and sleep apnea. Most of the surgeries make the airway larger by tightening or removing structures in your throat. Other procedures unblock your nose or reposition your jaw. Consultation with an otolaryngologist, a doctor who is trained in performing these surgical procedures, is helpful to see if surgery can help your problems with snoring or sleep apnea. After your surgery a follow-up sleep test is necessary to tell whether the surgery was successful. Finally, surgery may be the only option for those individuals who cannot tolerate the CPAP device.

Nasal Surgery: Straightening the septum, trimming the turbinates or removing polyps can improve snoring and may make CPAP easier to tolerate.

Radio-Frequency Somnoplasty: This is a treatment for snoring and stuffy nose. It is virtually painless. Snoring typically takes 2-3 treatments. Stuffy nose, particularly for patients finding it difficult to wear CPAP, takes one session. All patients return to work the same day of the procedure.

Laser-Assisted Uvuloplasty (LAUP): This procedure removes part or all of the uvula. This can reduce the vibration of tissue that causes snoring, but is not usually helpful in sleep apnea. Significant reduction of snoring is usually achieved in one treatment. Most patients return to work next day.

Uvulo-palato-pharyngo-plasty (UPPP): The most common form of surgery to treat sleep apnea is called UPPP. This surgery removes the tonsils, if present, the uvula (the object that dangles from the back of the roof of the mouth), and a portion of the

soft palate. It can be successful in stopping the throat structures from rattling and collapsing during sleep. In mild to moderate sleep apnea, It can reduce the severity of sleep apnea by half especially if the tonsils are present. When combined with somnoplasty shrinkage of the tongue base, success rates approach 60% in selected patients.

Genioglossus Advancement and Hyoid Myotomy and suspension (GAHM): In cases of moderate to severe sleep apnea, these procedures can bring the chin forward, and bring the bone above the voice box forward. This helps enlarge the airway at the back of the tongue. If done following UPPP, this may increase the success rate to 70%.

Maxillo-Mandibular Advancement (MMA): Advancing both the upper and lower jaw following UPPP may increase the success rate to 90%.

Tracheotomy: Making an opening in your neck and allowing you to breathe through this opening at night increases the success rate to 100%. It is usually reserved for cases of life-threatening apnea.

3. Oral devices: These devices fit on the upper teeth, and the lower teeth then bite into the device. These work about 50% of the time in mild to moderate sleep apnea. The Sleep Disorders Institute can customize a form device for you, or you can get a fully custom-fitted device from a dentist.

4. Medicines: Medicines such as protriptyline and the serotonin re-uptake inhibitors may help by increasing tongue muscle tone.

5. Behavioral techniques: Sleep apnea is worse on the back, and a wiffle ball sewn to the back of the pajamas keeps you off your back. Avoiding alcohol at night helps. Weight loss helps, but weight lost is almost never kept off.

Follow-up testing: With any treatment except CPAP, success rates are limited. Snoring may stop, but apnea may persist. Follow-up testing after 1-2 months is essential. With CPAP, follow-up testing is needed if the apnea was not fully controlled during the testing to find the right pressure, or if symptoms persist. Sleep apnea can be dangerous. **Do not stop using CPAP on your own.**