


Obstructive Sleep Apnea

Obstructive sleep apnea is a very common disorder. As many as 1 in 5 adults in the United States may have mild sleep apnea, and 1 in 15 may have moderate to severe sleep apnea. The disorder causes fatigue and sleepiness and it increases the risk of high blood pressure, stroke, and heart attack. It is important to diagnose and treat this potentially dangerous condition.

What is Obstructive Sleep Apnea? Apnea is the medical term for pauses in breathing, and people with sleep apnea have repetitive episodes of partially or completely absent breathing during sleep. When we breathe in, we expand the chest, creating a suction pressure that pulls the air in. In the back of the throat, we rely on muscles to hold the airway open against this suction pressure. During sleep, it is normal for these muscles to relax; the tongue falls back a bit and the airway gets smaller. Normally, this does not cause any trouble, but if the throat relaxes too much, or if the throat is too small, then the airway can partially or completely collapse. Loud snoring is usually present. With each episode, the brain senses the problem with breathing, the person awakens for a second, opens the throat, often with a gasp or snort, and is immediately back asleep, usually with no awareness that anything has happened. It is not uncommon for sleep apnea patients to average one awakening per minute for the entire night. Sleep apnea is more common in males, in those who are overweight, but occurs in people of all ages. Anything that makes the throat smaller, such as large tonsils or a small jaw, increases the likelihood of developing sleep apnea.

If the airway closes completely, that is an apnea. A decrease in airflow from partial obstruction is called a hypopnea. The number of apneas and hypopneas per hour, called the apnea hypopnea index, is a measure of the severity of sleep apnea. The brief awakenings from the apneas and hypopneas are called arousals. With snoring there can be some narrowing of the throat, which makes it harder to breathe in without actually decreasing the size of the breath. That can be enough to trigger an arousal. Patients with sleep apnea do not always have apneas that are obvious to their bed partner.

Frequent arousals fragment sleep and make it non-restorative. Patients are often restless through the night, tossing and turning. The fragmented sleep causes daytime fatigue and sleepiness that may be severe. Patients can sleep away their evenings and weekends. There is an increased risk of car crashes. Mental clarity suffers, and some people become cranky or depressed. Sleep apnea can cause a significant decrease in quality of life, and can also affect bed partners. The noise and movement can ruin a partner's sleep; it is not unusual that one case of sleep apnea results in two tired people.

Additionally, with every apnea there is a drop in the oxygen level and a surge in blood pressure. Sleep apnea can cause high blood pressure and can make existing high blood pressure more difficult to control. Strokes and heart attacks are more common in sleep apnea patients. Sleep apnea has been associated with heart rhythm disturbances, diabetes, and heart failure.

Who should be evaluated for sleep apnea? Sleep apnea should be considered in people who snore loudly. Anyone with snoring plus excessive daytime sleepiness or fatigue, obesity, high blood pressure, diabetes, or heart problems warrants evaluation. Anyone who appears to stop breathing during sleep should also be checked.

What testing is done? Patients are often referred to a sleep medicine specialist for an evaluation to decide what testing is necessary. The standard method of diagnosing sleep apnea is an overnight sleep study, called a polysomnogram. Patients spend the night in a quiet bedroom with wires attached to them for monitoring sleep (brain wave activity), breathing, oxygen level, heart rhythm, and movement. A sleeping medication can be given if needed. Data is recorded on a computer and later analyzed.

How is sleep apnea treated? Sleep apnea is often related to weight, and in some cases, weight loss may improve the snoring and apnea significantly. Some patients have apneas mainly in one position (usually sleeping on the back), and avoiding that position in bed can help. Tilting the head of the bed up is sometimes beneficial. Several substances relax the throat and can worsen sleep apnea, including alcohol, tranquilizers, some sleeping pills, and some pain medications. These should be avoided. Maintaining good sleep practices (adequate sleep, avoiding excessive caffeine, quiet dark bedroom) is also important.

A number of surgeries have been tried for sleep apnea. Unfortunately, surgery is not always successful. For certain patients with an obvious cause for sleep apnea, surgery may be the first line of treatment. For example, sleep apnea can occur in children, usually because of large tonsils, and tonsillectomy is the most common treatment. If patients are unable to tolerate other treatments, surgery may be a second choice. Surgeries include tonsillectomy, removal of the uvula and the surrounding tissue to enlarge the opening at the back of the mouth, and treating any degree of nasal blockage.

Dental appliances have been shown to be effective for snoring and mild-moderate sleep apnea. The most common type resembles upper and lower retainers that snap on the teeth and hook together, moving the jaw forward. This moves the tongue forward and enlarges the opening at the back of the mouth.

The most common and most effective treatment for significant obstructive sleep apnea is a device called a CPAP machine. CPAP stands for Continuous Positive Airway Pressure.

A small quiet air pump sits by the bed, and the patient wears a mask, usually covering the nose, during sleep. The machine pumps in extra air with each breath to overcome the suction pressure that pulls the throat shut. The air pressure holds the throat open, eliminating snoring and apneas. CPAP is usually started in the sleep laboratory, where the correct level of pressure is individually determined. Although they may not look forward to wearing a mask during sleep, most people adapt well to CPAP and sleep much better with it. Usually the bed partner's sleep also improves.

In summary Sleep apnea is a common disorder that significantly impacts quality of life and increases the risk of high blood pressure, stroke, and heart disease. Effective and safe treatment is available. CPAP therapy does not involve surgery or pills, and it is usually well tolerated. A variety of different mask types are available. Treatment can lead to major changes in the quality of one's life, with improvements in alertness, mental clarity, mood, energy level, and cardiovascular health.

Sleep Medicine Center of Kansas is an American Academy of Sleep Medicine Accredited Sleep Center

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