

# Sleep Apnea

## What Is Sleep Apnea?

**Sleep apnea is a common disorder that can be very serious.**

In sleep apnea, your breathing stops or gets very shallow while you are sleeping. Each pause typically lasts 10-20 seconds or more. These pauses can occur 20 to 30 times or more an hour.

The most common type of sleep apnea is obstructive sleep apnea. During sleep, enough air cannot flow into your lungs through your mouth and nose even though you try to breathe. When this happens, the amount of oxygen in your blood may drop. Normal breaths then start again with a loud snort or choking sound.

Your sleep is not restful because:

- These brief episodes of increased airway resistance (and breathing pauses) occur many times
- You may have many brief drops in your oxygen levels of the blood.
- You move out of deep sleep and into light sleep several times during the night, resulting in poor sleep quality.

When your sleep is upset throughout the night, you can be very sleepy during the day.

- People with sleep apnea often have loud snoring. However, not everyone who snores has sleep apnea. Some people with sleep apnea don't know they snore.
- Sleep apnea happens more often in people who are overweight, but even thin people can have it.
- Most people don't know they have sleep apnea. They don't know that they are having problems breathing while they are sleeping.
- A family member and/or bed partner may notice the signs of sleep apnea first.

Untreated sleep apnea can increase the chance of having high blood pressure and even a heart attack or stroke. Untreated sleep apnea can also increase the risk of diabetes and the risk for work-related accidents and driving accidents.

## What Causes Sleep Apnea?

**Sleep apnea happens when enough air cannot move into your lungs while you are sleeping.**

When you are awake and normally during sleep, your throat muscles keep your throat open and air flows into your lungs. However, in obstructive sleep apnea, the throat briefly collapses, causing pauses in your breathing. With pauses in breathing, your oxygen level in your blood may drop. This happens when:

- Your throat muscles and tongue relax more than is normal.
- Your tonsils and adenoids are large.
- You are overweight. The extra soft tissue in your throat makes it harder to keep the throat area open.
- The shape of your head and neck (bony structure) results in somewhat smaller airway size in the mouth and throat area.

With the throat frequently fully or partly blocked during sleep, enough air cannot flow into your lungs, even though efforts to breathe continue. Your breathing may become hard and noisy and may even stop for short periods of time (apneas).

Central apnea is a rare type of sleep apnea that happens when the area of your brain that controls your breathing doesn't send the correct signals to the breathing muscles. There is then no effort to breathe at all for brief periods. Snoring does not typically occur in central apnea.

### **Who Gets Obstructive Sleep Apnea?**

**Anyone can have obstructive sleep apnea.**

It is estimated that more than 12 million Americans have obstructive sleep apnea. More than half the people who have sleep apnea are overweight, and most snore heavily.

Adults most likely to have sleep apnea:

- Snore loudly
- Are overweight
- Have high blood pressure
- Have decreased size of the airways in their nose, throat, or mouth. This can be caused by the shape of these structures or by medical conditions causing congestion in these areas, such as hay fever or other allergies.
- Have a family history of sleep apnea.

Sleep apnea is more common in men. One out of 25 middle-aged men and 1 out of 50 middle-aged women have sleep apnea that causes them to be very sleepy during the day. Sleep apnea is more common in African Americans, Hispanics, and Pacific Islanders. If someone in your family has sleep apnea, you are more likely to develop sleep apnea than someone without a family history of the condition.

Obstructive sleep apnea can also occur in children who snore. If your child snores, you should discuss it with your child's doctor or health care provider.

### **What Are The Signs and Symptoms of Sleep Apnea?**

The most common signs of sleep apnea are:

- Loud snoring
- Choking or gasping during sleep
- Fighting sleepiness during the day (even at work or while driving)

Your family members may notice the symptoms before you do. You will likely not otherwise be aware that you have problems breathing while asleep.

Others signs of sleep apnea may include:

- Morning headaches
- Memory or learning problems
- Feeling irritable
- Not being able to concentrate on your work.
- Mood swings or personality changes, perhaps feeling depressed
- Dry throat upon awaking
- Frequent urination at night.

### **How Is Sleep Apnea Diagnosed?**

Some of the ways to help doctors diagnose sleep apnea include:

- A medical history that includes asking you and your family questions about how you sleep and how you function during the day
- Checking your mouth, nose, and throat for extra or large tissues, for example tonsils, uvula (the tissue that hangs from the middle of the back of the mouth), and soft palate (roof of your mouth in the back of your throat)
- A sleep recording of what happens with your breathing.

A sleep recording is a test that is often done in a sleep center or sleep laboratory, which may be part of a hospital. You may stay overnight in the sleep center, although sleep studies are sometimes done in the home. The most common sleep recording used to find out if you have sleep apnea is called a polysomnogram (poly-SOM-no-gram) or PSG. This test records:

- Brain activity
- Eye movement
- Muscle activity
- Breathing and heart rate
- How much air moves in and out of your lungs while you are sleeping
- The percent of oxygen in your blood

A PSG is painless. You will go to sleep as usual. The staff at the sleep center will monitor your sleep throughout the night. The results of your PSG will be analyzed by a sleep medicine specialist to see if you have sleep apnea, how severe it is, and what treatment may be recommended.

In certain circumstances, the PSG can be done at home. A home monitor can be used to record heart rate, how air moves in and out of your lungs, the amount of oxygen in your blood, and your breathing effort. For this test, a technician will come to your home and help you apply the monitor you will wear overnight. You will go to sleep as usual, and the technician will come back the next morning to get the monitor and send the results to your doctor.

Once all your tests are completed, the sleep medicine specialist will review the results and work with you and your family to develop a treatment plan. In some cases, you may also need to see another physician for evaluation of:

- Lung problems (pulmonologist)
- Problems with the brain or nerves (neurologist)
- Heart or blood pressure problems (cardiology)
- Ear, nose, or throat problems (ENT)
- Psychologist or psychiatrist

### **How Is Sleep Apnea Treated?**

**Treatment is aimed at restoring regular nighttime breathing and relieving symptoms such as very loud snoring and daytime sleepiness.**

If you have mild sleep apnea, some changes in daily activities or habits may be all that are needed:

- Avoid alcohol, smoking, and medications that make you sleepy. They will make it harder for your throat to stay open while you sleep.
- Lose weight if you are overweight. Even a little weight loss can improve your symptoms.
- Sleep on your side instead of your back. Sleeping on your side may help keep your throat open.

People with moderate or severe sleep apnea will need to make these changes as well. They also will need other treatments such as:

### **Continuous Positive Airway Pressure (CPAP)**

CPAP is the most common treatment for sleep apnea. For this treatment, you will wear a mask over your nose during sleep that blows air into your throat at a pressure level that is right for you. The increased airway pressure acts to keep the throat open while you sleep. The air pressure is adjusted so that it is just enough to stop these airways from briefly getting too small during sleep.

Sleep apnea will return if CPAP is stopped or if it is not used correctly. Usually, a technician comes to your home to bring the CPAP equipment. The technician will set up the CPAP machine and make adjustments based on your doctor's orders.

CPAP treatment may cause side effects in some people. Some side effects are:

- Dry or stuffy nose
- Irritation of the skin on your face
- Bloating of your stomach
- Sore eyes
- Headaches.

If you are having trouble with CPAP side effects, work with your sleep medicine specialist and technician. Together you can do things to reduce these side effects, such as:

- Using a nasal spray to relieve a dry, stuffy, or runny nose
- Adjusting the CPAP settings
- Adjusting the size/fit of the mask
- Adding moisture to the air as it flows through the mask
- Using a CPAP machine that can automatically adjust the amount of air pressure to the level that is required to keep the airway open
- Using a CPAP machine that will start with a low air pressure and slowly increase the air pressure as you fall asleep.

People with severe sleep apnea symptoms generally feel much better once they begin treatment with CPAP. When using CPAP, it is very important that you follow up with your doctor. If you are having side effects, talk to your doctor.

### **Mouthpiece**

A mouthpiece (oral appliance) may be helpful in some people with mild sleep apnea. Some doctors may also recommend this if you snore loudly but do not have sleep apnea.

A custom-fit plastic mouthpiece will be made by a dentist or orthodontist. An orthodontist is a specialist in correcting teeth or jaw problems. The mouthpiece will adjust your lower jaw and your tongue to help keep the airway in your throat open while you are sleeping. Air can then flow easily into your lungs because there is less resistance to breathing.

Possible side effects of the mouthpiece include damage to your:

- Teeth
- Gums
- Jaw

Follow up with your dentist or orthodontist to check for any side effects and to be sure that your mouthpiece fits.

## **Surgery**

Some people with sleep apnea may benefit from surgery. The type of surgery depends on the cause of the sleep apnea:

- Surgery to remove the tonsils and adenoids if they are blocking the airway. This surgery is especially helpful for children.
- Uvulopalatopharyngoplasty (UPPP) is a surgery that removes the tonsils, uvula (the tissue that hangs from the middle of the back of the roof of the mouth), and part of your soft palate (roof of your mouth in the back of your throat). This surgery is only effective for some people with sleep apnea.
- Laser-assisted uvulopalatoplasty (LAUP) is a surgery that can stop snoring but is probably not helpful in treating sleep apnea. A laser device is used to remove the uvula and part of the soft palate. Because the main symptom of sleep apnea-snoring-is stopped, it is important to have a sleep study before having this surgery.

Tracheostomy is a surgery used in severe sleep apnea. A small hole is made in the windpipe and a tube is inserted. Air will flow through the tube and into the lungs. This surgery is very successful but is needed only in patients not responding to all other possible treatments.

Other possible surgeries for some people with sleep apnea include:

- Rebuilding the lower jaw
- Surgery of the nose
- Surgery to treat obesity.

Currently, there are no medications for the treatment of sleep apnea.

## **Living With Sleep Apnea**

Getting treatment for sleep apnea and following your doctor's advice can help you and your family members.

- Getting treatment for sleep apnea can help snoring and improve your sleep.
- Treating sleep apnea helps you feel rested during the day.
- Many people will benefit by making changes, such as stopping smoking and losing weight.
- Some will need to wear a mask at night that will help keep the throat open and improve breathing.
- A few will need to have surgery to remove tonsils and adenoids, part of the uvula (the tissue that hangs from the middle of the back of the roof of the mouth), and/or the soft palate (roof of your mouth in the back of your throat) that may block the airway.

- Regular and ongoing follow up with your sleep medicine specialist who will check if your treatment is working and if you are having any side effects.

### **For Family and Friends, What Can You Do To Help?**

Often, people with sleep apnea do not know they have it. They are not aware that their breathing stops and starts many times while they are sleeping.

Family members or bed partners are usually the first ones to notice that the person snores and stops breathing while sleeping. It is important for people with sleep apnea to get medical help. They are at higher risk for car crashes and work-related accidents and other medical problems due to their sleepiness.

People with sleep apnea may fall asleep during the day, even when:

- Driving a car
- Working
- Talking on the phone.

Sleep apnea can be very serious. It is important that people with sleep apnea see their doctor to treat and control this disorder. Treatment may improve the person's overall health and happiness, and the quality of sleep both for the person and the entire family.

### **Links to Other Information About Sleep Apnea?**

#### **NHBLI**

- [National Center on Sleep Disorders Research Web Page](#)

#### **Other**

- [Sleep Disorders-All](#) (Medline Plus)
- [Snoring](#) (Medline Plus)

#### **Clinical Trials**

- [Current Research](#) (National Institutes of Health)

### **Frequently Asked Questions**

#### **What is sleep apnea?**

Sleep apnea is a common breathing disorder in which your breathing periodically stops or gets very shallow for brief periods while you sleep.

**What does the word apnea mean?**

Apnea is a Greek word meaning "want of breath."

**How will my doctor know if I have sleep apnea?**

Your doctor will do a physical exam, ask you and your family about your sleep habits, and recommend a number of tests, including sleep recordings, to diagnose sleep apnea.

**In sleep apnea, how does breathing restart after stopping during sleep?**

Your brain tells your throat and mouth muscles to open your airway. This will send air to your lungs. Breathing is often started with a loud snort or choking sound.

**I am using Continuous Positive Airway Pressure (CPAP) at night and I do not like it. Can I stop wearing it?**

It is important to continue to use CPAP. If you have problems with CPAP, talk to your sleep medicine specialist about making adjustments. CPAP keeps your airway open during sleep so that air can get into your lungs. The use of CPAP decreases the symptoms and other medical problems associated with sleep apnea.

**If I stop snoring, does that mean that I don't have sleep apnea any more?**

No. Treating sleep apnea may help you stop snoring. Stopping snoring does not mean that you no longer have sleep apnea or that you can stop the CPAP.

**I was just diagnosed with sleep apnea. What should I do?**

The instructions listed below will help you improve your everyday life with sleep apnea. In milder cases, these things may be enough and CPAP may not be needed.

- Follow your doctor's directions for treatment.
- Follow up with your doctor to make sure your treatment is working.
- Do not drink alcohol or take medications that make you sleepy before going to bed.
- Sleep on your side instead of your back.
- Lose weight if you are overweight
- Quit smoking.

If you have a mild case of sleep apnea and follow these instructions, you may not need CPAP.

**Sleep Apnea At A Glance**

- Sleep apnea is a common breathing disorder that can be very serious.

- In sleep apnea, your breathing stops or gets very shallow for periods of 10 seconds or longer many times during the night.
- Most people with sleep apnea regularly snore loudly.
- Loud snoring and choking or gasping during sleep and being sleepy during the day are the most common signs of sleep apnea.
- Having a physical exam and providing your doctor with information about your sleep will help to diagnose sleep apnea. Your doctor may also want you to have special sleep tests.
- Treatment is aimed at restoring regular nighttime breathing and relieving symptoms such as loud snoring and daytime sleepiness. Treatment will also help associated medical problems such as high blood pressure and reduce the risk for heart attack and stroke.