



Patient Sleep Education Booklet

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Thank you for choosing the Sleep Study Center of Pulmonary & Sleep Specialists

In our Patient Sleep Education Booklet, you will find information on the following:

- Sleep Apnea-Symptoms & Risk Factors
- HST-Home Sleep Study Testing Process
- In-lab Sleep Study Testing Process & Results
- CPAP Titration Study Overview
- CPAP Titration Study Testing Process
- CPAP Health Risk Prevention
- Benefits to Your Health and Well-Being

Please read through the information and if you have any questions, please feel free to call us and talk with us on any of the above listed topics.

Sleep Apnea - Symptoms & Risk Factors

The most common **symptom** of sleep apnea is **snoring**. However, not everyone who snores has sleep apnea. Snoring is likely to be a sign of sleep apnea when it is followed by silent breathing pauses and choking or gasping sounds.

People with sleep apnea often have daytime sleepiness or fatigue.

Common symptoms of sleep apnea include:

- Loud or frequent snoring
- Silent pauses in breathing
- Choking or gasping sounds
- Daytime sleepiness or fatigue
- Unrefreshing sleep
- Insomnia
- Morning headaches
- Nocturia (waking during the night to go to the bathroom)
- Difficulty concentrating
- Memory loss
- Decreased sexual desire
- Irritability

Risk Factors

The major risk factor for sleep apnea is excess body weight. You are much more likely to have sleep apnea if you are overweight or obese. However, sleep apnea can occur in slim people too. Common risk factors for sleep apnea include:

- **Excess weight** – Your risk for sleep apnea is higher if you are overweight with a body mass index (BMI) of 25 or more or obese with a BMI of 30 or higher.
- **Large neck size** - Your risk for sleep apnea is higher if you have a neck size of 17 inches or more for men, or 16 inches or more for women. A large neck has more soft tissue that can block your airway during sleep.
- **Middle age** – Sleep apnea can occur at any age. However, it is more common between young adulthood and middle age.
- **Male gender** – Sleep apnea is more common in men than in women. For women the risk of sleep apnea increases with menopause.
- **Hypertension** – High blood pressure is extremely common in people who have sleep apnea.
- **Family history** – Sleep apnea is a heritable condition. This means that you have a higher risk of sleep apnea if a family member also has it. Inherited traits that increase the risk for sleep apnea include obesity and physical features such as a recessed jaw. Other common family factors - such as physical activity and eating habits - also may play a role.

Home Sleep Apnea Testing - Testing Process & Results

Testing Process

A home sleep apnea test is designed to be a convenient way to collect information about your sleep. On the day of your test:

- Try to follow your regular routine as much as possible.
- Avoid napping
- Eliminate use of caffeine after lunch

If you are on a regular medication, speak with your board-certified sleep medicine physician. Your doctor may recommend that you temporarily discontinue using the medication.

Before your home sleep apnea test, you may have to go to the doctor's office to pick up the equipment. Alternatively, someone may deliver the home sleep apnea test to your home.

A member of the sleep team will give you instructions on how to use the home sleep apnea test device. This is an opportunity for you to ask questions if there is anything you do not understand.

You can go to sleep at your regular bedtime. When you are ready to sleep, you will attach the sensors to your body as instructed. You may be asked to keep a sleep log or to press a button on the machine when you get into bed. When you wake up in the morning, you can remove the sensors. You may have to take the device back to the sleep center or return it by mail.

Results

Members of the sleep team will score and interpret the information collected through home sleep apnea testing. This may take several days or weeks. The board-certified sleep physician will contact you to discuss the results. If the results are unclear, the physician may recommend an in-lab sleep study.

You may need an additional in-lab sleep study if:

- Your home sleep apnea test did not record enough data for a physician to make a diagnosis
- Your home sleep apnea test results indicate that you do not have obstructive sleep apnea and the physician suspects another sleep disorder

If you are diagnosed with [obstructive sleep apnea](#), the board certified sleep physician will discuss treatment options with you and develop a plan.

In-lab sleep study - Testing Process & Results

Testing Process

When you are ready to go to bed, the sleep technologist will attach sensors to your body. The sensors, which are glued or taped to you, monitor your body while you sleep. These sensors are painless. Make sure to tell the technologist if you are allergic or sensitive to any adhesives. The sensors measure your:

- Brain waves
- Chin muscle activity
- Heart rate
- Breathing
- Oxygen levels
- Leg movements

The wires are long enough to let you move around and turn over in bed. At the start of the test, you will be asked to move your eyes, clench your teeth and move your legs. This will make sure that the sensors are working.

You are free to read or watch TV until your normal bedtime. When it is time for you to try to go to sleep, the lights will go off and a low-light video camera will allow the technologist to see you from a nearby room. If a sensor comes loose or you need to go to the bathroom during the night, the technologist will have to help you with the wires.

Many patients do not sleep as well as they would at home. This may be because of the sensors or the unfamiliar environment. This typically does not affect the results. Nearly everyone falls asleep during an in-lab study. In most cases, you do not need a full eight hours of sleep for the doctor to make a diagnosis. Occasionally, you may be prescribed medication to help you sleep during the in-lab sleep study.

In the morning the technologist will test and then remove the sensors. You may be asked to fill out a morning questionnaire that asks about the quality of your sleep and your experience in the sleep center. The in-lab study is complete once you are awake and the sensors have been removed.

Results

Members of the sleep team will review and evaluate the information gathered during the sleep study. It may take several days to two weeks to properly evaluate your sleep study.

A sleep technologist will first score your sleep study by marking your sleep stages and identifying any events of abnormal breathing or leg movement. The board-certified sleep physician will then review the results to determine what kind of sleep problem you may have. After the board-certified sleep physician makes his diagnosis, he or she will contact you to discuss the results.

CPAP Titration Study - Overview

A CPAP titration study is a type of in-lab sleep study used to calibrate continuous positive airway pressure (CPAP) therapy. CPAP is a common treatment used to manage sleep-related breathing disorders including **obstructive sleep apnea**, central sleep apnea and hypoventilation and hypoxemia. Once you are diagnosed with one of these disorders, you may need a CPAP study before you can begin treatment.

In some cases, members of the sleep team may perform a CPAP titration study on the same night as an in-lab sleep study. This is known as a split-night sleep study. The CPAP titration occurs in the second half of the night. This is usually only offered if the sleep apnea is severe and the diagnosis is clear.

In more mild cases, the CPAP titration study may occur after a physician reviews the results of the in-lab sleep study. The physician will decide if and when you need to come in for a CPAP study.

CPAP Titration Study - Testing

During a CPAP titration study, members of the sleep team will calibrate your **CPAP**. The goal is to find the right amount of air pressure to prevent your upper airway from becoming blocked. This eliminates breathing pauses in your sleep.

When you show up for the study in the early evening, you will be fitted with a nasal mask that is connected by a tube to a small electric unit. The fitting process is an important first step in the PAP titration. Be sure to tell the technologist if the mask is uncomfortable or if there are air leaks around the edges of the mask. The electric unit has a fan that blows air through the tube, into your mask. When you wear the mask, the air will gently blow into the back of your throat.

You will have some time to make yourself at home. There will not be any other patients in your room. You will have a bathroom available to use, and you may have a television that you can watch.

When you are ready to go to sleep, tell the sleep technologist. The technologist will attach sensors to your body to monitor your sleep in just the same way as in the in-lab sleep study. These sensors measure your brain waves, heart rate, breathing, oxygen levels and leg and arm movements. The wires are long enough to let you move around and turn over in bed. You will be asked to move your eyes, clench your teeth and move your legs. This will make sure that the sensors are working.

At certain intervals throughout the night, the technologist will remotely change the air pressure you receive through your mask. Pressure starts at a very low level and gradually increases. If problems are detected, the technologist may come into the bedroom to adjust or replace the CPAP mask. Tell the technologist if you are experiencing any discomfort with the CPAP treatment.

In the morning the technologist will test and then remove the sensors. The CPAP titration study is complete once you are awake and the sensors have been removed. You are free to leave and return to your normal activities.

CPAP - Benefits

Health Risk Prevention

CPAP can prevent or reverse serious consequences of [obstructive sleep apnea](#). The treatment can help protect you from these serious health risks:

Heart Disease

By treating your sleep apnea, you can reduce your risk of heart disease. Sleep apnea is linked to a variety of heart problems because it causes you to stop breathing many times each night. These breathing pauses cause changes in your blood pressure and can reduce your blood oxygen levels. This puts an enormous strain on your heart.

People with untreated sleep apnea have a higher rate of death from heart disease than those without sleep apnea or with treated sleep apnea. Using CPAP therapy over an extended period of time can protect you from heart problems and reduce your chance of dying from them. These heart problems include:

- Congestive heart failure
- Coronary artery disease
- Irregular heartbeat

Stroke

If you have sleep apnea, consistent CPAP use can reduce your risk of stroke, one of the leading causes of death and long-term disability. A stroke is a sudden loss in brain function. It occurs when there is a blockage or rupture in one of the blood vessels leading to the brain. People with untreated sleep apnea are two to four times more likely to have a stroke.

Diabetes

Using CPAP to treat your sleep apnea can improve insulin sensitivity. Sleep apnea is related to glucose intolerance and insulin resistance, both factors in type 2 diabetes. Untreated sleep apnea increases your risk of getting type 2 diabetes.

Motor Vehicle Accidents

CPAP can help you become a safer driver by reducing your daytime sleepiness. Untreated sleep apnea makes you more likely to be involved in a deadly crash. Many people with sleep apnea have a hard time staying awake and concentrating while driving.

Benefits to Your Health and Well-Being

Using CPAP to treat your sleep apnea can improve your life and make each day better. It can help improve your:

Daytime Alertness

Sleepiness and daytime fatigue are common symptoms of sleep apnea. CPAP can restore your normal sleep pattern and increase your total sleep time by eliminating breathing pauses in your sleep. This will help you wake up feeling more refreshed and boost your energy throughout the day.

Concentration

Untreated, severe sleep apnea can damage your brain tissue. As a result you may have trouble concentrating. You also may suffer from memory loss. Using CPAP may improve your ability to think, concentrate and make decisions. This also can improve your productivity and decrease your chance of making a costly mistake at work.

Emotional Stability

Untreated sleep apnea increases your risk of depression. CPAP can help improve your mood, reduce your risk of depression and improve your overall quality of life.

Snoring

By keeping your airway open as you sleep, CPAP reduces or eliminates the sound of your snoring. While you may not notice, your bed partner will benefit from a quieter sleep environment.

Medical Expenses

By improving your health, CPAP therapy can reduce your medical expenses. Sleep apnea can lead to more health problems and more doctors' visits. Treatment for serious health risks linked to sleep apnea such as heart disease, stroke and diabetes can be costly. Medical expenses will decrease when you use CPAP to treat your sleep apnea.

This information has been provided by:



The American Alliance for Healthy Sleep (AAHS) is a patient-focused membership organization. It provides support services and advocacy for patients with all sleep disorders. The AAHS helps to improve the lives of patients with sleep disorders. Its work is powered by collaboration between patients and health care providers. The AAHS was established in 2017 by the American Academy of Sleep Medicine.