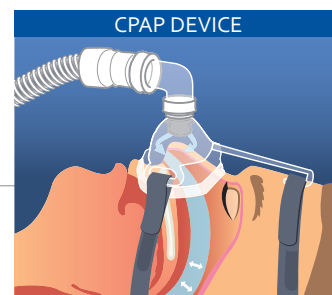
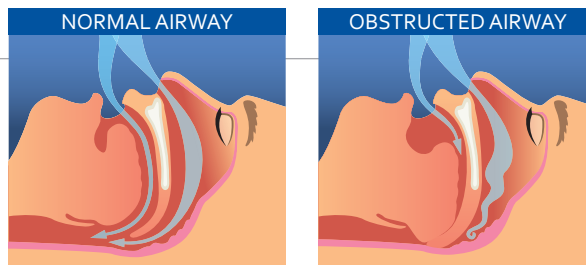


What Is Obstructive Sleep Apnea in Adults?

Obstructive sleep apnea (OSA) is a common problem that affects a person's breathing during sleep. A person with OSA has times during sleep in which air cannot flow normally into the lungs. The block in airflow (obstruction) is usually caused by the collapse of the soft tissues in the back of the throat (upper airway) and tongue during sleep.



Apnea means not breathing. In OSA, you may stop breathing for short periods of time. Even when you are trying to breathe, there may be little or no airflow into the lungs. These pauses in airflow (obstructive apneas) can occur off and on during sleep, and cause you to wake up from a sound sleep. Frequent apneas can cause many problems. With time, if not treated, serious health problems may develop.

OSA is more common in men, women after menopause and people who are over the age of 65. OSA can also occur in children. Also see ATS Patient Information Series fact sheet on OSA in Children. People who are at higher risk of developing sleep apnea include those with:

- enlarged tonsils and/or adenoids
- a family history of OSA
- excessive weight—obesity
- jaw problems such as micrognathia (small jaw) or retrognathia (a pulled back jaw)

What are the symptoms of obstructive sleep apnea?

There are many clues that can make one suspect that you may have OSA. You may not be aware that you have OSA, but these symptoms may be more obvious to a spouse, other family member, or close friend.

Common symptoms you may have during sleep:

- Snoring that is usually loud and bothers other people trying to sleep near you. Snoring can come and go through the night.

- Gasping or choking sounds.
- Breathing pauses observed by someone watching you sleep.
- Sudden or jerky body movements.
- Restless tossing and turning.
- Frequent awakenings from sleep.

Common symptoms you may have while awake:

- Wake up feeling like you have not had enough sleep, even after sleeping many hours.
- Morning headache.
- Dry or sore throat in the morning from breathing through your mouth during sleep.
- Sleepiness during the day.
- Fatigue or tiredness through the day.
- Personality changes, such as mood swings and difficulty getting along with others.
- Problems with poor memory or inability to concentrate.

Can OSA be dangerous?

Lack of sleep can cause you to fall asleep while driving and result in car accidents. OSA can, with time, cause high blood pressure (hypertension), heart disease, stroke, diabetes mellitus, or early death.

How do I know I have OSA?

If you have symptoms of OSA, you need to talk with your healthcare provider. Your healthcare provider can help

you decide if you need a sleep study and whether you should be evaluated further at a sleep center.

OSA is diagnosed by a sleep study (polysomnogram). A sleep study is often done at a sleep center where you will be scheduled to test sleep overnight. Alternatively, a home sleep apnea test may also be used to diagnose OSA. During a sleep study, your breathing, heart rate, and oxygen levels will be monitored. Also see ATS Patient Information Series fact sheet on Sleep Studies.

How is obstructive sleep apnea treated?

Sleep apnea can be effectively treated, and there are a number of ways to do so. The choice of treatment will depend on the reason for and severity of the sleep apnea. If your OSA is from being overweight, weight loss may cause the apnea to go away completely. Additional information about weight loss and OSA will be available soon at www.thoracic.org/patients. As alcohol can suppress breathing and make OSA worse, avoid alcohol for at least 4 hours before going to bed. Sleep apnea is often worse when a person sleeps on his or her back. If you sleep on your back, you can use a pillow or some other strategy to force yourself to sleep on your side. Some people sew a tennis ball into their pajama bottoms to remind them not to turn on their back.

Continuous Positive Airway Pressure (CPAP) is a device commonly ordered to treat OSA. CPAP is a machine that works like a compressor to blow air into a mask that is worn snugly over the nose and/or mouth or in the nostrils (nasal pillows) during sleep. The flow of air acts like a splint to keep the upper airway from collapsing. This helps prevent obstruction and the apnea from occurring. The air pressure is adjusted to a setting that best controls the apnea. Often a person will also notice much less snoring when wearing CPAP. Also see ATS Patient Information Series fact sheet on CPAP in OSA.

There are other devices that can work for some people. For some, a surgery can be done to treat OSA. The type of device or surgery will depend on what has caused the apnea. Some oral appliances or devices that are worn in the mouth during sleep may keep your airway open. Most oral devices work by either bringing the jaw forward or keeping the tongue from blocking the throat. Oral appliances are most likely to help a person who has mild sleep apnea and who is not overweight. These devices are usually custom-made and fitted under the supervision of a specialized dentist or oral surgeon who works with these problems. Also see ATS Patient Information Series fact sheet on Oral Appliances for OSA.

When the tonsils or adenoids are causing the throat to be blocked, surgery can be done to take out the tonsils (tonsillectomy) and/or adenoids (adenoidectomy). Surgery may also be helpful for people with jaw problems. Other surgeries for OSA either clear out tissue from the back of the throat, reposition the tongue forward, or implant a nerve stimulator to cause the tongue to move forward during sleep. These surgeries are not, however, as effective as CPAP to control OSA and are usually reserved for people who fail CPAP.

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Rx Action Steps

- ✓ Talk with your healthcare provider if you have symptoms of obstructive sleep apnea
- ✓ Ask people who are around you when you sleep if they have heard loud snoring or have seen you have apnea spells
- ✓ Ask your healthcare provider if you need a sleep study
- ✓ Exercise regularly and work to lose weight if you are overweight
- ✓ Avoid alcohol, particularly just prior to sleep

Doctor's Office Telephone:

For More Information:

American Thoracic Society

- www.thoracic.org/patients/
 - OSA in Children
 - Sleep Studies
 - CPAP in OSA
 - Oral Appliances
 - PAP Troubleshooting

American Academy of Sleep Medicine

<https://sleepfoundation.org/sleep-disorders-problems/sleep-apnea>

American Sleep Apnea Association

<https://www.sleepapnea.org/learn/sleep-apnea/obstructive-sleep-apnea/>

National Heart Lung and Blood Institute

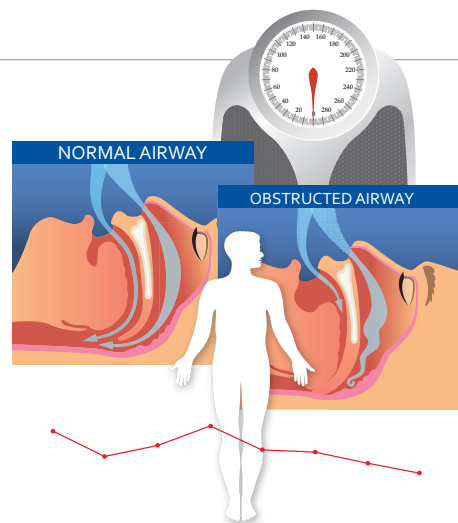
<http://www.nhlbi.nih.gov/health/health-topics/topics/sleepapnea/>

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Weight Loss and Sleep Apnea

Obstructive sleep apnea (OSA) is a common problem that affects a person's breathing during sleep. A person with OSA has times when air flow to the lungs is blocked due to the collapse of the soft tissues in the air passages during sleep. Treatment of OSA depends on what is causing it. If you have problems with OSA from being obese or overweight, weight loss can be an option to help manage your OSA. Losing as little as 5-10% of your body weight can improve or resolve OSA. This fact sheet discusses how managing your weight could help treat OSA. (For more information about OSA and other treatments go to the ATS Patient Information Series at www.thoracic.org/patients.)



What type of program can help me lose weight?

Research shows that people lose the most weight if they take part in a complete lifestyle intervention program that has all of the following: 1) a restricted calorie diet, 2) increased physical activity and 3) behavioral therapy. Behavioral therapy involves working with a weight loss specialist to learn how to track your calories, activity levels and weight, as well as identifying your specific weight loss challenges and strategies to overcome them.

A number of effective (hospital or clinic-based) commercial weight loss and behavioral therapy programs are available. A weight loss program that offers you frequent visits with a weight loss specialist (such as a counselor) and provides long-term follow-up is associated with the greatest success. To further increase your chances of success, choose a program that best matches your preferences and lifestyle. For example, some people may prefer a "self-directed" weight loss program or an online program that includes the three components noted above.

Talk to your healthcare provider before you plan to start any weight loss program. This is especially true if you have a chronic disease, such as diabetes mellitus, heart disease, or are considering a very aggressive or extreme weight loss program.

What type of diet should I follow to lose weight?

Decreasing your calorie intake while maintaining a nutritious, well-balanced diet can help you lose weight. In general, total calorie intake should be limited to 1200-1500 kcal per day for women and 1500-1800 kcal per day for men. You will need to continue for at least 6 months in order to lose weight safely. Choose the type of diet plan that you think you would be most likely to follow. Studies show that weight loss occurs because

of the calorie restriction, not because of the particular type of diet or program offered. Your weight loss specialist can teach you how to count and track your calorie intake. There are also computer programs and cell phone apps that you can use.

Tracking your food intake (food diary) for 2 weeks can give you clues as to changes you may need to make. Your food diary should include all meals, snacks and beverages that you eat/drink, as well as the type of food, total calories for each, time you ate, and why you ate.

Review your food diary with a dietician or other weight loss specialist to get advice for how best to change your diet.

Common diet goals:

- Set a healthy weight loss goal of 1-2 pounds per week.
- Eat least three meals per day. Eating frequent smaller meals has not been proven to cause more rapid weight loss. Do not skip meals.

Common dietary mistakes include:

- skipping meals
- underestimating your daily calorie intake
- eating a lot of refined, processed, and/or sugary foods
- not eating enough fresh fruits, vegetables, protein and/or fiber
- not drinking enough water to stay well hydrated
- drinking alcohol, fruit juices or sugary soda
- frequent snacking between meals
- adding high calorie condiments, dressings, and/or sauces to your food

General strategies to promote healthy eating:

- Control your portions. Portion control is an important factor in controlling your calories. Read food labels to better understand portion sizes and calories. Some people also find eating from smaller plates or bowls to be helpful.
- Plan ahead. Cooking your own meals allows you to control the number of ingredients and avoid hidden calories. Plan snacks ahead of time so you will not be caught hungry without a healthy option.
- Drink water to keep hydrated. Limit caloric beverages, such as juices, sodas, shakes, and alcohol.
- Avoid late evening meals. Eating late at night may contribute to weight gain, possibly due to the body's lower metabolic rate at night.
- Avoid distractions, such as watching TV, during meals. This can lead to overeating.
- Choose meals that are high in fiber, complex carbohydrates, and are low in sugar. Complex carbohydrates such as brown rice, quinoa, whole grains, sweet potatoes, and oatmeal are healthier options than processed, simple carbohydrates such as white bread, cereals, crackers, white potatoes, and white rice.
- Strive to make every meal and snack well balanced, with protein, fat, and carbohydrates.
- Limit high fat foods. Choose grilled or baked foods over fried foods, "clear", low calorie dressings (vinaigrette) over creamy, high calorie dressings (ranch) and clear broth-based soups instead of creamy thick soups.

Address any special dietary concerns due to diabetes, high blood pressure, food allergies, etc. as part of your overall healthy eating plan.

After you lose the weight, you will want to follow up with a program to maintain your new healthier state and have a repeat sleep study to see how much improvement you have in your OSA.

Physical Activity and Exercise

Increasing your levels of everyday physical activity and exercise are positive goals for everyone. Exercise can help you maintain a healthy weight and benefit your health in many other ways. However, exercise must be combined with a healthy diet to achieve weight loss. Studies have shown that in people with OSA, exercise alone results in little to no improvement in weight or OSA severity.

Here are some ways to increase your day-to-day activity:

- take the stairs instead of the elevator
- park at the end of parking lots to encourage more walking
- carry your grocery bags
- take breaks from sitting at your desk and stand or walk throughout the day
- get an exercise buddy! You can keep each other going and enjoy the time together.

Ask your healthcare provider about exercises that are safe for you. Walking is generally a safe and effective exercise for most people. Walking 30 minutes a day, 5 days a week can improve

high blood pressure, help reduce stress, and possibly improve sleep quality.

Additional weight loss measures

For some people who are very overweight, a healthcare provider may recommend adding a weight loss medication and/or weight loss surgery. These may be considered for a person who has failed to lose weight despite carefully following a good weight loss program.

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Rx Action Steps

Adopt and stick to a healthy diet and regular exercise to lose excess weight and improve your health and OSA.

- ✓ Ask your healthcare provider how you can get started.
- ✓ Select a weight loss program that includes a weight loss specialist or counselor who can offer advice and support with frequent meetings over time.
- ✓ Increase your levels of physical activity and exercise.
- ✓ Maintain a positive attitude. You have the power to eat healthfully, lose weight, and feel better. Change is possible!
- ✓ Work with your healthcare provider to treat OSA and decide when to repeat a sleep study when you lose weight.

Healthcare Provider's Contact Number:

Online Resources for Weight Loss

American Thoracic Society

- <https://www.thoracic.org/patients>
- <https://www.thoracic.org/statements/resources/sleep-medicine/weight-mgmt-in-osa-treatment-exec-summ.pdf>

National Heart, Lung, and Brain Institute

- <https://www.nhlbi.nih.gov>

American Heart Association

- <https://www.heart.org>

Academy of Nutrition and Dietetics

- www.eatright.org

American Diabetes Association

- www.diabetes.org

American Society for Metabolic and Bariatric Weight Loss

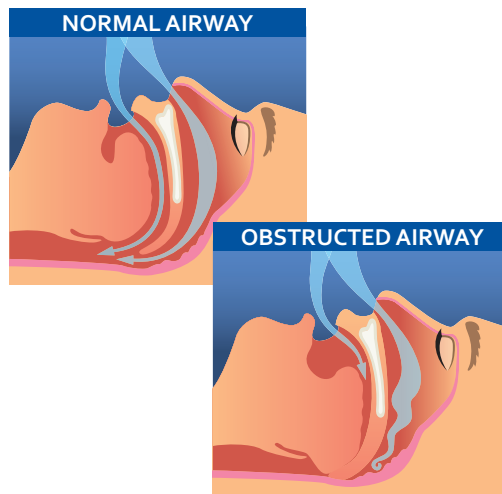
- <https://asmbs.org/>

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Obstructive Sleep Apnea and Heart Disease

Obstructive sleep apnea (OSA) is a condition in which you stop breathing during sleep because of a narrowed or closed breathing passage (airway). For people who have OSA and heart disease, heart problems can get worse if OSA is not recognized and treated. Untreated OSA can also put a dangerous strain on your heart and blood vessels (cardiovascular system). Common symptoms of obstructive sleep apnea include snoring, stopping breathing during sleep, frequent awakenings during the night and difficulty staying asleep throughout the night.



It is also common for people who have obstructive sleep apnea to be tired and sleepy during the day. This sleepiness can cause accidents at work, poor work performance, and car crashes. Obstructive sleep apnea can also have bad effects on your heart and your blood vessels (arteries, veins and capillaries).

What kinds of cardiovascular problems can I get with obstructive sleep apnea?

Several cardiovascular conditions can happen with untreated obstructive sleep apnea. For example, if you have obstructive sleep apnea, you are more likely to have high blood pressure (hypertension) or it may be difficult to control your high blood pressure. Of all people with hypertension, about 30% have obstructive sleep apnea. If you have obstructive sleep apnea, there is a 50% chance you also have hypertension.

Problems with the rhythm of your heart may occur with OSA such as atrial fibrillation (a type of irregular heart beat) and bradycardia (slow heart rate). People with severe obstructive sleep apnea are four times more likely to have atrial fibrillation compared to those without OSA. Not receiving treatment for your sleep apnea may make your atrial fibrillation difficult to control. For example,

in people who have atrial fibrillation treated with catheter ablation (a special procedure done to the heart), those with untreated obstructive sleep apnea are 25% more likely to have their atrial fibrillation return.

People with obstructive sleep apnea are also more likely to have coronary artery disease. Coronary artery disease (also known as the hardening of the arteries) happens when the small blood vessels that supply blood and oxygen to your heart become narrow. Narrowed coronary arteries can lead to heart attacks and heart damage. If you have severe OSA that is untreated, you are twice as likely to develop a heart attack in the future as those without OSA. In addition, research shows that up to 70% of people admitted to the hospital because of coronary artery disease were found to have obstructive sleep apnea. If you have heart failure, obstructive sleep apnea can also make it worse. Also, people with untreated obstructive sleep apnea can develop heart failure. In addition, the chance of having obstructive sleep apnea if you have heart failure is quite high.

How does obstructive sleep apnea cause heart disease?

The reason why people with obstructive sleep apnea develop heart disease is not exactly known. Obstructive sleep apnea causes you to have frequent pauses in your breathing; these pauses mean that you actually stop breathing. Sometimes this will cause you to wake up at night but you may not be aware of them. When these breathing pauses happen, the oxygen level in your blood gets low. It is thought that the frequent drops in low oxygen levels during sleep damages the blood vessels that supply the heart. Also each time the oxygen level drops, your body tells your heart to beat faster and your blood pressure to go up. Stress on the heart from severe OSA can also cause the heart to get enlarged. An enlarged heart does not pump as well and the heart and body gets even less oxygen.

Will treating my obstructive sleep apnea treat my heart disease?

Yes, treating OSA can help prevent and/or improve heart problems. The most common way of treating obstructive sleep apnea is with a mechanical device known as continuous positive airway pressure (CPAP). The CPAP machine blows air through a hose into a mask worn snugly over your nose or mouth. This air helps keep your airway from closing during sleep. This corrects your sleep apnea, prevents your blood oxygen levels from falling during sleep, and allows you to get a more restful sleep. Using CPAP regularly at night as prescribed by your healthcare provider also helps lower the stress on your heart. If you have atrial fibrillation, CPAP use may control your irregular heartbeat. If you have both severe sleep apnea and hypertension, CPAP may help control your blood pressure.

People can become comfortable with wearing the CPAP device over time. Those who wear CPAP at night often say that they are getting the best sleep that they have gotten in a long time. Some people though may have trouble getting used to sleeping with the CPAP device. If you are having difficulty, speak with a sleep specialist to be sure you have the right nasal or full-face mask and the right setting for you. There are very good reasons to try

and use the CPAP every night. CPAP therapy can help you control the symptoms of your sleep apnea and prevent or control the heart-related problems associated with sleep apnea, which are often severe and life limiting.

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Rx Action Steps

- ✓ If you have a cardiovascular disease such as heart failure, irregular heartbeats and/or hypertension and have trouble breathing at night (or your bed partner tells you that you snore, gasp or stop breathing at night), speak with your healthcare provider about referring you for a sleep study.
- ✓ If you have been given a CPAP machine for sleep apnea, use it every night.
- ✓ If you are having difficulty sleeping because of the CPAP machine, speak to the sleep specialist for help; don't just stop using the machine.

Healthcare Provider's Contact Number:

References:

American Thoracic Society
www.thoracic.org/patients

- CPAP
- OSA
- PAP Troubleshooting

American Heart Association

- http://www.heart.org/HEARTORG/Conditions/More/MyHeartandStrokeNews/Sleep-Apnea-and-Heart-Disease-Stroke_UCM_441857_Article.jsp

Harvard Healthy Sleep

- <http://healthysleep.med.harvard.edu/railroad-sleep/problems/apnea>

Sleep Foundation

- <https://sleepfoundation.org/ask-the-expert/sleep-apnea-and-heart-disease>

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