



Effective Health Care Program

Treating Sleep Apnea

A Review of the Research for Adults



Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Is This Information Right for Me?

Yes, if:

- A doctor said you have mild, moderate, or severe “obstructive sleep apnea,” or OSA. People with OSA may snore and stop (or “pause”) their breathing a few or many times when they sleep.
- You are looking for ways to treat your sleep apnea and want to know what research says about your options.
- You are an adult. This guide does not cover treatment for children.

No, if:

- Your doctor said you have “central sleep apnea,” which is a different condition and needs different kinds of treatments.
- You snore loudly, but have been told by a doctor that you do not have OSA. Not everyone who snores has OSA.

There are several ways that health care providers can tell if you have OSA. If you think you have this condition, talk to your doctor.

Where does the information come from?

An independent research team funded by the Agency for Healthcare Research and Quality (AHRQ) reviewed the current research on treatments for sleep apnea. Clinicians, researchers, experts, and the public reviewed this report. You can read the report at www.effectivehealthcare.ahrq.gov/apnea.cfm.

Understanding Your Condition

What is sleep apnea?

Obstructive sleep apnea (pronounced AP-nee-ah), also called OSA, is a chronic (ongoing) disorder. People with OSA stop or “pause” their breathing or have shallow breathing when they sleep.

Almost everyone has brief times when they stop breathing while they sleep. People with OSA:

- Pause their breathing or flow of air (called “hypoapnea”) more often than normal.
- May start breathing again with a loud snort or choking sound.
- Have breathing pauses five or more times an hour; sometimes as often as once or twice each minute.

OSA can be mild, moderate, or severe, depending on:

- How many times a person pauses their breathing or has lower airflow per hour.
- How low a person’s oxygen level in their blood drops during those times.
- The amount of sleepiness a person feels during the day.



Understanding Your Condition

How common is OSA?

- Sleep apnea is very common, affecting people of all ages.
- Middle-aged and elderly people and people who are obese (very overweight) are more likely to have this condition.
- 12 million Americans have OSA, according to the National Institutes of Health. Many more people may have sleep apnea and do not know it because they have not been tested.

How serious is OSA?

Untreated OSA may:

- Cause poor sleep quality, leading to daytime sleepiness.
- Increase the risk of work-related or driving accidents due to sleepiness.
- Increase the risk of serious health problems, including diabetes and even death.





How does my doctor know if I have OSA?

- Your doctor may ask you questions about whether you have symptoms of OSA.
- Your doctor or health care provider may ask you to do a “sleep study.” This is an overnight stay at a special clinic where trained professionals watch your breathing, heart rate, and other vital signs while you sleep.
- Your doctor may use a home monitor to check how often you pause or stop breathing or have less airflow when you sleep.
 - Some research found that home monitors can tell doctors if someone has OSA, though not as well as overnight sleep studies in a special clinic.
- If you have moderate or severe sleep apnea, your doctor may refer you to a Sleep Medicine Specialist. This person may be a “pulmonologist” (pronounced pul-man-OL-o-jest), an internist, or an Ear, Nose, and Throat (ENT) doctor.

What are my options for treatment?

Continuous positive airway pressure machine (CPAP)

- A CPAP machine pushes a stream of air through a mask you wear when you sleep. The air flows through the mask into your nose or mouth to keep your throat and airway open.
- There are many kinds of CPAP machines and masks. Some masks fit over your nose, and others cover both your nose and mouth.
- CPAP is the most common and most researched treatment for OSA. It is usually the first treatment that a doctor will suggest for OSA.

Mandibular advancement device (MAD)

- A MAD is a mouthpiece you wear when sleeping.
- There are many types of MADs. Most are made of hard plastic that covers your upper and lower teeth. Some devices also hold your tongue in place.
- The mouthpiece keeps your jaw forward and your airway open.
- These devices are sold and fitted by a dentist, or an orthodontist, who makes a mold of your mouth.



You may see ads for mouthpieces that you can buy directly and that do not need fitting. These ads may say that they help stop snoring or even apnea. They are not the same as the MADs studied by researchers. Always check with your doctor or dentist before ordering a mouthpiece.

How do these two options compare to one another?

Some studies have found that:

- Both CPAP and MAD reduce daytime sleepiness and lower the number of times you pause or stop breathing while you sleep.
- CPAP is better than MAD in lowering the number of breathing pauses to less than five per hour, which is normal.
- Both CPAP and MAD have some side effects.
 - CPAP: Feeling trapped, dry nose and mouth, nosebleeds, sore gums or lips, chest discomfort and skin or nose irritation are the most common.
 - MAD: Loose or damaged teeth and jaw pain. Many people who use a MAD have to do jaw stretches in the morning or see a dentist regularly to check for teeth problems.

How long will I need to use either of these treatments?

- Both treatments need to be used every time you sleep to be effective.
- Most people will need to use a CPAP or a MAD for their entire lives.

Can losing weight help my OSA?

- Some obese (very overweight) people have reduced or cured their OSA by losing weight.
- Some studies found that weight-loss programs are an effective treatment for OSA in people who are overweight.

Are there other treatment options?

- Surgery.
 - Some people with OSA may have one or more surgeries to remove tissue from the back of the throat. This makes the airway wider.
 - Some people with severe OSA who are overweight have surgery to limit the amount of food that can be taken into the stomach. This is called “bariatric” (bear-ee -AT-rik) surgery. This helps people lose weight.
 - All surgeries come with risks, including bleeding and infection, nerve damage, and even death.
 - There may be difficulty swallowing, change in speech or voice, or narrowing of your airway after the surgery.

There is not enough research to compare surgery to the other treatments for sleep apnea. Researchers believe that surgery can improve sleep apnea, but they do not know how well and who might benefit from it most.

There are many other treatments and products you may hear about that say they can stop snoring or sleep apnea. There is not enough research to know if or how well these work.

Unlike other health conditions, different kinds of doctors, including dentists, offer treatments for OSA. Each kind of doctor may offer a different option. Be sure to ask each doctor to explain about all your options.

What should I think about?

There are several things to consider when deciding on how to treat your OSA:

- The benefits and risks of each treatment option.
- The cost of each treatment option.
- Which treatment best fits your likes, dislikes, and values.
- Which treatment you are most likely to use every night.



What are the costs of treatment?

The cost to you for each treatment option depends on the type of health insurance that you have.

CPAP

- CPAP machines and supplies are considered “durable medical equipment,” which may be covered differently than medicines or other medical services. Ask your health plan administrator how much your health insurance will pay for the CPAP equipment.
- Some health plans require that you use a specific type or brand of CPAP machine and mask. Other plans will let you choose from among several brands.
- Some CPAP machines come with humidifiers, which make them cost more. Some people find that humidifiers lower side effects and make the CPAP more comfortable.
- The retail cost (before insurance payment) for most CPAP machines is between \$300 and \$2,000.
- The average cost of CPAP supplies (mask, tubes and filters) is between \$300 and \$800 per year.

MAD

- Your health plan may also cover MADs as “durable medical equipment.”
- Some health plans may not cover these devices, and other plans may cover these devices under your dental plan. Check with your health plan administrator.
- MADs may need to be adjusted or replaced. This may cost more.
- Using a MAD may require that you visit a dentist more often to check for teeth and jaw problems.
- The retail cost (before insurance payment) for a MAD is between \$300 and \$2,500.
- The Internet advertises mouthpieces for snoring and sleep apnea that are less expensive, but these may not help your sleep apnea. Talk to your doctor before using these devices or mouthpieces.

Source

The information in this summary comes from the report *Diagnosis and Treatment of Obstructive Sleep Apnea in Adults*. The report was produced by the Tufts Evidence-based Practice Center through funding by the Agency for Healthcare Research and Quality (AHRQ). For a copy of the report, or for more information about AHRQ and the Effective Health Care Program, go to <http://www.effectivehealthcare.ahrq.gov/apnea.cfm>. Additional information came from MedlinePlus, a service of the National Library of Medicine and the National Institutes of Health. This service is available at www.nlm.nih.gov/medlineplus/.

This summary was prepared by the John M. Eisenberg Center for Clinical Decisions and Communications Science at Baylor College of Medicine, Houston, TX. Adults with sleep apnea reviewed this guide.

