Learn About Obstructive Sleep Apnea (OSA)

Obstructive sleep apnea (OSA) is a disease during sleep in which the breathing stops and starts. This is due to repeated collapse (blockage) of the airway when the throat muscles relax during sleep. It frequently causes snoring and choking/gasping for air during sleep and results in poor sleep quality and daytime sleepiness.

Key Facts
- OSA is a common condition in the community, and its risk increases with increasing body weight.
- Due to frequent awakenings during sleep, patients usually feel sleepy during the day and may have issues with alertness, memory, concentration, and mood (irritability).
- OSA is thought to be associated with developing or worsening of heart disease and other major medical problems.

What Is OSA?
OSA is a condition characterized by narrowing or closure (obstructions) of your airway during sleep that results in a stoppage of airflow called apneas. This obstruction occurs in the back of the throat, in a structure called the pharynx. These events happen repeatedly throughout the night and, frequently, patients with this disorder are not even aware of them. These repeated awakenings during the night result in very disrupted sleep. Patients often wake up in the morning feeling like they haven’t slept well or that they haven’t slept at all.

Obstructive sleep apnea isn’t the only type of sleep apnea that a person can suffer from, although it is far and away the most common type. Central sleep apnea, the other major type of sleep apnea, occurs when a person’s brain does not tell the body to breathe repeatedly through the night. A sleep study can easily determine which type of sleep apnea is present.

How OSA Affects Your Body
OSA can have many effects on your health and well-being. Because an individual with OSA wakes up frequently during the night, they frequently complain of poor sleep quality and daytime sleepiness. This is because even though someone with OSA may spend the suggested 7 to 9 hours asleep per night, if they are waking up frequently, they may feel as if they haven’t slept at all. In addition, being deprived of normal amounts of sleep due to OSA will result in many next day affects in addition to sleepiness: impaired alertness (daytime fatigue), poor concentration, impaired memory, and mood instability (irritability). In children with OSA, instead of getting sleepy, kids often become hyperactive.

OSA can result in or worsen other chronic health conditions. OSA is associated with high blood pressure, stroke, coronary artery disease, congestive heart failure, cardiac rhythm disturbances, and difficulty controlling blood sugar. Because of this, adequate treatment of OSA, especially severe OSA, is essential.
How Serious Is OSA?
OSA is a common disorder that is increasing in prevalence. In the United States, OSA is thought to be present in approximately 10% to 30% of adults. The most worrisome effects of OSA include impaired functioning at work or while driving and its association with developing heart and vascular disease.

- Motor vehicle accidents are at least twice as likely to occur in people with OSA compared with those without OSA.
- Patients with severe untreated OSA have two to three times the risk of fatal or nonfatal cardiovascular events (such as heart attack and stroke).

If you think you might have sleep apnea, see your doctor. Treatment can ease your symptoms and may help prevent heart problems or other complications from occurring.

OSA Symptoms, Causes, and Risk Factors
Sleep apnea is a condition of repeated interruptions of breathing during sleep that results in poor sleep quality and daytime symptoms. The causes of sleep apnea and conditions that put people at risk for sleep apnea are well established.

What Are Symptoms of OSA?
Different people have different symptoms of sleep apnea. While some people have significant manifestations of the disorder, others have minimal symptoms. This is why a sleep study is needed to diagnose sleep apnea.

Common Symptoms of OSA
- Snoring: snoring is a very common symptom of sleep apnea. Most people with sleep apnea snore, although not everyone who snores has sleep apnea.
- Daytime sleepiness: because sleep apnea results in poor sleep quality, people with sleep apnea are often very sleepy during the day and may doze off or take daytime naps. Car accidents may also occur in patients with sleep apnea due to falling asleep at the wheel.
- Pauses in breathing followed by abrupt awakenings with snoring, gasping, or choking: this symptom may be observed by the bed partner.
- Difficulties with memory and concentration
- Changes in mood or irritability
- Frequent urination at night
- Morning headaches and dry mouth

What Causes OSA?
Sleep apnea results from the collapse of the back of the throat (the pharynx) during sleep. Because the pharynx has no supporting structures (bone or cartilage) holding it open, it instead relies on muscles to keep the breathing passage open; however, when the muscles relax during sleep, the pharynx collapses on itself, resulting in a decrease or complete absence of air entering and exiting the lungs. In order to unblock the pharynx, a patient with sleep apnea awakens briefly to “flex” the pharynx muscles in order to start breathing again. These events happen repeatedly throughout the night, and, frequently, patients with this disorder are not even aware of them.

Anything that makes the pharynx smaller will result in more sleep apnea. This includes having a big tongue, having big tonsils or adenoids (glands in the pharynx) especially in children, being overweight or obese, and/or having a small chin or other anatomic problems.
What Are Risk Factors?

- Overweight/obesity: It is the most important risk factor for sleep apnea, although even normal weight people can have sleep apnea. Obesity increases a person’s risk for sleep apnea because fatty tissue present in the breathing passage results in a smaller tube through which air can pass, making it easier for the breathing passage to collapse during sleep.

- Gender: men have a two to three times higher risk of sleep apnea compared with premenopausal women. Postmenopausal women have a similar risk for OSA as men.

- Age: adult sleep apnea becomes more frequent as a person ages, starting in young adulthood until the 60s and 70s. After this time, the risk of sleep apnea appears to level off.

- Upper airway (pharynx) crowding: people with small chins, large tongues, or enlarged tonsils and adenoids have a higher risk of developing sleep apnea.

What to See Your Doctor

There are several reasons to be evaluated for sleep apnea.

- Loud, disruptive snoring: your snoring is disrupting your sleep and/or your bed partner or family members complain of loud snoring that is disrupting their sleep.

- Observed pauses in breathing during sleep: your bed partner is concerned that you stop breathing at night

- Daytime sleepiness: you are having difficulty staying awake during the day. This is especially important if your sleepiness is affecting your work or putting you in danger (falling asleep while driving).

- Difficult to control medical problems: often, patients with sleep apnea have a more difficult time controlling their blood pressure and/or blood sugar. If you have high blood pressure, diabetes, or other medical conditions that are not well-controlled, it might be due to sleep apnea.

Learn more about diagnosing and treating OSA and what to expect when you see your doctor

Diagnosing and Treating OSA

If you or your partner suspects that you have sleep apnea, you should contact your doctor to discuss further testing and treatment. Often this will include a referral to a sleep specialist.

What to Expect

When you see a sleep specialist, they will perform a thorough history and physical examination. They may ask questions about your family history of sleep problems, as sleep apnea can run in your family. They will carefully review all of the medicines you are currently taking to see how they might affect your sleep. They will go over all of the potential sleep-related complaints and evaluate for crowding in the back of your nose and throat. They will likely ask about details of your sleep and work schedule to determine if you are getting adequate sleep and have good sleep habits. They will also likely assess you for manifestations of other sleep problems by asking questions about how long it takes to fall asleep, whether or not you have movements during your sleep, or sleep walk or sleep talk. If your doctors feel that you have significant risk factors for OSA, they may order a diagnostic test that they feel is most appropriate for you.
How It’s Diagnosed
OSA is formally diagnosed with either an in-laboratory sleep test (polysomnogram [PSG]) or a portable sleep apnea test that can be done at home (out of center testing [OCST]). The most commonly done test is the PSG, which requires an overnight stay at a sleep laboratory. During this test, you are hooked up to equipment that monitors your heart, lung, and brain activity; breathing patterns; arm and leg movements; and oxygen levels while you sleep. If you stop breathing during sleep, you may be diagnosed with sleep apnea. This test can determine the severity of your OSA based on how many times you stop breathing per hour of sleep.

OCST can often be done at home. You will be taught how to put the device on by yourself. These tests typically collect less data than a laboratory sleep test (PSG) and only focus on the information required to see if you stop breathing. OCST can more accurately diagnose severe OSA than milder OSA and may, in fact, miss mild sleep apnea. Therefore, if you have many risk factors and symptoms of OSA and an OCST does not show OSA, you may still need to confirm this with a PSG.

How It’s Treated
The treatment of OSA generally falls into one of four categories below. Regardless of the treatment you choose, a follow-up sleep study to ensure your OSA is treated adequately is recommended.

Continuous Positive Airway Pressure (CPAP)
- CPAP is a machine that gently blows air into the airway to keep it open when breathing during sleep. It uses a mask that can either fit into the nostrils, over the nose and/or mouth. CPAP is highly effective when used and is typically offered as the first line of treatment. CPAP should be used on a nightly basis for optimal treatment.

Oral Appliances (OAs)
- OAs are a treatment option for mild to moderate OSA or if you are intolerant to CPAP. These are dental appliances designed to open your throat by bringing your jaw forward when sleeping.

Surgery
- If intolerant to other treatment options, you might consider surgical options. Surgeries for sleep apnea include reducing the tissue in the back of the throat, pulling the tongue forward, and placement of a nerve stimulator to open the airway when breathing during sleep.

Lifestyle Changes
- Lifestyle changes may be done in combination with the other forms of treatment for sleep apnea.
  - Weight Loss. If you lose weight, it will improve your OSA. Losing just 10% of your body weight can improve your sleep apnea. In some cases, losing a significant amount of weight can even cure the disease.
  - Avoid alcohol and certain medications. Drinking excessive alcohol or taking some pain medicines or sleeping pills before bedtime can worsen OSA.
  - Quit smoking. Cigarette smoking can increase swelling in your airway making snoring and OSA worse.
  - Positional Therapy. Some patients have worse sleep apnea when lying on their back. Avoiding this position when sleeping can help reduce symptoms.

Living With OSA
Living with untreated sleep apnea may lead to hypertension, heart disease, and stroke, as well as other medical disorders. It is important to seek out treatment. It is imperative to use CPAP or oral appliances (OA) every time you sleep. These are considered a treatment for OSA, not a cure, so continued use is needed.
What to Expect

There is often an initial adjustment period when getting used to nightly CPAP use, as sleeping with a mask on is a new experience for most. If you are having persistent difficulty tolerating CPAP, it is important to contact your doctor. Treating OSA typically improves many of the symptoms associated with the disease. While some symptoms, such as snoring, will improve the first night you are on treatment, other symptoms may take longer to fully resolve. Daytime sleepiness and memory recall have greater improvement when CPAP is used for the entire night rather than taking it off part way through the night. These symptoms may continue to improve over several weeks to months of use. Morning headaches, dry mouth, and difficulty waking up in the morning improve once OSA is treated. Patients often feel more alert during the day and are less likely to take naps.

If you have persistent symptoms after being fully treated, you should discuss this with your doctor. Sometimes, this may be due to other sleep or medical disorders, medications, or lack of enough total sleep.

Learn more about managing the disease and finding support »

Managing the Disease

Management of OSA has two components ensuring the treatment is working properly and working on lifestyle modifications.

CPAP supplies need to be kept clean and replaced regularly. Many CPAP machines have the ability to determine how well therapy is working. Seeing a doctor once a year to review the information on your machine can help keep you healthy and ensure everything is working properly. Repeat sleep studies may be needed if there has been a significant change in weight or surgery on your airway. OAs need to be kept clean. If using an OA, it is important to follow with both a sleep specialist, as well as a dentist. These have the potential to cause misalignment of the teeth, so close follow-up is important. If surgery is done to treat OSA, it is important to have a follow-up sleep study to ensure that OSA is resolved. Over time, scar tissue or relaxation of the muscles can cause OSA to return, so discussing sleep symptoms with your doctor each year is important. If symptoms of OSA start to return, a repeat evaluation may be needed.

Ensuring you lead a healthy lifestyle will improve sleep apnea. Being overweight is strongly associated with OSA. Weight loss can improve or even cure sleep apnea. Getting a good night of sleep on a regular basis is also important, as sleep deprivation can worsen sleep apnea. Finally, avoiding tobacco, which can irritate the airway, and avoiding alcohol prior to going to sleep are important lifestyle changes.

Finding Support

Finding support is important with any disorder. Ask your doctor about any local support groups in your area. Educate your family and friends about OSA so that they can better support you. Additional resources can be found below:

National Sleep Foundation
http://sleepfoundation.org/sleep-disorders-problems/sleep-apnea

American Sleep Apnea Association
http://www.sleepapnea.org/info/index
http://www.sleepapnea.org/support.html

UpToDate
Questions to ask your doctor about obstructive sleep apnea (OSA):

In preparation for your appointment with your health-care provider or sleep specialist, we recommend that you write down your questions ahead of time about OSA. These are some questions for you to ask:

- What is the most likely explanation on how I feel and my complaints?
- Other than “obstructive sleep apnea,” are there other explanations about the way I feel?
- What is obstructive sleep apnea?
- Why do I have obstructive sleep apnea?
- Is it temporary or permanent?
- What test do I need to do to confirm obstructive sleep apnea?
- How do I prepare for this test?
- What are my treatment options?
- Which treatment is best for me?
- Are all treatment options equally effective to treat my obstructive sleep apnea?
- What is a “CPAP” machine?
- What is an “oral appliance”?
- What do I have to change in my life to improve my “obstructive sleep apnea”?
- What are the complications and risks if obstructive sleep apnea is not treated?
- How will treatment help me?
- For more information, do you have any printed material or a website address that you could provide?

Please consider asking additional questions during your appointment.

Questions that your doctor may ask you during the appointment:

Your health-care provider or sleep health specialist will ask you questions about your health and medical history, so this information will help you to be ready for your appointment:

- Make a list of your sleep and non-sleep-related complaints.
- Request your spouse, significant other, or closest friend to come along, as they may provide valuable additional information about your sleep.
- Bring a complete list of all prescription, over-the-counter medications, and supplements that you are taking.
- Bring copies of your medical history, including medical records and sleep tests performed at another clinicians’ office. You may ask other doctor’s offices to fax/email/mail this information to your current health-care provider in advance of your visit.
- Be aware of any preappointment requirements. At the time you make the appointment, please ask if there’s a sleep questionnaire or a sleep diary to fill out in advance.

Please consider bringing any other additional medical information or documentation to your appointment.

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