

# Sleep Apnea

It is estimated that more than 12 million individuals in the United States have **sleep apnea**, in which breathing stops for short periods during sleep. Most persons with sleep apnea do not even know they have this serious medical problem. Sleep apnea is more than just snoring, although snoring is one of the signs of sleep apnea. **Obstructive sleep apnea** is caused by intermittent closure of the airway. Much less commonly, **central sleep apnea** can happen when abnormal messages sent from the brain make breathing stop inappropriately. If left undetected and untreated, sleep apnea may cause poor quality of sleep, excessive daytime sleepiness, weight gain, **hypertension** (high blood pressure), heart failure, stroke, and death. **Hypoxemia** (decreased oxygen concentration in the blood) and **hypercapnia** (increased carbon dioxide concentration in the blood) are common in persons who have sleep apnea. Both hypoxemia and hypercapnia are serious problems and can have many ill effects on the organs of the body.

## RISK FACTORS FOR SLEEP APNEA

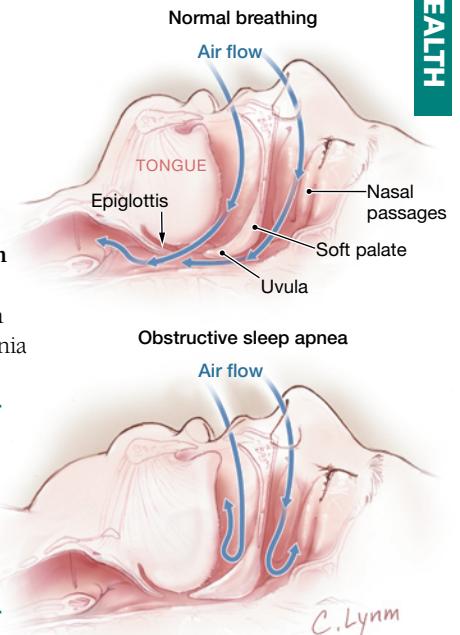
- Obesity
- Airway abnormalities, like large tonsils or a thick neck
- Hypertension
- Alcohol use
- Sleep medication use
- Certain medical conditions, such as **hypothyroidism** (underactive thyroid gland)
- Sleeping on one's back

## DIAGNOSIS

- Severe snoring with breathing stopped for several seconds during sleep is a primary symptom for the diagnosis of sleep apnea.
- Your doctor may also take a medical history and ask about your medications, falling asleep in inappropriate settings (such as while talking or driving), and health-related issues (such as alcohol use and smoking).
- Sleep studies measure the number of apnea episodes and their length during a night's sleep. Other measures during a sleep study include **pulse oximetry** (which examines the amount of oxygen in the blood), heart rate and rhythm, and abnormal eye and leg movements.
- Tests to evaluate heart function and lung function may be ordered by your doctor to look for damage already caused by sleep apnea.

## TREATMENT

- The main treatment for sleep apnea is **continuous positive airway pressure (CPAP)**. A small machine is hooked to a mask that a person wears during sleep. The CPAP mask provides gentle pressure to help keep the airways open and unobstructed.
- Sometimes surgical procedures are recommended to help correct airway anatomy. Tonsillectomy is a common treatment for children who have obstructive sleep apnea.
- If an individual is overweight, weight loss is extremely important in treating sleep apnea. Even a 10% reduction in body weight can be helpful for sleep apnea.
- Oxygen may be prescribed for use at night or for round-the-clock use, but it is not the same as CPAP.
- Individuals with sleep apnea should not smoke, drink alcohol, or use sleep medications (without the advice of a physician knowledgeable in sleep disorders).



## FOR MORE INFORMATION

- American Lung Association  
[www.lungusa.org](http://www.lungusa.org)
- National Heart, Lung, and Blood Institute  
[www.nhlbi.nih.gov](http://www.nhlbi.nih.gov)
- American Sleep Apnea Association  
[www.sleepapnea.org](http://www.sleepapnea.org)

## INFORM YOURSELF

To find this and previous JAMA Patient Pages, go to the Patient Page Index on JAMA's Web site at [www.jama.com](http://www.jama.com). Many are available in English and Spanish. A Patient Page on insomnia was published in the June 28, 2006, issue; one on obesity was published in the April 9, 2003, issue; and one on bariatric surgery was published in the February 10, 2010, issue.

Sources: American Lung Association; National Heart, Lung, and Blood Institute; American Sleep Apnea Association; American Society of Anesthesiologists; American Academy of Sleep Medicine

Janet M. Torpy, MD, Writer

Cassio Lynn, MA, Illustrator

Robert M. Golub, MD, Editor

The JAMA Patient Page is a public service of JAMA. The information and recommendations appearing on this page are appropriate in most instances, but they are not a substitute for medical diagnosis. For specific information concerning your personal medical condition, JAMA suggests that you consult your physician. This page may be photocopied noncommercially by physicians and other health care professionals to share with patients. To purchase bulk reprints, call 312/464-0776.

