

Sleep Apnea

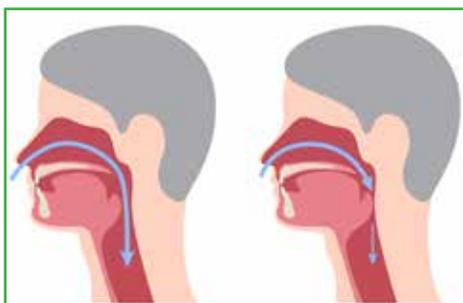
9/11 Exposure and Sleep Apnea

According to a 2014 study, people who were at the site of the World Trade Center disaster were more likely to develop severe sleep apnea.¹ Another study found that people with common 9/11-related health conditions — such as gastroesophageal reflux disease (GERD), chronic rhinosinusitis and post-traumatic stress disorder (PTSD) — were more likely to develop obstructive sleep apnea.²

What Is Sleep Apnea?

When you are awake and breathing, air passes from your nose and mouth into your lungs through your windpipe. When you are asleep, the muscles in this upper airway relax. For people with sleep apnea, this relaxed airway narrows, causing the tissues at the back of your throat to vibrate, making it harder for the air you breathe to reach your lungs. Sometimes, the airway becomes so narrow that the flow of air is reduced (hypopnea) or completely blocked (apnea). This can last 10 to 20 seconds, and in people with severe sleep apnea, it can happen hundreds of times each night.

Forms of Sleep Apnea



Obstructive sleep apnea, the most common form, is when the flow of air through the upper airway is blocked, resulting in loud snoring and disrupted breathing.



Central sleep apnea, which involves the central nervous system, is when the brain fails to signal the muscles that control breathing. Most people with central sleep apnea do not snore.



Complex sleep apnea is a combination of obstructive sleep apnea and central sleep apnea.

Signs and Symptoms



- ▶ Choking, snorting, gasping or long pauses in breathing during sleep
- ▶ Waking up with a dry mouth
- ▶ Insomnia, or restless or fitful sleep
- ▶ Morning headaches
- ▶ Daytime sleepiness, even with a full night's sleep

Risk Factors



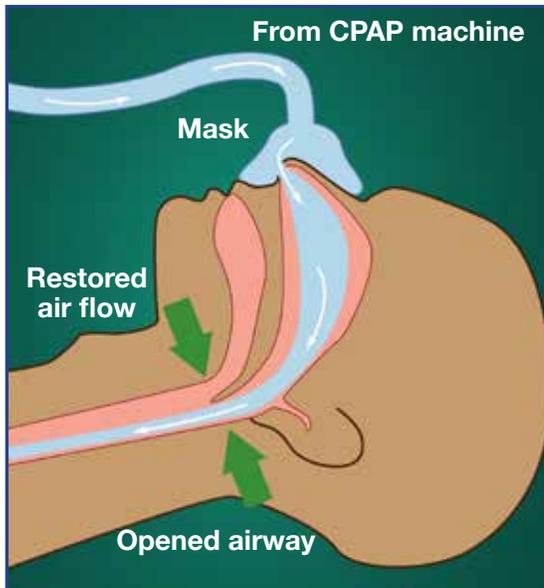
- ▶ Thyroid problems
- ▶ Drinking alcohol, smoking or lack of physical activity leading to excessive weight gain
- ▶ Gastroesophageal reflux disease (GERD)
- ▶ Blockage of the nose or nasal cavity, allergies or other sinus problems

¹Glaser MS, Shah N, Webber MP, Zeig-Owens R, Jaber N, Appel DW, Hall CB, Weakley J, Cohen HW, Shulman L, Kelly K, Prezant D. Obstructive Sleep Apnea and World Trade Center Exposure. *J Occup Environ Med* 2014;56 Suppl 10:S30-4.

²Sunderram J, Udasin I, Kelly-McNeil K, Ko S, Cepeda C, Marraccoli B, Perret C, Ohman-Strickland P, Scardella A, Kipen H. Unique Features of Obstructive Sleep Apnea in World Trade Center Responders with Aerodigestive Disorders. *J Occup Environ Med* 2011;53:975-980.

Continuous Positive Airflow Pressure (CPAP) Machine to Treat Sleep Apnea

People with moderate or severe obstructive sleep apnea can use a CPAP machine to treat their condition. The device provides a constant flow of oxygen to users while they sleep. People with sleep apnea who do not use a CPAP device may stop breathing periodically when sleeping.



CPAP machines have three parts:

1. A small pump that gathers air
2. A tube that the air travels through
3. A mask that delivers the air from the tube to the airway

CPAP Machine Benefits

In the past, CPAP machines were large, bulky and noisy. CPAP machines are now smaller, more portable and quieter than older machines. The benefits of newer CPAP machines include:

Short-term:

- Improved sleep quality
- Reduced snoring
- Less daytime sleepiness

Long-term:

- Reduced risk for stroke
- Improved memory
- Improved control of high blood pressure

At first, some people find using the CPAP machine to be uncomfortable. Talk to your doctor about using a CPAP machine.

Other Treatments for Sleep Apnea



If a CPAP machine does not work for you, talk to your doctor about other treatments for sleep apnea. Examples include:

- ▶ Bilevel Positive Airway Pressure (BiPAP) machine: This is similar to the CPAP machine, but provides one amount of air pressure for inhaling and another for exhaling.
- ▶ Automatic Positive Airway Pressure (APAP) machine: This is similar to the CPAP machine, but provides various air pressures.
- ▶ Oral appliance: This mouthguard-like device is customized for patients by sleep apnea dentists. It helps to widen your airway as you sleep.
- ▶ Oral surgery: This can help reduce some of the breathing obstructions caused by a person's soft palate, tongue or airway. Other procedures can help expand areas that have become narrower over time.

For more information about sleep apnea, visit nyc.gov/health or nhlbi.nih.gov and search for **sleep apnea**.

Help for 9/11-Related Sleep Apnea

The World Trade Center Health Program (WTCHP), a federal program for 9/11-related health conditions, provides treatment for both obstructive sleep apnea and complex sleep apnea, but not central sleep apnea. For more information about the WTCHP, visit cdc.gov/wtc.