

Overview of Central Sleep Apnea

Central sleep apnea is a disorder in which your breathing repeatedly stops and starts during sleep.

Central sleep apnea occurs because your brain doesn't send proper signals to the muscles that control your breathing. This condition is different from obstructive sleep apnea, in which you can't breathe normally because of upper airway obstruction.

Central sleep apnea is less common than obstructive sleep apnea.

Central sleep apnea may occur as a result of other conditions, such as heart failure and stroke. Sleeping at a high altitude also may cause central sleep apnea.

Common signs and symptoms of central sleep apnea include:

- Observed episodes of stopped breathing or abnormal breathing patterns during sleep
- Abrupt awakenings accompanied by shortness of breath
- Shortness of breath that's relieved by sitting up
- Difficulty staying asleep (insomnia)
- Excessive daytime sleepiness (hypersomnia)
- Difficulty concentrating
- Mood changes
- Morning headaches
- Snoring

Although snoring indicates some degree of increased obstruction to airflow, snoring also may be heard in the presence of central sleep apnea. However, snoring may not be as prominent with central sleep apnea as it is with obstructive sleep apnea.

When to see a doctor

Consult a medical professional if you experience, or if your partner observes, any signs or symptoms of central sleep apnea, particularly the following:

- Shortness of breath that awakens you from sleep
- Intermittent pauses in your breathing during sleep
- Difficulty staying asleep
- Excessive daytime drowsiness, which may cause you to fall asleep while you're working, watching television or even driving

Ask your doctor about any sleep problem that leaves you chronically fatigued, sleepy and irritable. Excessive daytime drowsiness (hypersomnia) may be due to other disorders, such as narcolepsy or obstructive sleep apnea.

Central sleep apnea can be caused by a number of conditions that affect the ability of your brainstem — which links your brain to your spinal cord and controls many functions such as heart rate and breathing — to control your breathing. The cause varies with the type of central sleep apnea you have. Types include:

- **Cheyne-Stokes breathing.** This type of central sleep apnea is most commonly associated with congestive heart failure or stroke. This condition is characterized by a gradual increase and then decrease in breathing effort and airflow. During the weakest breathing effort, a total lack of airflow (central sleep apnea) can occur.
- **Drug-induced apnea.** Taking certain medications such as opioids — including morphine sulfate (Ms Contin, Avinza, others), oxycodone (Oxycodone HCL, Oxycontin, others) or codeine sulfate — may cause your breathing to become irregular, to increase and decrease in a regular pattern, or to temporarily stop completely.
- **High-altitude periodic breathing.** A Cheyne-Stokes breathing pattern may occur if you're exposed to a very high altitude. The change in oxygen at this altitude is the reason for the alternating rapid breathing (hyperventilation) and under breathing.
- **Complex sleep apnea.** Some people with obstructive sleep apnea develop central sleep apnea while using continuous positive airway pressure (CPAP) for their sleep apnea treatment. This condition is known as complex sleep apnea because it's a combination of obstructive and central sleep apneas.
- **Medical condition-induced central sleep apnea.** Several medical conditions may give rise to central sleep apnea of the non-Cheyne-Stokes variety.
- **Idiopathic (primary) central sleep apnea.** The cause of this uncommon type of central sleep apnea isn't known. It results in repeated pauses in breathing effort and airflow.

Certain factors put you at increased risk of central sleep apnea:

- **Sex.** Males are more likely to develop central sleep apnea than are females.
- **Age.** Central sleep apnea is more common among older adults, especially adults older than age 65, possibly because they may have other medical conditions or sleep patterns that are more likely to cause central sleep apnea.
- **Heart disorders.** People with atrial fibrillation or congestive heart failure are at greater risk of central sleep apnea. Sleep disordered breathing, such as Cheyne-

Stokes breathing and obstructive sleep apnea, may be present in up to 50 percent of people with congestive heart failure.

- **Stroke or brain tumor.** These brain conditions can impair the brain's ability to regulate breathing.
- **High altitude.** Sleeping at an altitude higher than you're accustomed to may increase your risk of sleep apnea. High-altitude sleep apnea is no longer a problem when you return to a lower altitude.
- **Opioid use.** Opioid medications may increase the risk of central sleep apnea.
- **CPAP.** Some people with obstructive sleep apnea develop central sleep apnea while using continuous positive airway pressure (CPAP). This condition is known as complex sleep apnea because it is a combination of obstructive and central sleep apneas.

For some people, complex sleep apnea goes away with continued use of a CPAP device. Other people may be treated with a different kind of positive airway pressure therapy.

Central sleep apnea is a serious medical condition. Some complications include:

- **Fatigue.** The repeated awakenings associated with sleep apnea make normal, restorative sleep impossible. People with central sleep apnea often experience severe fatigue, daytime drowsiness and irritability.

You may have difficulty concentrating and find yourself falling asleep at work, while watching television or even when driving.

- **Cardiovascular problems.** In addition, sudden drops in blood oxygen levels that occur during central sleep apnea may adversely affect heart health.

If there's underlying heart disease, these repeated multiple episodes of low blood oxygen (hypoxia or hypoxemia) worsen prognosis and increase the risk of abnormal heart rhythms.

Your doctor may make an evaluation based on your signs and symptoms or may refer you to a sleep specialist in a sleep disorder center.

A sleep specialist can help you decide on your need for further evaluation. Such an evaluation often involves overnight monitoring of your breathing and other body functions during a sleep study called polysomnography.

During polysomnography, you're connected to equipment that monitors your heart, lung and brain activity, breathing patterns, arm and leg movements, and blood oxygen levels while you sleep. You may have a full-night or split-night sleep study.

In a split-night sleep study, you'll be monitored during the first half of the night. If you're diagnosed with obstructive sleep apnea/complex sleep apnea/central sleep apnea, staff may wake you and give you continuous positive airway pressure for the second half of the night.

Polysomnography can help your doctor diagnose sleep apnea. It also can help your doctor rule out other sleep disorders, such as periodic limb movements of sleep or narcolepsy, which can cause excessive daytime sleepiness but require different treatment.

Doctors trained in nervous system diseases (neurologists), heart diseases (cardiologists) and others may be involved in evaluating your condition. Doctors may order imaging of your head or heart.