

# Understanding Sleep Apnea: Causes and Contributing Factors

Karl May\*

Department of Neurology, Harvard University, Methodist Healthcare Sleep Disorders Centre, Memphis, USA

## DESCRIPTION

Sleep apnea is a common but serious sleep disorder characterized by repeated interruptions in breathing during sleep. These interruptions, called apneas, can last from a few seconds to minutes and often occur multiple times per hour. If left untreated, sleep apnea can lead to various health complications, including cardiovascular diseases, daytime fatigue, and impaired cognitive function. Understanding the causes of sleep apnea is important for effective diagnosis and management. This article explores the primary causes and contributing factors of sleep apnea.

### There are three main types of sleep apnea

**Obstructive Sleep Apnea (OSA):** The most common form, OSA occurs when the muscles in the throat relax excessively during sleep, causing a temporary blockage of the airway.

**Central Sleep Apnea (CSA):** Less common than OSA, CSA occurs when the brain fails to send appropriate signals to the muscles responsible for controlling breathing.

**Complex sleep apnea syndrome:** Also known as treatment-emergent central sleep apnea, this form occurs when someone has both OSA and CSA.

### Causes of Obstructive Sleep Apnea (OSA)

**Excess weight:** Excess weight is one of the most significant risk factors for OSA. Fat deposits around the upper airway can obstruct breathing by narrowing the airway. This condition is more common in individuals with a Body Mass Index (BMI) of 30 or higher.

**Neck circumference:** A thicker neck can mean a narrower airway.

**Narrowed airway:** Enlarged tonsils or adenoids can block the airway, particularly in children.

**Retrognathia:** A condition where the jaw is set back from the face, potentially contributing to airway obstruction.

**High-arched palate or a deviated septum:** These conditions can also narrow the airway.

**Age and gender:** OSA is more common in older adults, as muscle tone tends to decrease with age, increasing the likelihood of airway collapse. Men are also more likely to develop OSA than women, although the risk for women increases after menopause.

**Family history:** A family history of sleep apnea can increase an individual's risk, suggesting a genetic predisposition to the condition. Shared anatomical traits or inherited disorders affecting the respiratory system can contribute to this risk.

**Lifestyle factors:** Certain lifestyle factors can exacerbate or contribute to the development of OSA:

**Alcohol consumption:** Alcohol relaxes the muscles of the throat, increasing the likelihood of airway obstruction.

**Smoking:** Smoking can cause inflammation and fluid retention in the upper airway, worsening OSA.

**Use of sedatives or tranquilizers:** These substances can relax the muscles of the throat, similar to alcohol.

**Congestive heart failure:** Can lead to fluid buildup in the neck and airway.

**High blood pressure (hypertension):** Often found in individuals with OSA.

**Type 2 diabetes:** There is a high prevalence of OSA among individuals with type 2 diabetes.

**Poly Cystic Ovary Syndrome (PCOS):** Hormonal imbalances can contribute to weight gain and OSA.

### Causes of Central Sleep Apnea (CSA)

**Heart conditions:** CSA is often associated with heart conditions, such as congestive heart failure or atrial fibrillation. These conditions can affect the brain's ability to regulate breathing during sleep.

**Correspondence to:** Karl May, Department of Neurology, Harvard University, Methodist Healthcare Sleep Disorders Centre, Memphis, USA, E-mail: may@karl.co.in

**Received:** 04-Jun-2024, Manuscript No. JSDT-24-32973; **Editor assigned:** 06-Jun-2024, PreQC No. JSDT-24-32973 (PQ); **Reviewed:** 20-Jun-2024, QC No. JSDT-24-32973; **Revised:** 27-Jun-2024, Manuscript No. JSDT-24-32973 (R); **Published:** 04-Jul-2024, DOI: 10.35248/2167-0277.24.13.557.

**Citation:** May K (2024) Understanding Sleep Apnea: Causes and Contributing Factors. J Sleep Disord Ther. 13:557.

**Copyright:** © 2024 May K. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

**Stroke:** A history of stroke can damage the brain's respiratory centers, leading to CSA. The disrupted signals can cause periods of apnea during sleep.

**High altitude:** Sleeping at high altitudes can trigger CSA due to lower oxygen levels, which affect breathing patterns. This form of CSA typically resolves once the individual returns to lower altitudes.

**Certain medications:** Medications such as opioids can depress the central nervous system, leading to disrupted signals from the brain to the respiratory muscles, causing CSA.

**Idiopathic CSA:** In some cases, CSA occurs without an identifiable cause. This is referred to as idiopathic CSA and is relatively rare.

### Contributing factors

**Obesity:** Obesity is a significant contributing factor for both OSA and CSA. Excess weight can affect respiratory function and airway patency.

**Hormonal changes:** Hormonal changes, particularly in women during menopause, can contribute to sleep apnea. Decreased levels of hormones like progesterone, which helps keep the airway muscles active, can lead to increased risk.

**Neurological disorders:** Conditions like Parkinson's disease, ALS (Amyotrophic Lateral Sclerosis), and other neuromuscular disorders can impact the nervous system's ability to regulate breathing, contributing to both OSA and CSA.

**Chronic nasal congestion:** Chronic nasal congestion, whether due to allergies, sinus issues, or anatomical problems, can make breathing difficult and increase the risk of sleep apnea.

### CONCLUSION

Sleep apnea is a multifaceted disorder with various causes and contributing factors. Understanding these underlying causes is essential for effective diagnosis and management. Obstructive sleep apnea is often linked to excess weight, anatomical factors, and lifestyle choices, while central sleep apnea is more commonly associated with neurological and cardiac conditions. Addressing these factors through lifestyle changes, medical treatment, and potentially surgical interventions can significantly improve sleep quality and overall health. If you suspect you have sleep apnea, it is crucial to seek professional medical advice for appropriate diagnosis and treatment.