

Treatment

Given the long-term complications of sleep apnea, it is important for patients to undergo treatment. Because of its association with heart problems and stroke, sleep apnea that does not respond to lifestyle measures should be treated by a physician, ideally a professional specifically trained to treat sleep disorders. Treatment may involve:

Continuous Positive Airway Pressure (CPAP)

At this time, the most effective treatments for sleep apnea are devices that deliver slightly pressurized air (CPAP) to keep the throat open during the night.



Oral Appliances/Special Dental Splints

Several oral appliances are available and are effective in treating mild to moderate obstructive sleep apnea.

Surgery

Surgery is sometimes recommended for severe obstructive apnea. They include procedures to remove obstructions in the airway and expand the airway. The apneas and hypopneas may be greatly reduced or completely resolve. Patients must be assessed by the sleep specialists to decide whether surgery is the preferred solution for them.

Are you too sleepy in the day? Test Yourself!

Category 1

- Do you snore? **Yes / No**
- Is your snoring louder than talking? **Yes / No**
- Do you snore more than 3 times a week? **Yes / No**
- Does your snoring bother other people? **Yes / No**
- Has someone noticed you have breathing pauses during sleep? **Yes / No**

Tick this box if you answered 'Yes' at least twice

Category 2

- Do you feel tired right after you wake up more than 3 times a week? **Yes / No**
- Do you feel tired in the day, more than 3 times a week? **Yes / No**
- Do you nod off and fall asleep in the day, more than 3 times a week? **Yes / No**

Tick this box if you answered 'Yes' at least twice

Category 3

- Do you have high blood pressure? **Yes / No**
- Is your BMI greater than 28 (Asian) or 30 (Caucasian)? (BMI = weight in kg divided by the square of your height in metres) **Yes / No**

Tick this box if you answered 'Yes' at least once

RESULTS

There is a high likelihood you have sleep apnea if you have ticked at least 2 boxes and you should seek advice from a sleep apnea specialist.

(The Berlin Questionnaire for Sleep Apnea, adapted from Table 2 from Netzer, et al., 1999. (Netzer NC, Stoohs RA, Netzer CM, Clark K, Strohl KP. Using the Berlin Questionnaire to identify patients at risk for the sleep apnoea syndrome. Ann Intern Med. 1999 Oct 5; 131 (7): 485-91)

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5 Second Hospital Avenue Singapore 168938 • Tel: (65) 6324 8802 • Fax: (65) 6324 8810
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Obstructive Sleep Apnea (OSA)



Sleep apnea is a potentially serious disorder where breathing stops and starts many times during sleep. (In this condition, breathing typically stops for at least 10 seconds, more than 5 times per hour during the night.)

These pauses in breathing are called apneas. Apnea cuts off the oxygen supply to the body and the rise in carbon dioxide eventually awakens the patient who gasp for air making a snorting sound.

Snoring frequently occurs with sleep apnea. Excessive daytime sleepiness is often another telling sign of the condition. Adults or children may not even know they have the condition.

Obstructive Sleep Apnea (OSA)

OSA, the most common form of apnea, occurs when tissues in the back of the upper throat collapse during sleep, blocking the air passage even though the action of breathing continues. In most cases, the person is unaware and may wake up gasping or snorting.

Obstructive *hypopnea* is another less severe form caused by incomplete airway obstruction. Breathing is continuous but shallow and is accompanied by snoring and decrease in blood oxygen.

Negative Effects of Sleep Apnea

Heart and Circulation - Sleep apnea is strongly associated with high blood pressure, coronary artery disease and heart attack, stroke, heart failure, and irregular heartbeats.

Obesity - Obesity is often a risk factor and possibly a cause of sleep apnea. It is also likely that sleep apnea increases the risk for weight gain.

Sleep Partners - Because sleep apnea so often includes noisy snoring, the condition can adversely affect the sleep quality of a patient's bed partner. Spouses or partners may also suffer from sleeplessness and fatigue.

Infants and Children - Young children with undiagnosed sleep apnea may "fail to thrive", by not gaining weight or grow at a slower rate with low levels of growth hormone. In severe cases, this may affect the heart and central nervous system. Inattention and hyperactivity are common in children with sleep apnea. Evidence suggests some children may be misdiagnosed with attention-deficit hyperactivity disorder when in fact, sleep apnea is the root cause.

Driving safety - Some researchers believe that sleepiness associated with sleep apnea is a great risk factor for car accidents. Many studies report that drowsy driving is as risky as drunk driving, causing a large number of traffic accidents and death.

Symptoms

In Adults

- Snoring with pauses in breathing (apnea)
- Restless sleep
- Excessive daytime sleepiness
- Morning headaches
- Poor judgment and memory loss
- Irritability and impaired mental or emotional functioning.
- Frequent visits to the bathroom at night

In Children

Sleep apnea in children can present with symptoms different from adults:

- Longer total sleep time than normal in some children
- Snoring (not all of them have sleep apnea.)
- More effort in breathing during sleep
- Behavioral difficulties without any obvious cause, such as hyperactivity and inattention. (Some could be misdiagnosed with attention-deficit hyperactivity disorder ADHD)
- Irritability
- Bed-wetting
- Morning headaches
- Failure to grow or gain weight

Diagnosis

If you think you may have sleep apnea, see a sleep specialist who can take a detailed history and perform a head and neck examination. If the doctor suspect a sleep disorder, then you will be referred for an overnight sleep study (polysomnography).



The sleep study is the gold standard for diagnosing snoring and sleep apnea. It tracks the patient's brain, heart and eye activity as well as the breathing and blood oxygen level patterns. In patients who may have sleep apnea, the sleep expert will track episodes where breathing is shallow or stops for longer than 10 seconds. In general, apnea is significant if more than five episodes per hour is reported. If there are more than 15 episodes per hour, the condition is serious.