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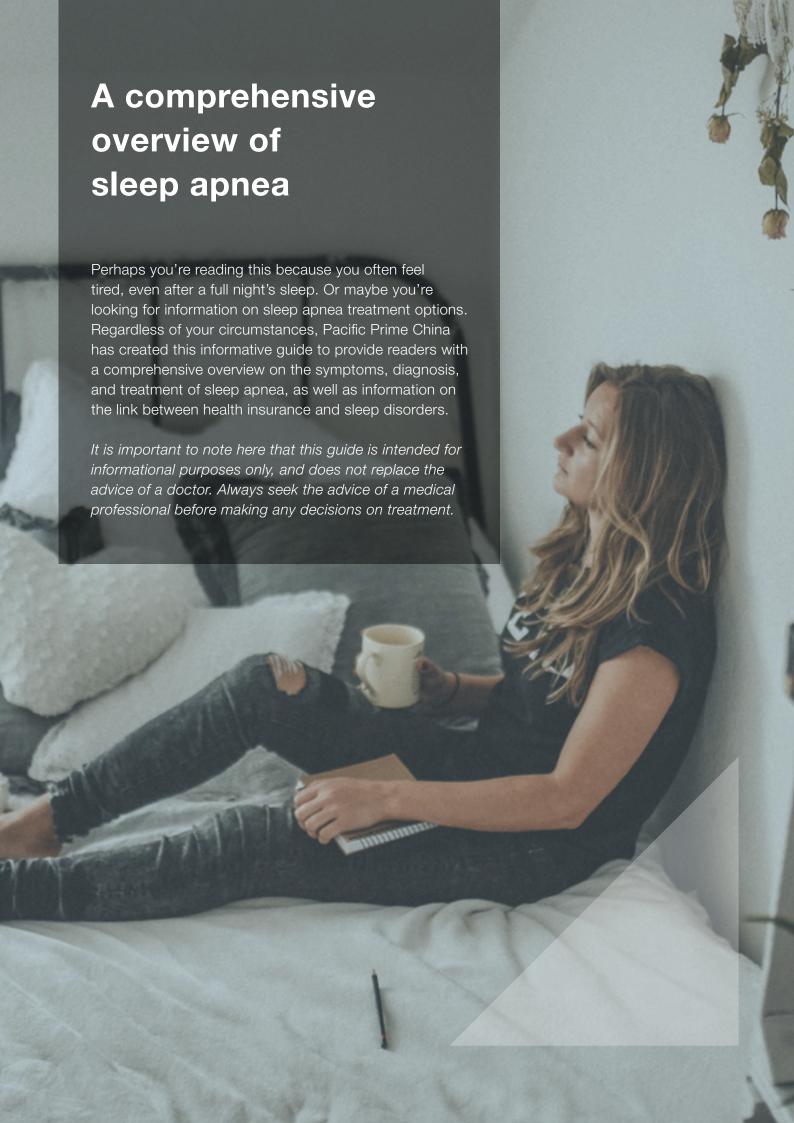


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What is sleep apnea?

Sleep apnea is a condition where you stop breathing for short periods of time during sleep. People with sleep apnea may not be aware they have it. In many cases, it is first observed by a family member.

How does sleep apnea occur?

Normally during sleep, air moves through the throat in and out of the lungs at a regular rhythm. The throat is surrounded by muscles that control the airway for speaking, swallowing, and breathing.

During sleep, these muscles are less active, and this causes the throat to narrow. In most people, this narrowing does not affect breathing. In others, it can cause snoring, sometimes with reduced or completely blocked airflow. A completely blocked airway without airflow is called an obstructive apnea. On the other hand, partial obstruction with diminished airflow is called hypopnea. A person may have apnea and/or hypopnea during sleep.

Insufficient breathing due to apnea or hypopnea causes oxygen levels to fall and carbon dioxide to rise. Because the airway is blocked, breathing faster or harder does not help to improve oxygen levels until the airway is reopened.

Typically, the obstruction requires the person to wake up to activate the upper airway muscles. Once the airway is opened, the person then takes several deep breaths to catch up on breathing. As the person awakens, he or she may move briefly, snort or snore, and take a deep breath. Less frequently, a person may awaken completely with a sensation of gasping, smothering, or choking.

If the person falls back to sleep quickly, he or she will not remember the event. Many people with sleep apnea are unaware of their abnormal breathing in sleep, and all patients underestimate how often their sleep is interrupted. Awakening from sleep causes sleep to be unrefreshing, and causes fatigue and daytime sleepiness.

The main types of sleep apnea are:

Obstructive Sleep Apnea (OSA)	OSA is the more common form of sleep apnea, and occurs when throat muscles relax.
Central Sleep Apnea (CSA)	CSA occurs when the brain doesn't send proper signals to the muscles that control breathing.
Complex sleep apnea syndrome	Complex sleep apnea syndrome occurs when someone has both obstructive sleep apnea and central sleep apnea.





Is sleep apnea dangerous?

Sleep apnea is a serious condition that can affect a person's ability to safely perform normal daily activities, which leads to an increased risk of accidents. The condition can affect one's long term health as well.

People with sleep apnea do not get good quality sleep, so they are often tired and not alert. This puts them at a higher risk for car accidents and other types of accidents. Plus, studies show that people with sleep apnea are more likely than others to have high blood pressure, heart attacks, and other serious heart problems. In people with severe sleep apnea, getting treated can help prevent some of these problems.

In addition, people with untreated OSA may have an increased risk of cardiovascular problems such as high blood pressure, heart attack, abnormal heart rhythms, or stroke. This risk may be due to changes in the heart rate and blood pressure that occur during sleep.

What are the risk factors for sleep apnea?

- Age Sleep Apnea occurs at all ages, but it is more common in middle and older age adults
- Male sex Sleep Apnea is two times more common in men, especially those of middle age
- Overweight or obesity The more obese a person is, the more likely he or she is to have OSA
- Family history Those with a family history of sleep apnea may be at an increased risk of having the condition
- Sedation from medication or alcohol This interferes with the ability to awaken from sleep and can lengthen periods of apnea (no breathing), with potentially dangerous consequences
- Large neck size (greater than 17 inches in men or 16 inches in women) This is associated with an increased risk of sleep apnea
- A narrow upper airway Those with a comparatively large tongue/uvula are also at an increased risk

The main symptoms of sleep apnea are loud snoring, tiredness, and daytime sleepiness. Other symptoms can include:

- Restless sleep
- Awakening with a sensation of choking, gasping, or smothering
- Morning headaches, dry mouth, or sore throat
- Waking up often to urinate
- Low energy, difficulty concentrating, memory impairment (i.e. trouble thinking clearly or remembering things)
- Moodiness or irritability

Additional physical findings that are common among patients with OSA include the following:

- Narrow airway enlarged tonsils or tongue
- Large neck and/or waist circumference OSA is more strongly correlated with an increased neck size or waist circumference than general obesity. OSA is particularly prominent among men who have a collar size greater than 17 inches, and women who have a neck size greater than 16 inches
- Elevated blood pressure Approximately 50 percent of patients with OSA have coexisting hypertension, which is often most elevated in the morning. Similarly, patients with resistant hypertension have a very high prevalence of OSA

Is there a diagnostic test for sleep apnea?

Yes, sleep apnea is often diagnosed with an overnight sleep study (polysomnogram). The polysomnogram measures the patient's breathing effort and airflow, blood oxygen level, heart rate and rhythm, duration of the various stages of sleep, body position, and movement of the arms/legs.

How should I prepare for a sleep study?

On the day of your sleep study, you should:

- Avoid alcohol
- Avoid drinking coffee, tea, sodas, and other drinks that have caffeine in the afternoon and evening
- Take all of your regular medicines, unless your doctor tells you not to



What if I'm diagnosed with sleep apnea? How is it treated?

The goal of treatment is to maintain an open airway during sleep. The most effective treatment for sleep apnea is a device that keeps your airway open while you sleep.



Continuous positive airway pressure (CPAP)

The most effective treatment for sleep apnea uses air pressure from a mechanical device (facial mask) to keep the upper airway open during sleep. A CPAP device uses an air-tight attachment to the nose - typically a mask connected to a tube and a blower which generates the pressure.

Devices that fit comfortably into the nasal opening, rather than over the nose, are also available. CPAP should be used any time the person sleeps (day or night). The mask might seem uncomfortable to wear at first, and the machine might seem noisy, but using the machine can really pay off. People with sleep apnea who use a CPAP machine feel more rested and generally feel better.

The CPAP device is usually used for the first time in the sleep lab, where a technician can adjust the pressure and select the best equipment to keep the airway open. Alternatively, an "auto" device with a self-adjusting pressure feature, provided with proper education and training, can get treatment started without another sleep test.

While the treatment may seem uncomfortable, noisy, or bulky at first, most people accept the treatment after experiencing better sleep. However, difficulty with mask comfort and nasal congestion prevent up to 50 percent of people from using the treatment on a regular basis.

Dental devices

A dental device, also commonly referred to as an oral appliance or mandibular advancement device, can reposition the jaw (mandible), bringing the tongue and soft palate forward as well. This may relieve obstruction in some people.

This treatment is excellent for reducing snoring, although its effect on OSA is sometimes more limited. As a result, dental devices are best used for mild cases of OSA when relief of snoring is the main goal. Failure to tolerate and accept CPAP is another indication for dental devices. While dental devices are not as effective as CPAP for OSA, some patients prefer a dental device to CPAP. Side effects of dental devices are generally minor but may include changes to the bite with prolonged use.

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Surgical treatment

Surgical treatment is an alternative therapy for patients who cannot tolerate or do not improve with nonsurgical treatments such as CPAP or dental devices. Surgery can also be used in combination with other nonsurgical treatments.

Surgical procedures reshape structures in the upper airways, or surgically reposition bone or soft tissue. Uvulopalatopharyngoplasty (UPPP) removes the uvula and excessive tissue in the throat, including the tonsils, if present. Other procedures, such as maxillomandibular advancement (MMA), address both the upper and lower pharyngeal airway more globally.

UPPP alone has limited success rates (less than 50 percent) and people can relapse (when OSA symptoms return after surgery). As a result, this surgery is only recommended to a minority of people and should be considered with caution. MMA may have a higher success rate, particularly in people with abnormal jaw (maxilla and mandible) anatomy, but it is the most complicated procedure. A newer surgical approach - nerve stimulation to protrude the tongue - has shown promising success rates in very selected people.

Tracheostomy creates a permanent opening in the neck. It is reserved for people with severe disease in whom less drastic measures have failed or are inappropriate. Although it is always successful in eliminating obstructive sleep apnea, tracheostomy requires significant lifestyle changes and carries some serious risks (eg., infection, bleeding, blockage).

All surgical treatments require discussions about the goals of treatment, the expected outcomes, and potential complications.

Without the CPAP mask, dental device, or the surgery, is there anything else I can do on my own to help my sleep apnea?

Yes. Here are some things that might help:

Adjust sleep position

Stay off your back when sleeping. This may help improve sleep quality in people who have OSA when sleeping on their back. However, this is difficult to maintain throughout the night and is rarely an adequate solution. Also, it is not always practical, because people cannot control their position while asleep. Plus, it only helps some people.



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Lose weight

Weight loss may be helpful for obese or overweight patients. Weight loss may be accomplished with dietary changes, exercise, and/or surgical treatment. However, it can be difficult to maintain weight loss; the five-year success of non-surgical weight loss is only 5 percent, meaning that 95 percent of people regain lost weight.



3

Avoid alcohol and other sedatives

Alcohol can worsen sleepiness, potentially increasing the risk of accidents or injury. People with OSA are often counseled to drink little to no alcohol, even during the daytime. Similarly, people who take anti-anxiety medications or sedatives to sleep should speak with their healthcare provider about the safety of these medications







Will my China health insurance plan cover sleep apnea?

Some insurers will have exclusions relating to any sleeping disorders and, as such, may not cover treatment relating to sleep apnea. Please check with an established broker like Pacific Prime China to ensure that your benefits include treatment for sleeping disorders before proceeding.

If your plan does cover sleep related conditions, then sleep studies are usually categorized as a Day Case and will be covered under the inpatient portion of your policy. The CPAP machine is usually covered under the medical device benefit.

Finally, we advise that you check with your broker first to find out the full extent of your coverage before proceeding with treatment.

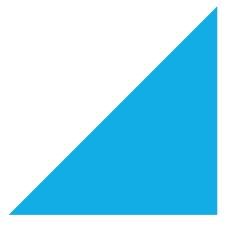
Using Pacific Prime China to your advantage

If you have any questions regarding sleep apnea treatment and health insurance coverage in China, feel free to get in touch with our team of advisors today.

As the nation's insurance broker of choice, Pacific Prime China's experts operate out of both Shanghai and Beijing, and have a wealth of experience matching expats and locals with the most ideal insurance solutions for their needs.

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