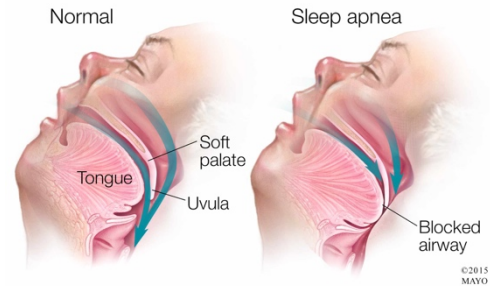


Sleep apnea is a sleep disorder in which breathing repeatedly stops and starts. There are three different types of sleep apnea which have similar symptoms, making it difficult to determine which type a patient may have. Obstructive sleep apnea (OSA) is the most common form that occurs when the throat muscles relax and cause a narrowing or collapse of the pharyngeal airway. This causes symptoms of loud snoring, gasping for air during sleep, dry mouth, morning headache, daytime sleepiness, and insomnia. Central sleep apnea occurs when the brain does not send proper signals to the muscles that control breathing. The third form is called complex sleep apnea which is a combination of both obstructive sleep apnea and central sleep apnea.

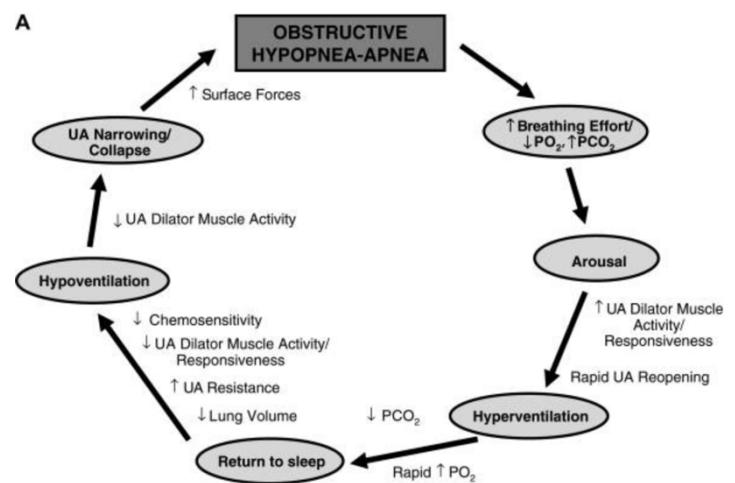


OSA occurs when the muscles that support the soft palate, uvula, tonsils, and side walls of the throat relax. These disruptions to breathing lead to intermittent blood gas disturbances (hypercapnia and hypoxemia) and surges of sympathetic activation. When this occurs, the brain senses the inability to breathe and briefly awakens the patient from sleep. This can happen anywhere from five to thirty times an hour, making it difficult to reach deep, restful phases of sleep.

Although anyone can develop OSA, there are factors that can put an individual at an increased risk of developing this condition. Excess weight or obesity, hypertension, nasal congestion, smoking, and diabetes can put an individual at an increased risk. Genetics can also play a role if a person inherits a naturally narrow airway.

The upper airway is composed of numerous muscles and soft tissue but lacks rigid or bony support. Most notably, it contains a collapsible portion that extends from the hard palate to the larynx. Although the ability of the upper airway to change shape and momentarily close is essential for speech and swallowing during wakefulness, this feature also provides the opportunity for collapse at inopportune times such as during sleep. Therefore, from an anatomical perspective, a narrow airway is generally more prone to collapse than a larger one.

One mechanism believed to be important in the pathogenesis of OSA relates to the interaction between pharyngeal anatomy and a diminished ability of the upper airway dilator muscles to maintain a clear and definite airway during sleep. Ventilatory control plays a big role in the dilator muscles staying clear. Obstructive events tend to occur during periods of low respiratory drive.<sup>1</sup> These events can be described by figure A on the right. Decreased lung volume, or Cold Lung in TCM, causes a decrease in upper airway responsiveness which leads to the narrowing and collapse of the throat. A study done on overweight OSA patients showed that the pharyngeal airway decreases as lung volume decreases.<sup>2</sup> This cycle of hyper and hypo ventilation can occur throughout the whole night.



**Wellness Recommendation**

The wellness recommendation for sleep apnea includes Sympnea. Sympnea enhances Lung Yang to help repel the Coldness from the lungs and the resulting Cold Steam that resides in the throat. It helps restore the structure and function of the muscles in the throat to help address OSA. The herbal ingredients in Sympnea reduce lung inflammation, protect against acute lung injury, and protein leakage. Patients can experience symptom improvement

with a better night's sleep and decreased snoring in 1-3 days and 4-6 weeks of the product is recommended for significant improvement.

Patients that also have a Cold Heart or Heart Yang deficiency may experience an improvement plateau with *Sympnea*. Cold Lung conditions or decreased lung volume can also be caused by a Cold Heart or Heart Yang deficiency and the resulting reduced blood flow to the lung. Patients may experience not only sleep apnea symptoms, but also shortness of breath, chest pain, light-headedness, heart palpitations, irregular heartbeat, and/or leg swelling during the day. Conditions that involve Heart Yang deficiencies include atrial fibrillation, heart inflammation or chronic myocarditis, chronic pericarditis, bradycardia or slow heart rate, mitral valve prolapse, rheumatic heart disease, and congestive heart failure. The wellness recommendation to address Heart Yang deficiency include *Myogen*, *CV*, *B-2*, *PaceKeeping*, and *Qi Booster*. *Myogen* nurtures heart Yang and clears cold Damp in the heart and the pericardium. It improves blood flow to the heart muscle and clears inflammation and toxins. *CV* formula helps dissolve plaque formed in the arteries. *B2* supports the spleen and strengthens lymph recycling for waste disposal. *Pacekeeping* nurtures heart Qi and helps improve the sympathetic nervous function to stabilize heart rhythm. *Qi Booster* helps enhance blood flow to the heart and lungs to support the body's overall Qi. Patients can experience symptom improvement in 1 week and 4-6 weeks of the protocol is recommended for significant improvement.

For more information on cardiovascular issues, please see the Cardiovascular Disease Protocol.

### **Selected Case Study**

#### Successful Resolution of Allergies, Asthma, Sinusitis, and Sleep Apnea

*Hasna Tiffany Wood, LAc*

A female patient, age 67, had come for treatment as she had been diagnosed with multiple conditions including severe allergies, chronic pain, obesity, digestive abnormalities (e.g. *Candida*) as well as cardiovascular disease, corona artery disease, arrhythmia, reduced blood flow in her legs, plaque in her arteries, high cholesterol, hypertension, adrenal fatigue as well as potential thyroid problems. The MDs had prescribed an endless list of medication.

A combined treatment program was prescribed. It consisted of acupuncture, face massage, dietary changes as well as herbal remedies. More specifically, the patient started on *Bitter* and *EZ-Air* (against allergies) for two weeks. After another two weeks with *B2* and *Apro Capsules* her sinusitis had been completely cleared. *Soup A* and *LC Balancer* were applied in the following three weeks (preventative). The total protocol lasted for about 3 months (2-3 times a week).

After a few sessions the patient had improved significantly. Her cough had been greatly reduced. The wheezing was practically eliminated. After 6 weeks into the program her sleep apnea had completely subsided. The patient's nasal inflammation was gone (no stuffed nose, no wheezing). The patient's energy level had increased dramatically. The results have been sustained ever since and the patient is very happy with her results.

#### References:

1. Eckert, D. J., & Malhotra, A. (2008). Pathophysiology of adult obstructive sleep apnea. *Proceedings of the American Thoracic Society*, 5(2), 144–153. <https://doi.org/10.1513/pats.200707-114MG>
2. Abdeyrim, A., Zhang, Y., Li, N., Zhao, M., Wang, Y., Yao, X., Keyoumu, Y., & Yin, T. (2015). Impact of obstructive sleep apnea on lung volumes and mechanical properties of the respiratory system in overweight and obese individuals. *BMC pulmonary medicine*, 15, 76. <https://doi.org/10.1186/s12890-015-0063-6>