

WHY AM I USING CPAP?

Your doctor has prescribed Continuous Positive Airway Pressure or CPAP (pronounced See'-pap) therapy for you. When used appropriately, CPAP therapy is nearly 100% effective in managing obstructive sleep apnea. It is important for you to understand why you are using the therapy and the benefits you may expect from using it. In order to better explain CPAP and its use, let's look at some of the most common questions patients may have about its use.

Why am I using CPAP?

Most people using CPAP have a condition known as obstructive sleep apnea or OSA. During sleep, the muscles in the back of the throat relax causing the upper airway to become smaller. This is especially true during the deepest stages of sleep (called Rapid Eye Movement or REM sleep). In some individuals, the upper airway can actually collapse, causing a blockage of air movement into the lungs. When airflow is stopped for at least 10 seconds, it is referred to as **apnea**. These apneas can occur many times each hour and hundreds of times each night.



The soft tissue of the tongue and throat can collapse causing airway blockage

Why is this bad?

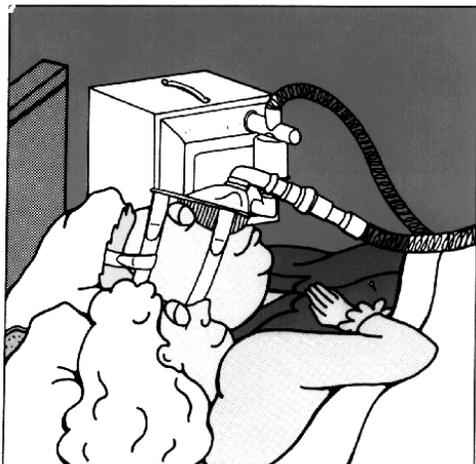
Apneas can cause several problems. Oxygen levels in the blood can drop to dangerous levels causing irregular heartbeats and increased blood pressure within the lungs. This stresses the heart and over time can result in damage to the heart. Obstructive sleep apnea is associated with increased blood pressure, heart disease, and even stroke.

During apneas, an arousal (i.e., moving to "shallower" sleep) may occur, affecting the patient's ability to maintain deeper stages of restful sleep. It is because of this that sleep apnea patients are frequently very sleepy during the day. Other symptoms that may be associated with sleep apnea include severe snoring, waking up gasping or short of breath, morning headaches, impaired thinking, attention deficit, poor memory, mood changes, depression, and impotence.

Table 1. Consequences of Obstructive Sleep Apnea

Cardiovascular Consequences of Obstructive Sleep Apnea	Nervous System/Behavioral Consequences of Obstructive Sleep Apnea
<u>Confirmed Associations</u> Hypertension Stroke Ischemic Heart Disease Reduced Drive to Breathe	<u>Confirmed Associations</u> Excessive Daytime Sleepiness Attention Deficit
<u>Suspected Associations</u> Chest Pain at Night Right and/or Left Heart Enlargement Insulin Resistance	<u>Suspected Associations</u> Learning/Memory Deficit Decrease in Intellectual Capacity Impotence

How does CPAP therapy help?



Continuous Positive Airway Pressure or CPAP therapy works by creating positive air pressure within the back of the throat preventing airway collapse and apnea. This positive pressure pushes out on the walls of the throat, creating an "air splint" within the airway in much the same way that air pressure within a balloon pushes out on the walls of the balloon preventing it from collapsing.

Positive pressure is delivered by the CPAP machine to the airway by a mask that is worn over the nose (called a nasal mask) or over the nose and mouth (called a full face mask).

What is Bilevel Positive Airway Pressure or BiPAP® therapy?

Bilevel Positive Airway Pressure delivers two different pressures to the airway. One during inspiration, and a lower pressure during exhalation. Some patients find this to be more comfortable than a single continuous pressure.



Are there problems with CPAP or BiPAP® therapy?

Most patients are able to use CPAP without significant problems after a period of acclimating to the mask and pressure. Don't be surprised if it takes a period of time to get used to. Other problems can be soreness around the nose and mouth, irritation to

the eyes, problems tolerating the pressure, claustrophobia, dry nose or mouth, difficulty sleeping, or nasal congestion. If any of these occur, contact your equipment provider and they will be able to offer possible solutions. If problems persist, talk with your doctor about other alternatives. (See Table 2.)



Dealing With Problems

Most problems encountered while using CPAP are easy to correct. If you have any of the common problems, always contact your equipment supplier right away. Waiting can only cause the problem to worsen. They will work together with you to find a suitable solution to your concerns.

Table 2. Intolerance of CPAP and Potential Solutions

	Problem	Possible Solution
Mask-Related	Soreness Around Nose and/or Mask Leak	<ul style="list-style-type: none"> • Refit Mask • Adjust Straps • Different Mask Type
	Mouth Leak	<ul style="list-style-type: none"> • Chin Strap • Humidifier • Full Face Mask
	Claustrophobia	<ul style="list-style-type: none"> • "Nasal Pillow" Device • Slow Acclimation
Pressure-Related	Difficulty Exhaling	<ul style="list-style-type: none"> • Lower Pressure • Ramp Settings • Bilevel PAP
	Nasal Congestion/ Runny Nose	<ul style="list-style-type: none"> • Nasal Decongestant • Nasal Saline Wash • Humidifier
	Nasal Dryness	<ul style="list-style-type: none"> • Nasal Saline Wash • Humidifier • Room Humidifier
Other	Continuing Symptoms (e.g., sleepy, headaches, etc.)	<ul style="list-style-type: none"> • Adjust Settings • Different Therapy
	Air Temperature	<ul style="list-style-type: none"> • Increase Room Temperature • Heated Humidifier • Tubing Under Blanket
	CPAP Machine Too Loud	<ul style="list-style-type: none"> • Quieter (Newer) Device • Move Further from Bed
	Can't Sleep	<ul style="list-style-type: none"> • Ramp Feature • Time to Acclimate

What Else Can I Do?

Your doctor may suggest other lifestyle changes that could benefit the management of you obstructive sleep apnea.

- **Weight Loss-** Being significantly overweight can contribute to your sleep apnea. Although not all patients with sleep apnea are overweight, it is common in sleep apnea patients. With significant weight loss, sleep apnea may be reduced or even eliminated. Your doctor may suggest a safe and effective weight loss program for you.
- **Avoid Alcohol-** Alcoholic drinks prior to sleeping can significantly worsen sleep apnea problems. Alcohol should be avoided for several hours prior to sleeping.
- **Medications-** Some medications may worsen sleep and aggravate sleep apnea problems.
- **Sleeping Position-** In some individuals, sleep apnea may worsen when sleeping on your back. Training yourself to sleep on your side with pillows or even tennis balls sown on the back of a tee shirt may help.

What if I cannot tolerate CPAP?

Most patients will be able to tolerate CPAP well, given time to acclimate to the therapy. For individuals that cannot use their CPAP, alternative therapies are available. Call us or talk with your doctor if you have difficulty using your CPAP device.

- **Bilevel Positive Airway Pressure-** If you have difficulty exhaling against the CPAP pressure, Bilevel PAP may be easier to tolerate. By using a lower pressure during exhalation, the patient may find it more comfortable.
- **Noninvasive Ventilation-** Noninvasive Ventilation or NPPV may be helpful if you have periods of central apnea (periods of no effort to breathe), mixed apneas (central apneas mixed with obstructive events), or coexisting conditions (e.g., COPD) that affect your lungs or heart.
- **Oxygen Therapy-** Although oxygen therapy won't correct your obstructive apneas, it can help to prevent the serious drops in your oxygen level that often accompany apnea events. Uncorrected, these low oxygen levels can lead to significant stress on your heart. Oxygen may be used along with your CPAP.
- **Surgery-** There are surgeries (e.g., tracheostomy, UPPP) that have been used to try to manage OSA. Success has been mixed.
- **Dental Devices-** For some people, the use of a special dental device may help by slightly advancing the lower jaw.