

CPAP & BiPAP

Factsheet



What is CPAP and BiPAP

CPAP and BiPAP are the ventilation devices used for the treatment of sleep apnea and a host of other respiratory and cardiac problems. On a basic level BiPAP is used for ventilation and CPAP for oxygenation.

How CPAP Works

CPAP (Continuous Positive Airway Pressure) machines deliver a predetermined level of pressure to keep the airways open. It releases a stream of compressed air through a hose to the nose mask and keeps the upper airway open under continuous air pressure. This air pressure prevents obstructive sleep apnea, which occurs as a result of narrowing of the airway due to the relaxation of upper respiratory tract muscles during sleep. This machine helps to increase the oxygen flow by keeping the airway open. CPAP, though initially used to treat sleep apnea, is also used for patients with neuromuscular diseases and respiratory problems. One problem with an apparatus that uses a continuous amount of air pressure is that the person has to exhale against this extra pressure. This makes it imperfect or unsuitable for certain people, such as those who are suffering from neuromuscular diseases.

Who might need CPAP

Your doctor may recommend CPAP if you have obstructive sleep apnea. CPAP often is the best treatment for adults who have this condition.

Children also can have obstructive sleep apnea. The most common treatment for children is surgery to remove the tonsils and adenoids. If symptoms don't improve after surgery, or if the condition is severe, CPAP may be an option.

If you have sleep apnea symptoms, your doctor may recommend an overnight sleep study.

A special type of CPAP device is used to treat breathing disorders that are similar to sleep apnea, such as chronic hypoventilation or central sleep apnea.

In these conditions, the airways aren't blocked. However, the brain may not send the signals needed for proper breathing. This causes breaths that are too shallow or slow to meet your body's needs.

In central sleep apnea, you may stop breathing for brief periods. This disorder can occur alone or with obstructive sleep apnea. Only a sleep study can find out which type of sleep apnea you have and how severe it is.

Besides treating sleep apnea and other similar disorders, CPAP also is used to treat preterm infants whose lungs have not fully developed. For example, doctors may use CPAP to treat infants who have respiratory distress syndrome or bronchopulmonary dysplasia.

Treatment with CPAP can improve a preterm infant's chance of survival and reduce the need for other treatments and therapies.

CPAP machine parts

- A mask or other device that fits over your nose or your nose and mouth
- A tube that connects the mask to the machine's motor
- A motor that blows air into the tube



CPAP Benefits

- Keeps airway open while you sleep
- Correct snoring so others in your household can sleep
- Improve your quality of sleep
- Relieve sleep apnea symptoms, e.g. excessive daytime sleepiness
- Decrease or prevent high blood pressure

CPAP Side Effects

- Mask allergies and skin irritation
- Dry mouth
- Congestion, runny nose, sneezing, Sinusitis and nosebleeds
- Stomach bloating and discomfort

Most of the side effects can be reduced by using a humidifier, nasal spray and antihistamine.

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How BiPAP Works

BiPAP (Bi-Level Positive Airway Pressure) machines are non-invasive machines that provide positive pressure while a person breathes in and lowers the air pressure when a person breathes out. The BiPAP has preset pressures: EPAP (exhalation pressure) and IPAP (inhalation pressure). The machine may also have a timing feature for breaths per minute (BPM). If the sleeping person doesn't take a breath, the BiPAP machine increases pressure, forcing the sleeping person to take a breath. The air pressure then decreases, allowing the person to work less against the airflow pressure to exhale. Because the sleeper's breathing varies, so does the BiPAP's pressure, allowing the pressure drop to vary according to the needs of the sleeping individual. This ability to vary air pressure allows the sleeper to exert less energy to exhale and sleep deeper. BiPAP is used to treat central sleep apnea and severe obstructive sleep apnea. It is also prescribed for patients who suffer from respiratory and heart diseases.

Who might need BiPAP

BPAP devices have been found to be especially useful for patients who have congestive heart failure or lung disorders, especially conditions that result in above-normal levels of carbon dioxide. In addition, patients for whom intubation — the insertion of a tube through the mouth — is not possible can benefit from the breathing assistance provided by a BPAP machine. Other people who can benefit include those who suffer from atelectasis, which results when all or part of a lung collapses, and which results in the loss of the ability of air sacs at the furthest reaches of the lungs to expand.

BiPAP Overview

- Quiet, small & easy to use
- Heated & non heated humidifiers
- Pillow masks offer reduced pressure points & limited facial contact
- Full face masks cover nasal cavity & mouth with foam inserts for comfort



	Pro's	Con's
CPAP	The CPAP treatment is very safe and effective for treating sleep apnea. The pressure settings of these machines can be adjusted according to the patient's requirement. The size of the nasal or the face mask can also be adjusted. CPAP treatment can be used on a trial basis. It can be discontinued if the patient shows a low level of tolerance. CPAP can also be used in conjunction with other treatments.	Patients who use CPAP machines may experience headaches, skin irritation and stomach bloating. Nasal congestion and runny nose is also observed among patients using these machines. Patients suffering from claustrophobia and anxiety disorders should be administered special medication, because their tolerance to CPAP treatment is very low.
BiPAP	BiPAP treatment is generally prescribed for patients who cannot tolerate CPAP or who suffer from other respiratory disorders in addition to sleep apnea. Since expiration requires less pressure than inspiration, a BiPAP machine is designed in a way that during expiration, it reduces the pressure to a predetermined level. This machine is very effective for patients with neuromuscular and cardiopulmonary disorders.	Side effects of BiPAP treatment are the same as that of CPAP. Common side effects include headaches, rhinitis or a runny nose, dizziness and stomach problems like indigestion. Side effects of BiPAP treatment though common, are not very serious. The pressure settings of the BiPAP machines require constant supervision.

Information source: www.EU-PAP.co.uk & www.nhlbi.nih.gov