National Heart, Lung, and Blood Institute

What Is CPAP?

CPAP, or continuous positive airway pressure, is a treatment that uses mild air pressure to keep the airways open. CPAP typically is used by people who have breathing problems, such as sleep apnea.

CPAP also may be 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 (brong-ko-PULL-mun-ary dis-PLA-ze-ah).

The main focus of this article is CPAP treatment for sleep apnea, although treatment in preterm infants is discussed briefly.

Overview

CPAP treatment involves a CPAP machine, which has three main parts:

- A mask or other device that fits over your nose or your nose and mouth. Straps keep the mask in place while you're wearing it.
- A tube that connects the mask to the machine's motor.
- A motor that blows air into the tube.

Some CPAP machines have other features as well, such as heated humidifiers. CPAP machines are small, lightweight, and fairly quiet. The noise that they make is soft and rhythmic.

CPAP often is the best treatment for obstructive sleep apnea. Sleep apnea is a common disorder that causes pauses in breathing or shallow breaths while you sleep. As a result, not enough air reaches your lungs.

In obstructive sleep apnea, your airway collapses or is blocked during sleep. When you try to breathe, any air that squeezes past the blockage can cause loud snoring. Your snoring may wake other people in the house.

The mild pressure from CPAP can prevent your airway from collapsing or becoming blocked.

The animation below shows how CPAP works to treat sleep apnea. Click the "start" button to play the animation. Written and spoken explanations are provided with each frame. Use the buttons in the lower right corner to pause, restart, or replay the animation, or use the scroll bar below the buttons to move through the frames.

The animation shows how CPAP can help keep the airway open and prevent sleep apnea symptoms.

If your doctor prescribes CPAP, you'll work with someone from a home equipment provider to select a CPAP machine. (Home equipment providers sometimes are called durable medical equipment, or DME.)

Your doctor will work with you to make sure the settings that he or she prescribes for your CPAP machine are correct. He or she may recommend an overnight sleep study to find the correct settings for you. Your doctor will want to make sure the air pressure from the machine is just enough to keep your airway open while you sleep.

There are many kinds of CPAP machines and masks. Let your doctor know if you're not happy with the type you're using. He or she may suggest switching to a different type that might work better for you.

CPAP also is used to treat preterm infants whose lungs have not fully developed. For this treatment, soft prongs are placed in an infant's nostrils. The CPAP machine gently blows air into the baby's nose, which helps inflate his or her lungs.

Outlook

CPAP has many benefits. It can:

- Keep your airway open while you sleep
- Correct snoring so others in your household can sleep
- Improve your quality of sleep

- Relieve sleep apnea symptoms, such as excessive daytime sleepiness
- Decrease or prevent high blood pressure

Many people who use CPAP report feeling better once they begin treatment. They feel more attentive and better able to work during the day. They also report fewer complaints from bed partners about snoring and sleep disruption.

In some preterm infants whose lungs have not fully developed, CPAP improves survival. It also can reduce the need for steroid treatment for the lungs.

Also, in some infants, CPAP prevents the need to insert a breathing tube through the mouth and into the windpipe to deliver air from a ventilator. (A ventilator is a machine that supports breathing.)

CPAP treatment is less invasive than ventilator therapy. Research suggests that CPAP is an appropriate first treatment for some preterm newborns.

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