

Positive Airway Pressure (PAP) for the Treatment of Obstructive Sleep Apnea in Children

Obstructive sleep apnea (OSA) is a problem that affects your child's breathing during sleep. With OSA, your child's airway becomes partly or completely blocked while sleeping, which makes it difficult to breathe and results in poor quality sleep. Symptoms of OSA include snoring, gasping, frequent awakenings, or pauses in breathing during sleep (see ATS Patient Series on Obstructive Sleep Apnea in Children at www.thoracic.org/patients).



If not treated, sleep apnea can cause a number of symptoms and lead to serious health problems, including high blood pressure (hypertension) and heart disease later in life.

What is the treatment for obstructive sleep apnea?

The treatment for obstructive sleep apnea may include removing your child's adenoids and tonsils, taking medications and losing weight. If these treatments do not improve your child's OSA or are not appropriate for your child, positive airway pressure (PAP) may be recommended. This treatment is the same as used in adults with OSA.

How does positive airway pressure work?

PAP is delivered by a device that blows air (under pressure) into your child's airway through a mask that covers their nose and mouth. Positive airway pressure helps keep your child's airway from closing or narrowing when they sleep. This pressure acts like a "splint" to keep the breathing passages from narrowing. This is done by having two different sets of pressures to breathe: 1) CPAP, which is continuous pressure when they breathe in and out, and 2) Bilevel PAP (BPAP), which is bilevel positive airway pressure that allows for separate pressures when breathing in and breathing out.

The CPAP or BPAP device is connected to your child by a mask that is fitted to your child's face. The mask is held on with straps that reach around the back of the head. Your child will wear this mask while they are sleeping to receive the continuous air from the device. For most children, the air that blows is not additional oxygen.

What happens if PAP is recommended for my child?

First, your child may be given a mask and headgear to take home to use for short periods during the day. This will help them get used to using the mask at night. Have your child wear the mask while awake and doing an enjoyable activity such as watching a movie or television, or listening to a story.

Once your child has already had a sleep study in order to diagnose their sleep apnea, a second study will be done to set the pressure on the PAP device. The second overnight sleep study using the PAP device will allow for any adjustment needed to improve breathing during sleep and will work much the same way as the first one, except a sleep technologist will adjust the pressure of the PAP device while your child is sleeping.

After the sleep study test, your child's healthcare provider will be able to provide you with the results and all the information that you need so that your child can have PAP in your home to wear every night during sleep.

How can I help my child get comfortable with PAP at home?

Most children take time to become comfortable with PAP after a few weeks. Have your child go to sleep at the same time each night. This bedtime routine will help them adapt better to using the PAP device. Talk to your equipment provider if the mask isn't comfortable. There are likely several options available.

You may also find it helpful to create a reward system for each night your child wears the mask. For younger

children, this may include a sticker chart. Older children may benefit from other rewards. A member of the healthcare team will monitor your child’s progress. For more tips see the ATS Patient Information Series fact sheet on ‘PAP Troubleshooting’.

Does my child need to use the PAP device during naps, sleep overs and traveling?

Yes. Like medication, it is important to use the PAP device regularly. PAP is most successful in treating your child’s OSA when used every night for the entire sleep time. Generally we recommend that PAP be worn during all sleep periods, but these recommendations should be discussed with your healthcare provider.

How will I know if my child is receiving the right pressure?

Your healthcare provider may monitor your child’s response to the treatment from information recorded by the device/machine. Information obtained from the machine may include the time spent on the PAP, the presence of mask leak, and residual apneas. Some devices that provide a range of pressures may have information on the pressure delivered for most part of the night. This can help your healthcare provider adjust the settings if needed to address your child’s OSA.

Will my child need to do any other sleep study once PAP therapy is started?

Your child may be scheduled for another sleep study after starting PAP. Your child’s sleep specialist or other healthcare provider may decide that another study is needed. A repeat study may be done if your child’s symptoms do not go away or are not controlled by the pressure setting on the PAP device.

What are the common side effects of PAP therapy and how can they addressed?

Skin breakdown	Proper mask fitting and placement; use barrier (gel, cloth or tape) between skin and mask
Pink eye (from air blowing on eye with mask leak)	Proper mask fitting and placement; keeping the mask clean to prevent mask leak
Stuffy nose; nose bleeding	Add humidifier to device to moisten the air; consider use of a nose spray
Mouth dryness – often from open mouth breathing	Consider trying a nasal mask with chin strap
Gas pain from air swallowing	Consider trying a nasal mask rather than face mask
Claustrophobia– feeling closed in with mask on face	Consider using a nasal mask or nasal pillows instead of face mask

How long will my child need to use PAP?

Some children may need to use PAP as a long-term treatment. Your healthcare provider will continue to follow your child and re-evaluate the need for PAP therapy.

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Rx Action Steps

If your child needs treatment for sleep apnea:

- ✓ Talk with your healthcare provider about seeing a sleep specialist.
- ✓ Make sure your child uses PAP with sleep every night and if needed during other sleep periods.
- ✓ Have regular follow-up with your child’s sleep specialist and ask for help if your child is having problems using PAP.
- ✓ Help your child get used to wearing a PAP mask.

Healthcare Provider’s Contact Number:

For More Information

American Thoracic Society

- www.thoracic.org/patients
 - Obstructive Sleep Apnea in Children
 - PAP Troubleshooting

American Academy of Pediatrics

- <http://www.healthychildren.org/English/ages-stages/baby/sleep/Pages/Sleep-Apnea-Detection.aspx>

American Academy of Sleep Medicine

- <http://www.sleepeducation.com/essentials-in-sleep/cpap>

Pediatric Society of New Zealand

- <https://www.kidshealth.org.nz/continuous-positive-airway-pressure-cpap>

American Sleep Apnea Association

- <https://www.sleepapnea.org/children-and-sleep-apnea/>

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