

Understanding PAP

A Guide to Positive Airway Pressure (PAP) Therapy



MOUNT SINAI - NATIONAL JEWISH HEALTH

Respiratory Institute



Respiratory Institute



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This guide will help you understand why treating sleep apnea is important, address the most common challenges associated with positive airway pressure (PAP) therapy, and improve comfort with your treatment.

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What is Sleep Apnea?

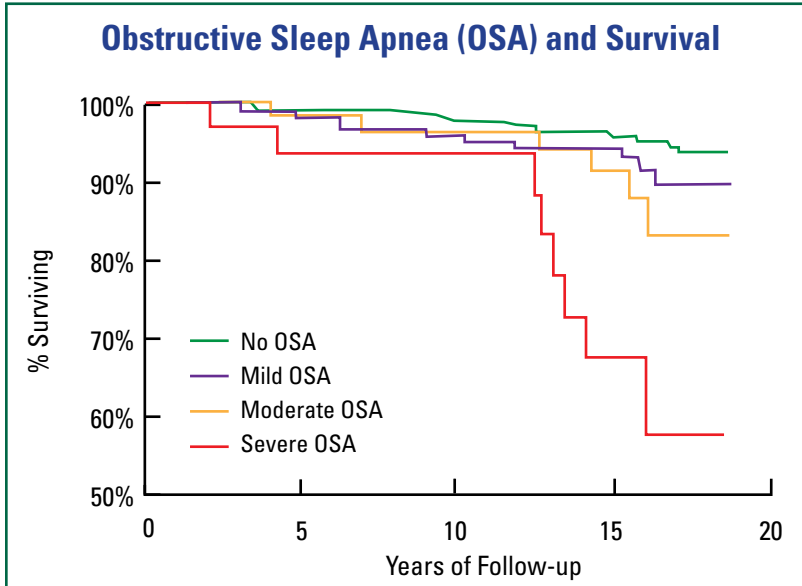
There are two types of Sleep Apnea: Central Sleep Apnea and Obstructive Sleep Apnea.

Obstructive Sleep Apnea (OSA) affects 20-30 percent of men and 10-15 percent of women, with an increase in prevalence thought to be related to rising obesity rates in America. OSA occurs when there is a collapse and closure of your airway and you momentarily stop breathing.

Central Sleep Apnea (CSA) is less common and occurs because you stop trying to breathe. CSA is typically related to a medical condition such as congestive heart failure, but also can be related to the use of pain medications, or being at high altitude. It is possible to have both central and obstructive Sleep Apnea.

Why is it Important to Treat Sleep Apnea?

Sleep apnea, if left untreated, is associated with a higher rate of death over time.



Source: http://healthysleep.med.harvard.edu/_i/289.jpg

Medical Conditions Associated with Sleep Apnea Include:

- Heart disease
- High blood pressure
- Irregular heart rhythm
- Stroke
- Diabetes
- Thyroid disease

Symptoms Associated with Sleep Apnea Include:

- Daytime sleepiness and drowsy driving
- Irritability
- Depression/anxiety
- Memory/concentration issues
- Morning headaches
- Acid reflux
- Erectile dysfunction
- Frequent nighttime urination
- Poor job performance

Using your PAP device as prescribed can improve sleep quality, reduce fatigue, enhance mental focus, and decrease your risk of heart-related conditions.

How Does PAP Therapy Benefit Me?

Positive airway pressure (PAP) therapy provides pressurized air through a mask to help keep your airway open and keep you breathing.

Most Common PAP Devices

- **CPAP:** Continuous positive airway pressure is the most common treatment and provides a constant pressure throughout the night.
- **Auto-PAP:** Automatic positive airway pressure assesses your airflow and breathing, and adjusts your pressure automatically.
- **BiPAP:** Bi-level positive airway pressure provides a higher pressure when you inhale and a lower pressure when you exhale. This may be prescribed when CPAP is not well tolerated or low oxygen levels persist at night despite the use of CPAP.

What type of PAP device do you have? _____

What is/are your prescribed pressure(s)? _____



Normal



Apnea



CPAP Mask



What Should I Expect When Starting PAP Therapy?

It will take some time to adjust to sleeping with PAP therapy. Most people adjust over the course of a few weeks to a few months. It is important to understand that this is a lifestyle change and that becoming accustomed to PAP therapy is as much a mental shift as it is a physical adjustment. Reminding yourself of why treatment is so important can help motivate you to be compliant with therapy. There also are many tips and tricks included in this guide to help with the most common issues you may face when starting PAP therapy.

What type of mask do you have?

Masks

There are three main types of masks available.

- **Nasal pillows/pieces:** Sit underneath or just outside the openings of the nose. This is the lightest, least invasive mask, and it is a good option if you have issues with claustrophobia. This mask may leak more at higher pressures, and the headgear is not as adjustable. You may need a chin strap with this mask if you open your mouth when sleeping.
- **Nasal mask:** Covers the nose and typically uses a four-point headgear. This is a good option if it is difficult for you to tolerate a mask over your nose and mouth. This mask can be difficult to tolerate if you experience significant nasal congestion. You may need a chin strap if you open your mouth when sleeping.
- **Full-face mask:** Covers both your nose and mouth. This mask works well if you open your mouth when sleeping or have significant issues with nasal congestion. If the pressure feels too high with a nasal mask or nasal pillows, then a full-face mask can help disperse the pressure and improve comfort. It may be difficult to tolerate a full-face mask if you have issues with claustrophobia.



Nasal pillow mask



Nasal mask



Full-face mask

Mask Fit

Finding the right mask can take time. Everyone has unique facial characteristics. Nose/chin sizes, face shape and facial hair are important considerations when choosing a mask. Your mask should be comfortable and not too tight on your face. Some minor leaking through the night when changing positions is normal, but excessive leak that wakes you up should be addressed. Remember, if you are losing air pressure due to a poor mask seal, you are not getting the air pressure you need to keep your airway open. Insufficient pressure can cause your airway to collapse, leading to undertreated sleep apnea.

Dealing with Mask Leak

- Make sure your mask cushion and headgear are the correct size.
- If you have facial hair, consider shaving your face more often to reduce gaps between your skin and the mask, or try PAP beard gel to help improve the seal.
- Ensure your mask is properly placed on your face.
- Purchase or make your own cloth mask liners.
- If you are a side sleeper, consider using a PAP pillow to prevent the mask from shifting out of place.
- Some PAP machines have a “mask fit” feature you can use to check for leaks and ensure a good seal.
- If you are still having mask issues, consider a mask-fitting session with your medical equipment provider or the Sleep Center at National Jewish Health.



Skin Sensitivities

Mask liners and headgear strap covers can be helpful in reducing skin irritation and marks on your face. These can be purchased online or through your medical equipment provider. Some people make their own liners with soft cloth or fabric.

Device Pressure

The air pressure setting on your machine has been prescribed for you based on your sleep test results (much like selecting the dosing of a medication). You cannot make changes to your prescribed pressure setting; this requires a prescription from your medical provider.

If the air pressure is too forceful, try using the ramp feature on your machine. This allows you to start at a lower pressure and increase it slowly over time. Many machines also have a pressure-relief feature that decreases the pressure slightly when you are exhaling. A full-face mask may also help disperse the pressure and improve comfort.

If the air pressure is too soft, turn off your ramp and/or stop using the pressure-relief feature. You may need to talk with your health care provider about increasing your PAP pressure setting.

Aerophagia: This occurs when you swallow air that goes into your stomach and causes symptoms of bloating, abdominal discomfort and burping. Using pressure-relief settings can help. If this doesn't improve symptoms, speak to your medical provider about possibly switching to a bi-level PAP device.

Finally, your PAP pressure needs may change over time. Weight changes, medications and certain medical conditions can affect how much air pressure you need to hold your airway open when sleeping. Weight changes are likely to have the most impact on your air-pressure needs. In general, higher air pressure is needed if you gain weight. Often, if you lose weight, the air pressure can be lowered. It is important for you to see your medical provider regularly to discuss your pressure and determine if changes are needed.



Dryness

Dryness can be a major issue in the arid climate of Colorado. Nasal dryness can cause more nasal congestion, making PAP therapy harder to use. Adjusting your humidity settings and tube temperature (if applicable) on your PAP machine will help improve dryness. Using heated tubing will help increase your overall humidity and reduce moisture build-up inside the tube.

You also can try using a secondary room humidifier to increase the moisture in your room. Make sure that you clean the humidifier on a regular basis, and use distilled water. There are several over-the-counter nasal sprays and gels to help with nasal dryness. Saline-based products are safe to use. Avoid petroleum-based products, such as Vaseline or antibiotic ointment, in your nose. There are also over-the-counter mouth sprays, toothpastes and mouth washes available to improve mouth dryness.

A dry mouth in the morning is often a sign of mouth breathing, especially if you are not experiencing nasal dryness as well. If you breathe through your mouth when using a nasal mask/nasal pillows, you are losing air pressure every time you open your mouth, and may not be completely treating your apnea. Consider switching to a full-face mask or using a chin strap.



Nasal/Sinus Congestion

Nasal and sinus congestion can be a big hindrance to using PAP therapy. If you have nasal congestion, you may find it very challenging to tolerate nasal pillows or a nasal mask. Try increasing the humidity level on your PAP machine. Nasal saline rinses also are an inexpensive and effective remedy for sinus congestion. If you have ongoing congestion, talk to your medical provider about recommendations regarding antihistamines and/or prescription nasal sprays. **Avoid taking over-the-counter decongestant pills or nasal sprays if you have high blood pressure.** For congestion that persists, you may be referred to an ENT (ear, nose and throat) or allergy specialist.



Water in My Hose

As the warmed and humidified air travels through your hose, it can cool off, causing condensation and leading to water dripping onto your face. Ask your provider about getting a heated hose and adjusting the temperature to prevent water build-up. If you cannot attach a heated hose to your PAP device, using a hose cover can help keep your humidified air from cooling off. Hose covers are available online or you can make your own. Lowering the humidity level on your PAP device can help as well. You also can set your PAP machine on the floor to allow the water in your hose to drain back toward the machine instead of into your mask.



Obtrusive Tubing

Hose stands help keep the hose out of your way and are available through various online sources. Some hose stands are collapsible for easy travel. A free and easy trick to keep your hose out of the way is to hang it over your headboard. Hose clips – Velcro straps that wrap around the tube and attach to your sheets or blankets with a metal clip – are another good option to keep the tube out of your face or from pulling when you change positions in bed.



Claustrophobia and Anxiety

Feelings of claustrophobia and anxiety are a normal reaction to using PAP therapy. Remember, it takes time for most people to become accustomed to PAP therapy. The best way to get used to PAP therapy is to “practice” with the device. Using your PAP machine while you are awake and engaging in relaxing activities (reading, watching TV, meditating, etc.) can improve your comfort with the air pressure.

Trying a low-profile mask, such as a nasal mask, or nasal pillows can feel less intrusive and easier to tolerate. If you breathe through your mouth, you may consider using a chin strap with a nasal mask (instead of a larger full-face mask).

Seeking the help of a sleep psychologist to acclimate to therapy can be very beneficial if you have a history of physical, emotional or sexual abuse, or have ever had a near-drowning experience. Talk to your medical or sleep provider about a referral.



Taking Care of My PAP Device and Equipment

Cleaning and replacing your equipment on a regular basis helps prolong the life of your device and mask, as well as prevent upper respiratory infections. It is generally recommended that you clean and inspect your equipment once a week. If you are prone to nasal, sinus or lung infections, it is recommended that you clean your equipment more often.

Cleaning Your Equipment

Use a mild dish soap to clean your hose, mask and humidifier chamber every week. To disinfect your supplies, use one part white vinegar to three parts water, soak for 20 minutes, then rinse well. **Do not use harsh chemicals such as bleach, alcohol or ammonia on your equipment, as these are harmful to you and your equipment.** Let your mask air dry on a clean towel and hang your hose over your shower curtain to dry. If there is still moisture in your hose, you can hook it up to your device (without humidity) and run air through the hose to dry it out.

PAP mask wipes are available for quick cleaning of your mask. Wiping down your mask each night can help eliminate oil residue and improve the seal.

If you are immunocompromised or prone to illness, you can purchase hospital-grade PAP disinfectant solution online. An automated PAP cleaning machine/system is another option available online.



Filters

Your filter will need to be changed regularly to avoid breathing in debris from your environment. A dirty or clogged filter also can wear out the motor in your PAP machine and may affect the performance of your machine. PAP machines can have a reusable filter, a disposable filter or both. Disposable filters should be changed at least once a month, or more often if they appear dirty. Reusable filters can be hand-washed once a week and replaced every six months to a year. It is recommended that you clean or replace your filters more often if you live in a dustier environment and/or have pets or smokers in your home.



Traveling with PAP

It is important to take your PAP machine with you when you travel, so make sure to plan ahead!

Plan to take your PAP machine with you as a carry-on item when flying. You may need a note or prescription from your medical provider. PAP machines will need to go through X-ray and may need to be taken out of the case.

Purchase distilled water for your humidifier chamber. You can use bottled water for short trips.

There are battery packs, converters and adapters available for purchase online if you are traveling overseas or will be without a power source.

There also are smaller travel devices available if you travel frequently, but these are not typically covered by insurance.

Meeting Insurance Compliance Requirements

Most insurance providers require you to meet usage requirements in order to be reimbursed for your equipment.

For Medicare and Medicaid, you have a 90-day trial period after receiving your PAP device. Within the first 90 days, you must use your device a minimum of four hours per night at least 70 percent of the time in a 30-day time period (at least 21 out of 30 days). “Practicing” with your PAP device while you are awake counts toward your overall usage.

Check with your medical equipment provider about specific usage requirements for your insurance plan. Remember, PAP therapy only works if you use it. Anytime you sleep without your PAP machine, you will have pauses in your breathing. Insurance usage requirements are minimal; to improve your health, you should aim for using PAP therapy anytime you are sleeping, including naps.

How is My PAP Usage Determined?

Most PAP machines have memory cards. Your medical provider or your medical equipment company can download your usage information from the memory card using special computer software programs. Newer PAP machines have a modem which will transmit usage data every 24 hours to a secure website that can only be accessed by your medical-equipment company and medical provider. The data collected includes your usage, whether your apnea is well controlled and if your device is detecting excessive mask leak. Your sleep specialist will use this information to help manage your care.



What Happens if I Don't Meet the Compliance Requirements?

Hopefully, by attending this class, you will have excellent success with PAP! However, if you do not meet usage requirements for your insurance, the cost of your PAP device may no longer be covered. In some situations, you may have to requalify for PAP by undergoing another sleep study. After this occurs, you will restart your 90-day trial period and must meet compliance requirements in order to keep your device.

Can I Access My Data?

Yes! There are online tools to help you track your usage and evaluate your mask leak and apneic events. These programs link with your smartphone or tablet. You can set goals for yourself, access troubleshooting tips and view informational videos to help you be successful with PAP therapy. Check the user manual for your machine or ask your medical equipment provider for assistance in getting started with these programs.



Will I Ever Be Able to Come Off My PAP?

Yes, it is possible! The biggest risk factor for obstructive sleep apnea is being overweight or obese; therefore, focusing on weight loss through healthy diet and exercise can improve your sleep apnea (and numerous other medical conditions). There are many free or low-cost weight loss programs available. You may consider meeting with a registered nutritionist. National Jewish Health also has a free weight-loss support group that meets once a month. Visit njhealth.org for times and information.

Learning More

You are on your way to better sleep, more energy and numerous health benefits by treating your sleep apnea. If you would like to learn more about the effects of sleep apnea, the latest advances in PAP masks and more, attend our FREE monthly PAP Support Group meetings at National Jewish Health. Please visit “PAP Support Group” at njhealth.org for more information.

Here are some helpful websites for additional information:

National Jewish Health: njhealth.org

American Academy of Sleep Medicine Sleep Education: sleepeducation.org

National Sleep Foundation: sleepfoundation.org

American Sleep Apnea Association: sleepapnea.org

PAP Top 10 List

- 1. Know your pressure settings.**
- 2. Know how to use and change your ramp.**
- 3. Know how to change your humidity settings.**
- 4. Know what type of machine you have.**
- 5. Know phone numbers for your medical-equipment company.**
- 6. Know how to adjust the pressure relief on your device.**
- 7. Learn how to properly clean your device.**
- 8. Bring your PAP equipment to every appointment with your sleep apnea provider.**
- 9. Know how to order PAP replacement supplies.**
- 10. Remind yourself that getting used to PAP takes time. Keep at it, and ask for help if you need it.**

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