APAPReasons to Use APAP

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In a forum discussion thread, CPAPtalkers wished for a list of APAP features that they could share with their doctors. This article lists features that CPAPtalkers have discussed. It's part of a longer article, CPAP Machines, which discusses CPAP, APAP, BiPAP, selection criteria and other features. Read that article for a broader perspective.

1. An APAP machine offers a "two-fer." It can be set to a **straight CPAP** mode, giving the advantages of a constant pressure plus the other advantages of APAP (such as home titration and a range of pressures), without the disadvantages of CPAP (such as a wrong pressure setting that isn't machine reported or lack of range of pressures to meet various sleep conditions). CPAP therapy needs may differ at various stages of treatment, such as start-up or after other health changes. Some people do better on straight CPAP. Some people do better on APAP. Some people, working with their doctor, use APAP and software to confirm or find their ideal straight CPAP pressure setting.

2. In the APAP mode, the machine **automatically adjusts** pressure to meet changing pressure needs when you change positions from side to back, are in various sleep stages, are extra tired, have a blocked nose due to a cold or allergy, or have taken alcohol or sedatives. A fixed CPAP setting to handle some of these situations might be too high for comfortable continued use.

3. Without changing the comfort of the baseline lower pressure, the upper range of the APAP pressure setting will **respond to the upper range of apnea/hypopnea events** (requiring higher

pressure), potentially making APAP therapy more effective. A titrated fixed pressure that is too low may miss a sizable number of events on straight CPAP, labeling them as non-responsive, leading to poorer therapy results.

4. APAP automatically adjusts pressure if your pressure need change when you **change masks**, develop a mask leak, or experiment nightly with various mask fitting adjustments. Theoretically, pressure settings should remain the same with any mask. With APAP and software, the patient can detect and **assess the volume of mask leak** and test his/her mask adjustments under various pressures. The same holds for the patient's new mask trials.

5. Some CPAPers trying APAP machines have experienced that they need a **lower overall pressure** on APAP than their original titrated pressure. A lower pressure may be more comfortable for the patient.

6. Studies have shown that there is **better compliance** with APAP than with CPAP. Possible reasons may be more comfortable treatment from a lower pressure setting or range, and (with machine display or software) immediate feedback on treatment leading to higher levels of satisfaction and improved treatment.

7. **Self-titration**. If the patient has a smart card and optional software (or ready access to a DME for printouts) and the requisite skills, willingness, and ability (or a helper), he/she can monitor his/her pressure settings and results and find the optimal pressure setting for straight CPAP, or narrow range of settings for APAP, in consultation with the physician. Research:

American Journal of Respiratory and Critical Care Medicine, Can Patients with Obstructive Sleep Apnea Titrate Their Own Continuous Positive Airway Pressure? http://ajrccm.atsjournals.org/cgi/content/full/167/5/716 Quote:

Home self-titration of CPAP is as effective as in-laboratory manual titration in the management of patients with OSA.

Nonattended home automated continuous positive airway pressure titration: Comparison with polysomnography http://www.sleepsolutions.com/clinical_library/Unattended_auto-CPAP.pdf Quote: Nasal APAP titration in this study correctly identified residual apnea equivalent to the use of PSG. This correct identification allows the physician to accurately access the efficacy of treatment.

8. Once optimal pressure settings are found, with software the patient can **monitor** his/her progress. Software reports provide specific **data for the doctor's analysis**.

9. Use of an APAP may **reduce the need for sleep doctor visits** (and probably DME visits), if the patient is responsibly managing their own therapy and therapy is assisted by APAP capabilities and software.

10. Use of an APAP **reduces the need for subsequent expensive sleep tests** since the patient is auto-titrating. Working with a doctor and periodically using a pulse oximeter (borrowed, rented, or purchased), the patient can test for oxygen levels at home with the report interpreted by the doctor.

11. Lower APAP pressure settings may do a better job of reducing or eliminating aerophagia (swallowing air) than higher CPAP pressure settings. Others find that aerophagia is reduced by using CPAP rather than APAP, or by using BiPAP.

12. Some of the Respironics CPAP and APAP machines have **exhalation relief**, called C-Flex, for patient comfort; if more comfortable, it may result in better compliance. (The current ResMed machine does not have EPR exhalation relief in the APAP mode.) CFlex provides some degree of exhalation relief at a much

lower cost than a BiPAP machine, although a BiPAP provides a greater degree of relief for those who require it.

APAP versus CPAP Research

Google APAP vs. CPAP studies. A few research articles:

http://thorax.bmjjournals.com/cgi/content/full/53/suppl_3/S49

http://64.233.179.104/search?q=cache:ijsjkxNCO1IJ:www.aasmnet.org/PDF/autotitratingreview.pdf+apap+vs+cpap+studies&hl=en

CPAP, BIPAP and APAP - Which Therapy Should You Use?

By Amy Korn-Reavis

You have been diagnosed with obstructive sleep apnea or OSA and then they hit you with a bunch of words you have never heard before. They start talking about machines and mask and humidity. You are told this is long term therapy. What they do not explain is what the machine does, what types of therapy are you eligible for and what will be the best type of therapy for you.

- CPAP stands for continuous positive airway pressure. It is the most common therapy used for the treatment of OSA. It is one continuous pressure that supports

the airway. This pressure was determined during the second sleep study, called the titration study. On some occasions the titration is able to be done on the same night as the diagnostic study. During the titration the technician will slowly increase the pressure until the breathing issues, snoring and airway resistance is eliminated or reduced to within normal levels. In order for the insurance company to pay for the machine you must have at least 5 respiratory events an hour with some type of co-morbitity such as hypertension, or excessive daytime sleepiness. Once the respiratory events increases to 15 events or higher a co-morbidity is no longer needed.

- Bilevel or BIPAP therapy is similar to CPAP however, instead of one continuous pressure there are two pressures. The lower pressure is the EPAP or expiratory pressure is increased to eliminate obstructions. The higher pressure called IPAP or inspiratory pressure is adjusted to eliminate snoring, upper airway resistance and partial closing of the airway. This therapy is also used to help people who can not tolerate CPAP therapy. Patients who can not tolerate the pressure they need or who need high pressures this can allow the use of a more comfortable lower pressure. The change in pressure also assists some people to feel more comfortable or natural. In order for insurance to pay for this therapy the technician or the doctor must document that CPAP was used unsuccessfully and that Bilevel therapy is the best alternative.
- APAP or AutoPAP is a self titrating therapy that is used for people who may need higher pressures part of the night such as when they are in REM, the stage of sleep where they dream or when they sleep on their back. This allows the pressure to remain low until the higher pressure is needed. This therapy is also used when the patient does not wish to come back for the second sleep study. Many insurance companies do not wish to pay for Autopap because it is more expensive and it is not set to specific settings.
- ASV, AutoSV, or BIPAP ST all of these are similar. They have an inspiratory pressure and an expiratory pressure the difference is they have a rate as well. This particular therapy was designed for people with central apnea. Central apnea is when the brain does not tell the body to breathe. The Bilevel therapy allows the machine to give a breath and the back up rate allows the machine to give the breaths when it does not sense a breath after a certain period of time. These machines are only ordered when there are more central apneas then obstructive apnea. Insurances pay differently for this therapy since it needs closer follow up by the doctor and the durable medical equipment company that sets it up.
- Oxygen can be ordered for some patients. It can be added to the therapies described above or be given alone. Oxygen is prescribed when the level of oxygen in the blood is lower then 89% for a minimum of 5 minutes without an associated respiratory event. This means that there is not an obstructive apnea or hypopnea causing the decrease in oxygen.

Therapy for breathing disorders can be complicated. It is best to talk to your doctor and your technicians. The more information you have about the therapy and the options available the more likely that you will be successful. It is also important to understand your insurance policy's durable medical equipment reimbursement as this can have a high initial

cost. If you work with your team you should have a successful experience and start to feel better rested and healthier in no time.

Amy Korn-Reavis, RRT, RPSGT has been in the respiratory field caring for people with breathing problems for over twenty years. Her current work is focusing on sleep coaching and how to help the community feel better by sleeping better. She is the manager of a sleep lab and teaches at the local community college. Her commitment to the community and the education of healthy sleep has led her to start the A.W.A.K.E. Orlando group. You can follow her at http://www.bettersleepcoach.com, on twitter @amykr, on facebook at http://www.facebook.com/amy.kornreavis or email her with your questions about sleep, snoring or CPAP therapy at bettersleepcoach@gmail.com.

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