

CPAP vs APAP

By

Krystle Minkoff, RPSGT, RST



CPAP opening the airway



A standard nasal pillows CPAP mask

As we delve into the specifics of PAP (positive airway pressure) treatments for OSAS, this article begs to relay the differences in efficacy of CPAP (continuous positive airway pressure) vs. APAP (automatic positive airway pressure).

We shall begin with a subtle review of sleep apnea. Sleep apnea is a condition where there is an obstruction to the flow of air (and oxygen) during sleep, resulting in poor night time sleep and consequent daytime sleepiness. Should sleep apnea remain uncontrolled, this may contribute to elevated blood pressure, and an increased risk of stroke and heart attack.

The treatment of choice for OSAS has primarily and historically been CPAP (continuous positive airway pressure). CPAP is the only 100% effective therapy in treating OSAS. We shall attempt to make comparisons to investigate the differences, pros & cons, and efficacy of treatment between CPAP vs. APAP.

CPAP devices are titrated to a single set pressure setting by a sleep specialist. The titration study is conducted after a traditional in-lab polysomnogram test and is intended to solicit the exact pressure setting needed to alleviate or eliminate the majority, if not all apnea events during the night.

Contrary to the delivery of a single set pressure, APAP machines have a complex algorithm that detects on a breath-by-breath basis what pressure the patient needs at that and adjust accordingly. In essence, the APAP device finds the ideal pressure for any given moment.

It could be argued that one of the “cons” of CPAP that the single pressure may be cumbersome to tolerate (especially at higher settings), and doesn't adjust to varying pressure needs throughout the night. More and more frequently APAP devices are being prescribed in lieu of CPAP devices because of their versatility and ability to adapt to patient needs over the course of the night.

While APAP machines are costlier, APAPs can also be set to a single pressure. If for some reason APAP therapy isn't working well for the patient, they wouldn't need to get a different machine. APAPs can be set to a straight CPAP mode. CPAP devices on the other hand are unable to be adjusted to have multiple pressure settings.

APAP machines may be better intended for those that toss and turn during the night. Due to gravity, when you are supine you will have the most number of respiratory events in this position vs. being lateral or prone. This being said, the APAP automatically adjusts the pressure upward when severe events are detected and lower accordingly after positional and respiratory changes are apparent.

CPAP machines do not allow for physical changes, such as weight loss. It is recommended that if you have a 10% increase or decrease in body weight that the subject should undergo another evaluation to determine if a pressure increase or decrease is warranted. APAP devices can help eliminate the need for expensive in-lab sleep tests.