



ProofLink™ Update

Bench Testing of Auto-Adjusting Positive Airway Pressure Devices

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◆ **Find This Study**

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◆ **The Study**

The study included bench testing of five auto-adjusting positive airway pressure devices. All devices were subjected to the same testing model which was designed to mimic a patient's upper airway along with airway resistance that may be encountered during a sleep apnea event.

All products were subjected to the same testing protocol. Each device had their response of the events recorded, analyzed and compared. The events created by the authors included: normal airflow, hypopnea, obstructive event, flow limitation, simulated snoring, central apnea and mask leaks.

◆ **The Results**

◆ The following five devices were evaluated:

- GK 418P by Mallinckrodt, Autoset® T by ResMed, REMstar® Auto by Respironics, PV 10i by Breas Medical, and SomnoSmart® by Weinmann.

◆ The REMstar Auto was noted to have the following findings:

- Treated apneas by gradually increasing the pressure
- Recognized and eliminated hypopneas
- Totally eliminated all snoring events

◆ Compensated for mask leaks

◆ **Note**

There were several limitations listed in the study:

- ◆ The authors sited the model used to simulate upper airway activity and drive effort did not account for variations in the upper airway which may be seen with Sleep Disordered Breathing.
- ◆ Flow limitation was based on a small change in tidal volume where sleep labs may use peak flow amplitude or inspiratory flow patterns to identify flow limitation.

Bottom Line

The study showed that all tested devices were able to detect and overcome apneic events through different methods and algorithms. The REMstar Auto was identified as having a good response to identification and treatment of apneas, eliminated hypopneas, totally eliminated snoring events and appropriately compensated for mask leaks.