BMC

Why choose the G3 A20?

In 2025, Kernel Biomedical conducted an independent bench study evaluating six leading APAP devices under identical simulated conditions.

The study assessed:

- Event detection accuracy
- Pressure response
- Leak compensation
- Data reporting reliability

The BMC G3 A20 consistently demonstrated precise event detection and smooth, stable pressure control, ensuring that clinicians can be confident in the new algorithm's ability to deliver effective, safe therapy.

Key highlights from the study*

Accurate detection and correction of obstructive events

- Correctly identified simulated obstructive apneas and hypopneas with no false positives.
- Delivered prompt and stable pressure adjustments to correct events effectively.
- Demonstrated a smooth return to baseline pressure, reducing unnecessary higher pressure exposure.
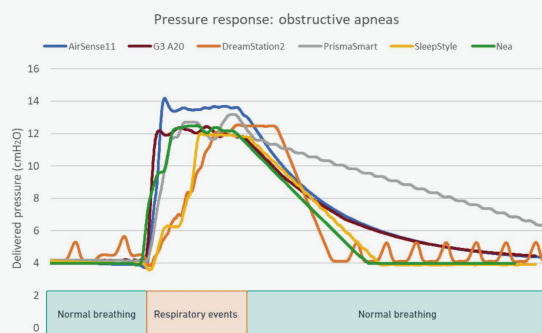

Pressure response to obstructive apneas
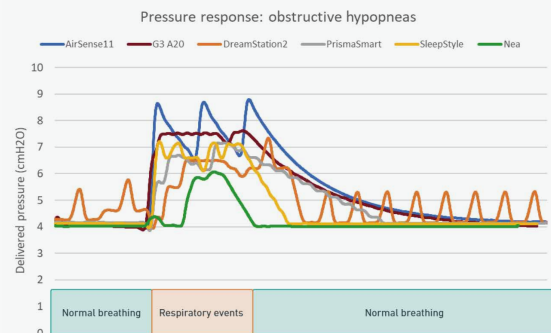
Pressure response to obstructive hypopneas

Safety in central event management

- 100% accurate identification of simulated central apneas, central hypopneas, and Cheyne-Stokes breathing.

- Unlike some devices, the G3 A20 did not unnecessarily increase pressure during central events, maintaining low pressure, a key safety feature that preserves stability and minimizes unnecessary high-pressure swings. Thus helping prevent treatment-emergent complications.

Pressure response to central apneas

Pressure response to central hypopneas

Pressure response to Cheyne-Stokes breathing
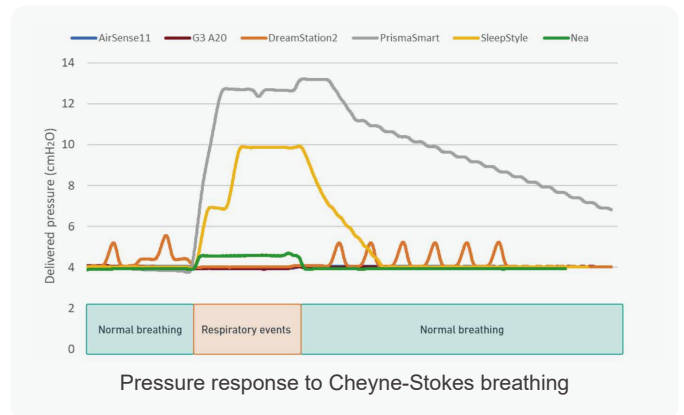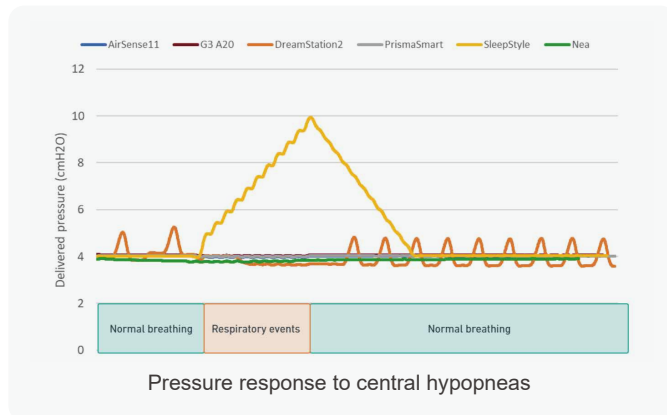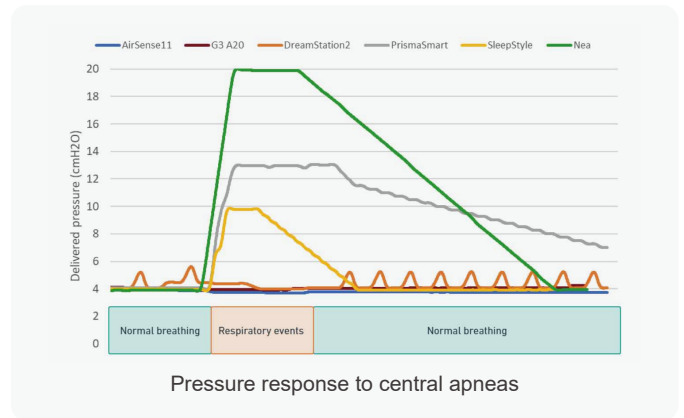
Accurate and reliable data reporting for clinicians

- Perfect agreement between estimated and actual AHI values, allowing clinician confidence in therapy data.

- Robust leak estimation and compensation ensuring consistent algorithm performance, even under challenging leak conditions.

Conclusion: An algorithm designed with patient safety in mind

The independent bench test confirms that the BMC G3 A20 delivers accurate event detection and reliable therapy performance. By avoiding inappropriate pressure increases during central events and maintaining smooth, controlled transitions, the G3 A20 algorithm demonstrates a high level of safety and precision under simulated test conditions.

*Source: Data on file. Bench testing performed by KerNel Biomedical, Rouen, France (2025).
Evaluation compared APAP devices and assessed their responsiveness to simulated sleep events on a test bench.