Closing the Gap in Home Sleep Testing

Unlocking diagnostic confidence in home sleep testing through sleep staging and arousal detection with Nox BodySleep™

Home sleep testing expands access to sleep studies but has important limitations. Without EEG, conventional home sleep testing cannot detect sleep stages or arousals, both of which are critical for diagnostic confidence, treatment planning, and accurate AHI scoring.

This gap particularly impacts women, non-obese individuals, and patients with comorbidities (including Diabetes Mellitus, Atrial Fibrillation, Congestive Heart Failure, and more) who often experience arousal-based hypopneas that home sleep tests systematically underdetect. These patients face increased risk of false negatives, underestimated OSA severity, and delayed treatment.

Risk Groups for HSAT Underdiagnosis

Women
Arousal-based hypopneas

Non-obese
Atypical OSA presentation

Patients suffering from comorbidities (incl. DM, AF, CHF)
Atypical OSA presentation and arousal-based hypopneas

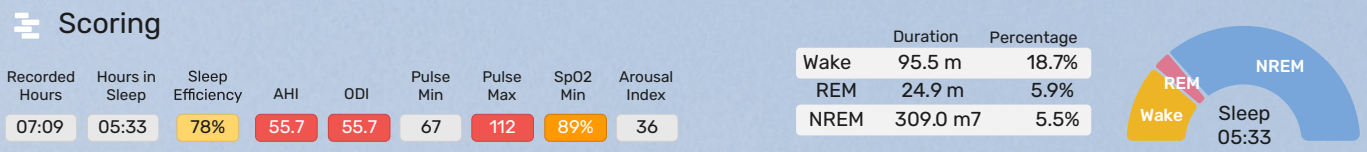
Outcome Risk for Conventional HSAT

- **False Negatives**
- **Underestimated Severity**
- **Delayed Treatment**

To address this gap, Nox Medical developed Nox BodySleep™ 2.0, part of the DeepRESP medical device available through the Nox Connect platform, bringing AI-powered sleep staging and arousal detection to home testing. No EEG is required.

The Science Behind Nox BodySleep

Using continuously calibrated respiratory inductance plethysmography (RIP) belts, the Nox T3s™ home sleep testing system captures high-fidelity respiratory signals that reflect physiological changes in breathing across sleep states and arousals. Unlike proxy measures, these signals provide a direct window into how the body regulates breathing during REM, NREM, and wakefulness, as well as how arousals alter respiratory control.



Nox developed a deep learning model that was validated for the FDA 510(k) clearance on a large and diverse dataset of close to 3,500 sleep studies[1]. Within this dataset, more than 1,200 in-lab PSG studies with consistently scored sleep stages and arousals were used to rigorously validate Nox BodySleep's performance. Results from this validation were published in Sleep and Breathing (2025), showing agreement with gold-standard polysomnography comparable to inter-scorer variability among human experts. The model achieved intraclass correlation coefficients of 0.91 for total sleep time and 0.74 for arousal index, underscoring its strong reliability for clinical use.

1 FDA cleared software medical device DeepRESP K241960

DeepRESP helps ensure more patients receive the correct sleep apnea severity classification from a home sleep apnea test, improving accuracy for both mild (AHI ≥ 5) and moderate-to-severe (AHI ≥ 15) cases.

	Sensitivity % (PPA)	Specificity % (NPA)	Overall Accuracy & (OPA)
Mild OSA (AHI ≥ 5)	93.1 /Δ 10.7	81.1 /Δ 24.4	92.5 /Δ 11.4
Moderate-to-Severe OSA (AHI ≥ 15)	82.1 /Δ 21.6	92.3 /Δ 3.1	84.7 /Δ 16.8

Internal validation data available upon request

Table: Overall performance classification of DeepRESP and the delta increase in performance vs HSAT.

The Clinical Impact of Nox BodySleep

By accurately identifying sleep stages and arousals without EEG, Nox BodySleep 2.0 closes a long-standing gap in home sleep testing. With more accurate AHI classification and conclusive results on the first try, BodySleep™ 2.0 empowers clinicians to deliver timely, confident diagnoses — expanding reliable access to OSA testing for more diverse patient populations.

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