

ResMed

nox medical



Nox T3s Polygraph with sleep state indicator

Portable sleep recorder with Nox BodySleep functionality,
a highly accurate sleep states indicator

Why using Nox T3s?



Ease-of-use

Thanks to its responsive user interface and updated design, the **Nox T3s is easy to hook up and manage** during home sleep testing.

Improved user-friendliness means **patients can perform setup themselves** and quickly understand the different features of the device, **reducing training time**.



Accurate medicine

The Nox T3s records high quality signals, such as **accurate back-up flow signals**, based on calibrated RIP (Respiratory Inductance Plethysmography)¹ technology and better snoring signals through a **digital microphone**, providing an accurate scoring and reliable diagnosis.

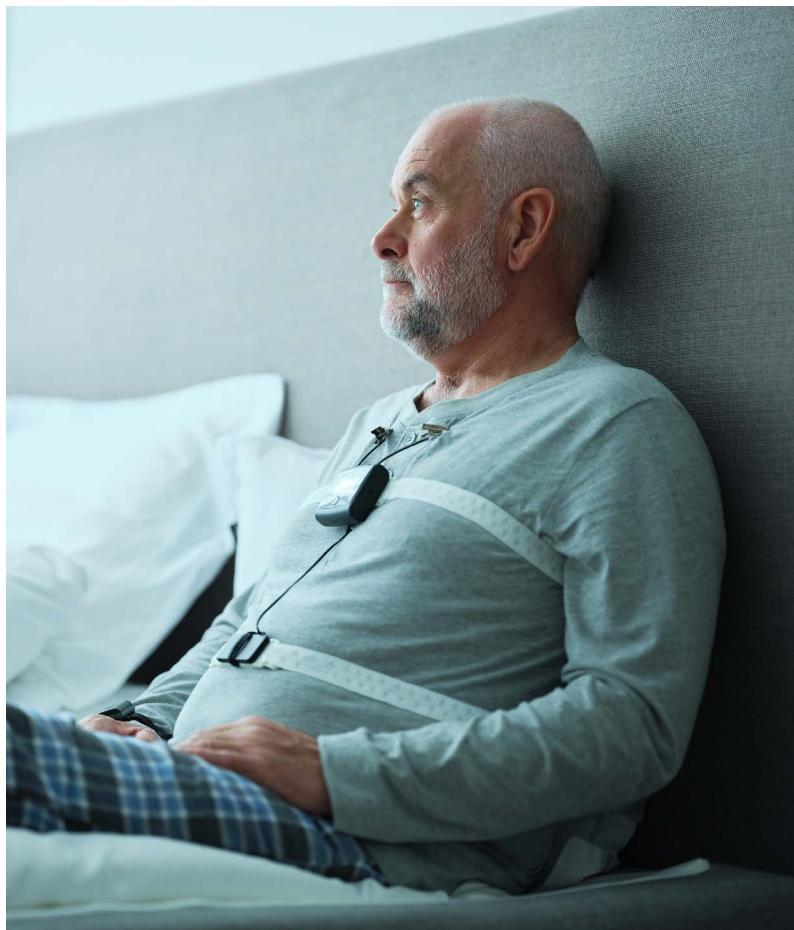
To improve patient outcomes and add value to each home sleep test, Nox offers an advanced functionality, **Nox BodySleep**, based on the detection of states of REM sleep, NREM sleep and wakefulness.



Efficiency

Equipped with the latest **Bluetooth 5.0 Low Energy** technology, Nox T3s allows a more stable connection thanks to improved power consumption.

Better reliability from USB-C connectivity improves **download speed and turnaround time**. The Nox T3s high-resolution RIP technology pairs with Noxturnal software to give **better quality flow signals for more efficient diagnostics**.



Highly accurate sleep state indicator with Nox BodySleep²

The Nox BodySleep **does not require traditional EEG, EOG and EMG signals** typically used to determine changes in brain state during sleep stages. Instead, **the algorithm interprets the physiological changes that coincide with changes** in the brain, measured with Nox RIP technology and actigraphy.

Nox BodySleep functionality:



Estimates the states of **REM sleep, NREM sleep and wakefulness**.

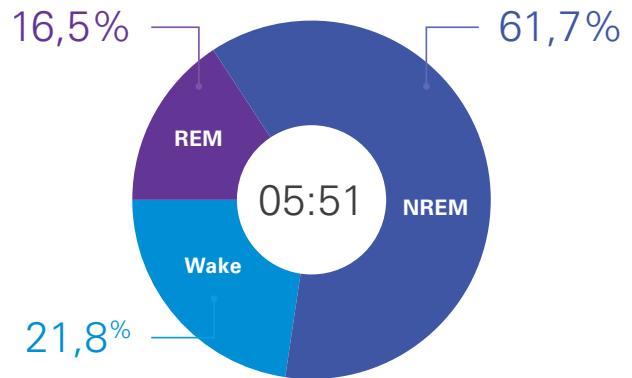


Is based on extracting information from the **Nox RIP belts in the Nox A1 PSG studies²**.



Provides a **more efficient analysis of Sleep Disordered Breathing** for accurate diagnostics.

Sleep parameters



Total duration of sleep (REM, NREM sleep and wakefulness)

Percentage of sleep considered effective (REM and NREM sleep) over an entire night

How does it work?

Nox BodySleep is **capable of differentiating between NREM sleep, REM sleep and Wake** with the use of the Nox RIP belt, which is extremely sensitive to respiratory movements. Thanks to the Nox RIP belt, brain state changes affecting respiratory function can be detected and thus **the sleep phase recognized based on physiological measurements**.

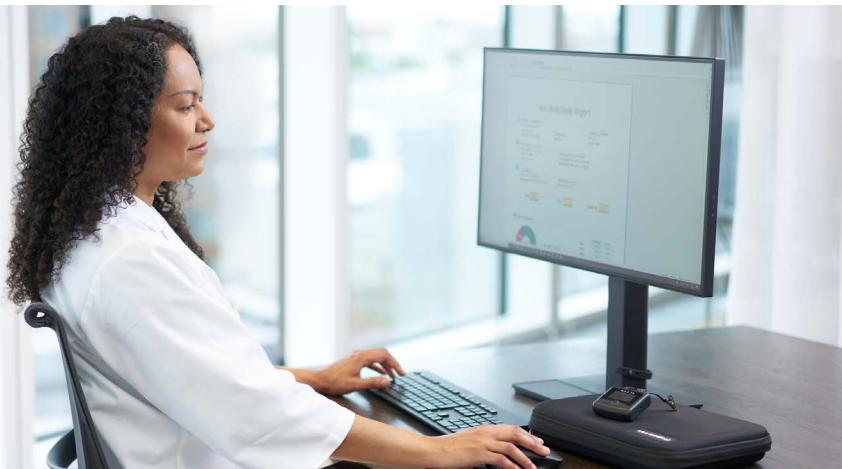
During NREM sleep, the autonomic system remains fairly stable and skeletal respiratory muscles active. As a result, **stable respiratory function is detected** as "synchronous" between the two Nox RIP belts, one of which fits on the abdomen and the other on the chest. The difference in the Nox RIP flow signal and estimated thoracic volume can also be used to determinate **brain-related respiratory change**.

During the brain's transition to REM sleep, there is a reduction in skeletal muscle tone, as well as an increased variability in respiratory rate **measurable with the two Nox RIP belts**. Due to preserved diaphragmatic activity, the relative "asynchrony" between the active abdomen driven to breathe and the inactive chest, **are detectable**.

Finally, to differentiate REM sleep from Wake, the accelerometry data, combined with Nox RIP belt measurements, **ensures a more accurate prediction of these two distinct brain states**.

Effective management of patient data with Noxturnal 6

Noxturnal has been modernized with an interface designed to better adapt to each clinician's specific requirements and allow **even more effective management of patient data**.



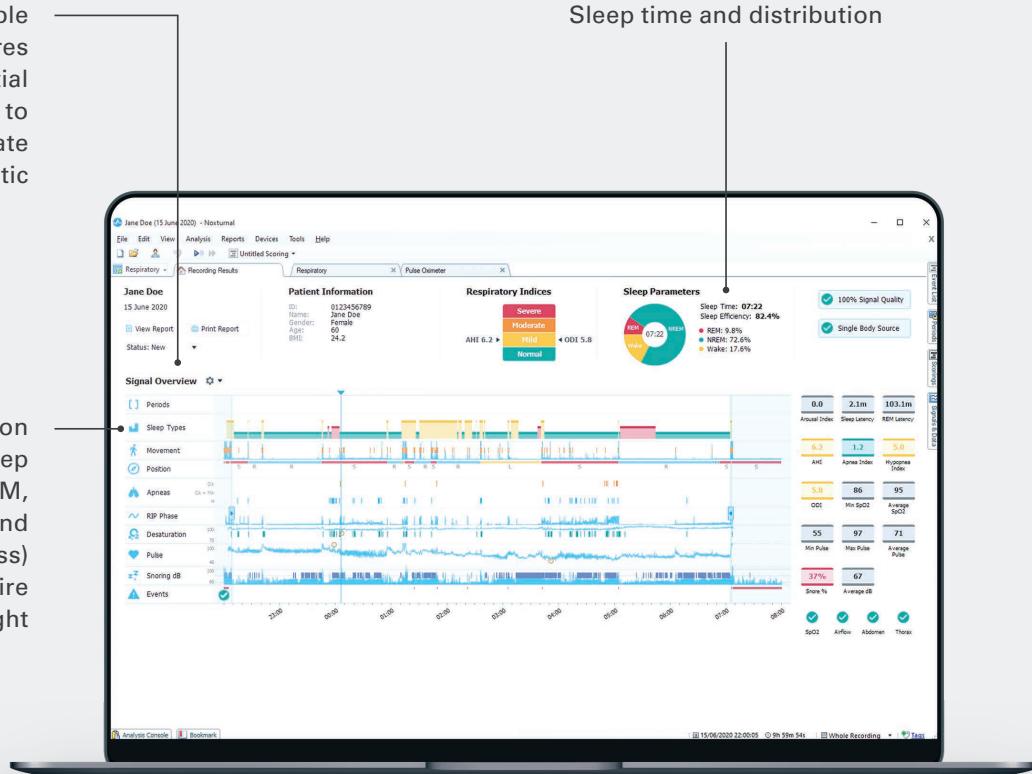
On top of those features which make Noxturnal software powerful and user-friendly - like manual scoring, customized reports and data exports - software updates offer improved intuition and a variety of advanced functionalities:

- **Nox BodySleep analysis** improving AHI accuracy².
- **PLM analysis** updated for more precise diagnostics².
- **Recording results overview** designed to provide workflow efficiency.
- **Report parameters calculations** giving the physician more data depth and report customization flexibility.

Customizable layout features the essential signals to give accurate diagnostic

Sleep time and distribution

Visualization of the sleep states (REM, NREM sleep and wakefulness) over an entire night



Improved design for hygiene



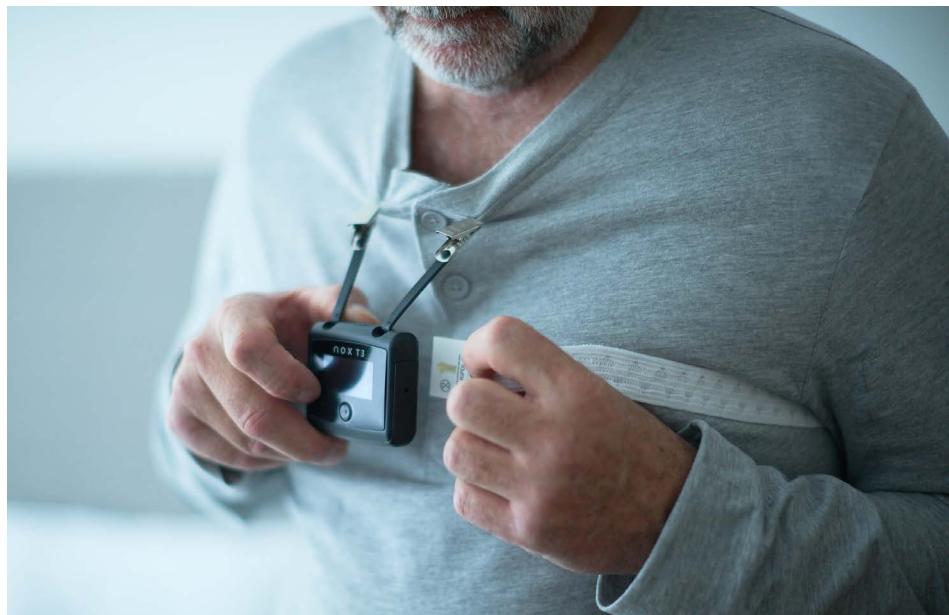
↑ Carry case

Nox T3s can be **easily transported** and stored in a **carry case** designed for easier cleaning and hygiene processes. Its **internal separator** keeps consumables from contaminating the whole carry case.



↓ Nox RIP belts

Nox RIP Belts were developed **to ensure accurate respiratory signal detection**. The belts are **for single patient use only** and are intended to be worn over clothing such as T-shirts or pyjamas and are thus not in contact with the patient's skin. As an additional hygiene failsafe, **Nox RIP belts can provide a back-up signal** for the nasal flow.



Clips

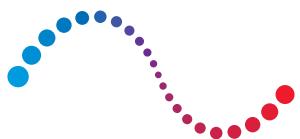


Designed with plastic clips that are **easier to maintain and more durable**. Plus, the loops on top of the Nox T3s are larger, **allowing easy cleaning**.



← Cannula and filters

The Nox cannula is **for single patient use only** and has a built-in **hydrophobic filter** (0.45µm filtering capability) **to protect from moisture**.



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Specifications

Device

Signal Specifications:

Available Signals	Thorax and abdomen RIP, Nasal pressure/Mask pressure, Snore signal, Audio and snoring channel, 2 bipolar channels (PLM or EKG or EMG or EEG), Position, Activity, Light, SpO ₂ , Pulse, Plethysmography
Bipolar Channels	Touch-proof 1 mm keyhole connector, ±1024 mVp-p input range AC, <3 µVrms noise
Flow/Pressure Signal	± 100 cmH ₂ O pressure input range, DC-80Hz, 200 Hz sampling frequency, <1 mmH ₂ O noise
Activity/Position Signals	Internal 3 axis, ±2 g
Microphone	Internal 3.5 kHz bandwidth, 8000Hz sample rate, 24-bit ADC
Wireless Interface	Bluetooth® V5.0 Low Energy wireless interface for external devices

Performance Specifications:

Storage Capacity	4 GB
Recording Time	24 hours with 1xAA Battery (Lithium battery)
PC Communications	USB 2.0 hi-speed

Physical Specifications:

Power Source	One 1.5V AA battery during recording; Host PC USB during data download
Battery Type	Alkaline primary, Lithium primary, nickel-metal hydride rechargeable (NiMH)
Battery Cover	Tamper proof and locked
Device Dimensions	68 mm W x 62 mm H x 26 mm D
Weight	65 grams ± 5 without battery
Display	Type OLED—Dimensions 19 x 35 mm resolution 128 x 64 dots
USB 2.0 Connection	USB-C

Software

Minimum PC Requirements:

Operating System	Windows® 8 and higher
Processor	X64 based Intel or AMD, 1.7 GHz or faster
Memory	2 GB RAM, 4 GB of free disk space
Resolution	1024 x 768 or higher

Please refer to the user guide for relevant information related to any warnings and precautions to be considered before and during use of the product.

1 Dr. Jón S. Ágústsson and Birkir S. Sigfusson, "Calibrated RIP Compared to Pneumotach - Nox White Paper", December 2015.

2 Hanna Ragnarsdóttir, Heiðar Már Þráinsson, Eysteinn Finnsson, Eysteinn Gunnlaugsson, Sigurður Ægir Jónsson, Jón Skírnir Ágústsson, Halla Helgadóttir "BodySleep: Estimating sleep states from respiration and body movements", Poster Presented at World Sleep 2019, Vancouver.