Measuring FeNO with the NObreath®

Methods of Measuring FeNO[1]

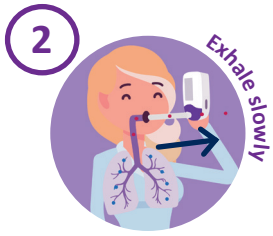
In 2005, the American Thoracic Society (ATS) and European Respiratory Society (ERS), released standardised procedures for measuring Fractional exhaled Nitric Oxide (FeNO).

What do the guidelines say about ambient NO?[1]

While the guidelines acknowledge conflicting evidence regarding whether ambient Nitric Oxide (NO) affects FeNO results, they emphasise that FeNO devices should ensure environmental NO does not influence the measurement.

How does the NObreath® address this?

The NObreath® uses a sampling method, effectively omitting the initial spike caused by ambient NO, ensuring that the FeNO reading accurately reflects lower airway NO.



NObreath® TrueFlo™ technology[1]

TrueFlo™ technology refers to the precise control and measurement techniques used during FeNO testing to ensure accurate, repeatable, and clinically meaningful readings that meet the ATS/ERS recommendations for standardised procedure.

1. Controlled exhalation flow

ATS/ERS guidelines recommend a standardised exhalation flow rate to ensure consistent and comparable FeNO measurements.
The NObreath® maintains this controlled flow using precise engineering, which ensures repeatable readings across tests.
With multiple flow incentives built into the device to ensure exhalation at 50mls per second.

2. Preventing NO contamination

During FeNO testing, the soft palate (velum) must close to prevent nasal NO from affecting results. The guidelines recommend techniques to ensure the measurement reflects lower airway NO.
NObreath® mouthpieces incorporate a built-in valve that provides the correct pressure to ensure velum closure during exhalation, in line with guideline recommendations.

3. Measuring the exhaled nitric oxide plateau

FeNO values should be recorded during the stable plateau phase of exhalation to capture steady NO levels.
The NObreath® omits the first few seconds of exhaled breath, ensuring only the plateau phase of the breath is measured.
With the environmental NO influence removed the NObreath® falls in the line with the ATS/ERS standard.

4. Managing ambient NO

Whilst the guidelines recognise conflicting evidence regarding the effect of ambient NO on FeNO results, they highlight the importance of managing environmental NO to ensure reliable readings.
The NObreath® sampling and flow control technology effectively minimises ambient NO influence, supporting highly accurate FeNO measurements even in variable environments.

How effective is the NObreath® TrueFlo™ technology at measuring FeNO?[2]

The NObreath® has been designed with accuracy and repeatability as central goals. The device has undergone rigorous clearance and registration processes, including CE mark, UKCA, and FDA clearance, and has been extensively validated in clinical research. Studies demonstrate excellent repeatability, reproducibility, and comparability of measurements.
The NObreath® electrochemical sensor has been validated against chemiluminescence technology, showing strong correlation between the two measurement approaches[2]. This confirms that NObreath® provides reliable and clinically meaningful FeNO readings.
With over 15 years of clinical use worldwide, NObreath® has featured in numerous studies, proving its accuracy, consistency, and reliability across diverse patient populations. Its modern, adapted approach to FeNO measurement pioneers portable, hand-held technology without compromising on clinical validity.

NObreath® as accurate as gold standard technology, just simpler.

References:

1. American Thoracic Society and European Respiratory Society. ATS/ERS recommendations for standardized procedures for the online and offline measurement of exhaled lower respiratory nitric oxide and nasal nitric oxide. American Journal of Respiratory and Critical Care Medicine. 2005;171(8):912-930.

2. Antus B, Horvath I, and Barta I. Assessment of exhaled nitric oxide by a new hand-held device. Respiratory Medicine. 2010;104(9):1377-1380.

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Issue 5 - March 2026, Part No: MKT552
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ISO 13485 Quality Management for Medical Devices CERTIFIED
MD 502905