



HypAir FeNO: an electrochemical sensor

To the Editor:

We would like to congratulate *ALCÁZAR-NAVARRETE et al.* [1] on their paper which was published in a recent issue of the *European Respiratory Journal*. The authors observed that persistent exhaled nitric oxide fraction (F_{eNO}) values ≥ 20 ppb in clinically stable chronic obstructive pulmonary disease (COPD) outpatients are associated with a significantly higher risk of acute exacerbations of COPD (AECOPD). This kind of approach would certainly have significant consequences for the follow-up of COPD patients.

Nevertheless, although the authors stated that F_{eNO} was measured with a chemiluminescence nitric oxide (NO) analyser, referring to a HypAir F_{eNO} machine (Médisoft, Sorinnes, Belgium), this device actually has electrochemical-based analysis [2].

Chemiluminescence-based analysis is considered to be the gold standard technique for measuring F_{eNO} . These analysers are fast responding, highly sensitive and specific for nitric oxide gas. However, several factors such as size, cost and frequent calibration limit their permeation into routine clinical practice. To overcome these limitations electrochemical sensors have recently been developed and incorporated into hand-held measuring devices, but hand-held devices are not interchangeable so this information needs to be considered when these devices are used either for research purposes or for clinical practice [3, 4]. The well-established chemiluminescence-based NIOX (Aerocrine, Solna, Sweden) analysers are much more commonly used and most of the other devices give similar results [5], but measurements on the HypAir F_{eNO} are 1.6 times (95% CI 1.11–2.05) higher than those obtained with the NIOX device. Therefore, a conversion factor is required if results are going to be compared with chemiluminescence devices [6] and it would be necessary if the results of the study want to be extrapolated to other centres.

A proper calibration and the possibility to show the plateau value ensure the reliability and accuracy of test results. HypAir F_{eNO} allows real-time monitoring assuring that the value of F_{eNO} has been obtained from manoeuvres with acceptability criteria. The manufacturer just recommends that the HypAir F_{eNO} should be calibrated every 6 months with a 100 ppb NO gas, there are no instructions concerning regular zero calibration checking. A reliable NO-free calibration gas is essential for NO and the current American Thoracic Society/European Respiratory Society calibration recommendations are limited to ozone-/NO₂-chemoluminescence-based analysers [6]. *LODGE et al.* [7] have developed a procedure that provides a pre-test check for the functioning of the NO scrubber in HypAir F_{eNO} , and the paper by *ALCÁZAR-NAVARRETE et al.* [1] does not report if this has been used as a routine quality control procedure.

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HypAir FeNO is an electrochemical sensor; there is no chemiluminescence NO device
<http://ow.ly/tmvX30irOO7>

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