

# At a glance - FeNO testing in asthma

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To consider how and when we use FeNO testing, we need to go to the definition of asthma. Both BTS/SIGN<sup>1</sup> and GINA<sup>2</sup> define it as a predominantly inflammatory disorder of the airways with airway hyperresponsiveness and variability in symptoms.

Nitric oxide is a gas involved in the respiratory process and is present in the atmosphere in very small amounts (parts per billion). It can be easily measured in exhaled breath using a fractional exhaled nitric oxide (FeNO) test. A raised FeNO is associated with eosinophilic inflammation of the airways, which is the characteristic inflammation of asthma. It can therefore be used as a test to support a diagnosis of asthma. The BTS/SIGN and NICE guidelines for asthma diagnosis currently make different recommendations on when FeNO should be used. PCRS has produced a guide for pragmatic interpretation of the different guidelines in clinical practice - [to view the article, scan the QR code](#).



FeNO is a simple test that most people can easily perform. It can be used with children from as young as 5 years with coaching. It forms a part of the jigsaw we need to make an accurate diagnosis of asthma. Testing and interpretation of the results should be an add-on to existing asthma training and competence.<sup>3</sup> Training modules have been developed as a part of the Accelerated Access Collaborative (AAC) project to increase the uptake of FeNO in primary care. The modules are available free of charge at <https://www.e-lfh.org.uk/programmes/feno-in-asthma/>

Outside of supporting a suspected clinical diagnosis, FeNO is a test that is useful selectively in other parts of the asthma pathway. At the time of diagnosis or at a later time, it can act as an educational tool to help patients understand and 'see' the inflammation in their airways that is associated with a diagnosis of asthma. With the right explanation delivered by a health-care professional and by showing falling FeNO levels with treatment, it also helps with the understanding of how inhaled corticosteroids treat the active inflammation to control symptoms, which in turn supports ongoing self-management. It is also a useful tool when recordings are found to be raised, despite prescribed therapy, to open a conversation about adherence.

FeNO can be useful when making decisions about escalating therapy when persistent or increasing symptoms are present but adherence to inhaled corticosteroids is not identified as a problem. If reduced FeNO levels show that the inflammation is now under control, then adding a long-acting bronchodilator may be the next step. It may also, however, highlight the need to explore an alternative diagnosis or co-morbidity.

Stepping down asthma medication is recommended by guidelines, but do we avoid this for fear of rocking the boat? When people have been asymptomatic for several months and are not approaching a period with known asthma triggers (pollen season, back to school, and winter) and are not approaching a significant life event (marriage, exams), FeNO monitoring can assure that inflammation is well controlled and give confidence to both patient and health care professional that now might be a good time to reduce anti-inflammatory medication, especially for those on moderate (>800mcg BDP equivalent) and high (>1000mcg BDP



equivalent) doses. Another test a month later to check/reassure that a reduction in medication was the right decision is also useful.

To assist with FeNO delivery in primary care, PCRS is hosting a variety of resources. These include patient information leaflets in English and seven other languages, sample business cases, and case studies. There is also guidance on the FeNO Arden's template to ensure information is coded and retrievable for audit and evaluation, and infection prevention



and control guidance. [Scan the QR code to view the new FeNO resources page.](#)

The AAC project has increased the availability of FeNO in primary care, but it is not yet available to patients consistently across the UK. PCRS supports the

move to provide locally accessible, timely testing for patients presenting with symptoms and a history in keeping with a diagnosis of asthma, and that the testing and interpretation of tests be carried out by trained staff.

[Scan the QR code to view the FeNO testing article.](#)



### References

1. British Thoracic Society, Scottish Intercollegiate Guidelines Network. British guideline on the management of asthma. 2019. Available at: <https://www.brit-thoracic.org.uk/quality-improvement/guidelines/asthma/> (accessed 2 April 2023)
2. NICE. Asthma: diagnosis, monitoring and chronic asthma NG80. 2017. Available at: <https://www.nice.org.uk/guidance/ng80> (accessed 2 April 2023)
3. Lawlor R. Primary Care Respiratory Society. Fit to Care: key knowledge skills and training for clinicians providing respiratory care. February 2022. <https://www.pcrs-uk.org/resource/fit-care> (accessed 12 April 2023)