

# NICE Clinical Guideline on Asthma Diagnosis, Monitoring and Management

# OBJECTIVE

Although asthma is a common chronic disease, there is no gold standard test to diagnose it. This is the main reason why asthma is being under- and misdiagnosed. But also therapy monitoring is often suboptimal. Poor asthma control has an impact on patients' quality of life, use of healthcare services and associated costs.



"FeNO had the best diagnostic accuracy out of all the tests that can be conducted in primary care."  $^{\rm 3}$ 

The new NICE Guideline addresses these challenges by giving recommendations for diagnosing, monitoring and managing of chronic asthma in the most clinical and cost-effective way. These recommendations are based on the consensus opinion of the guideline development expert group. Furthermore stakeholder opinions and results of the feasibility project were taken into account.

After years of collecting evidence, analyzing and discussing, this guideline calls on general practitioners, practice nurses, healthcare professionals to:

- Offer objective diagnostic tests for all patients with suspected asthma in primary care (focus: FeNO and spirometry/bronchodilator reversibility)
- Monitor at every review: Asthma control via questionnaire and the objective tests spirometry or peak flow variability
- If control is suboptimal, check adherence, inhaler technique, triggers and consider FeNO measurement to support asthma management in people using inhaled corticosteroids

"FeNO is a highly cost-effective component of the diagnostic algorithm." <sup>3</sup>

## DIAGNOSIS OF ASTHMA BASED ON NICE GUIDELINE

**Initial clinical assessment** for patients with suspected asthma, **clinical history** (asthma specific respiratory symptoms, triggers, family history of atopic disorders) **physical examination** (expiratory polyphonic wheeze and signs of other causes of respiratory symptoms)



Do not diagnose asthma based on any single test alone.



### FENO IN DIAGNOSIS

The FeNO measurement procedure is standardized by the ATS/ERS guideline.<sup>1</sup> Recommendations for FeNO interpretation are provided by the NICE guideline on asthma diagnosis, monitoring and management published in 2017, as well as the ATS clinical practice guideline from 2011.<sup>2</sup>

For interpretation of FeNO levels, the use of cut points is recommended rather than reference values. To account for age and height, lower cut points for children are defined. The following scheme shall give an overview on the cut points and interpretation notes suggested in both guidelines for asthma diagnosis.



		Eosinophilic airway inflammation unlikely. Consider alternative diagnosis. Unlikely to benefit from ICS*	Be cautious. Evaluate clinical context. Monitor via objective tests and review diagnosis after treatment.	Eosinophilic airway inflammation present. Likely to benefit from ICS
Cut points	ATS <sup>1</sup>	Adults < 25 ppb Children < 20 ppb	Adults 25 - 50 ppb Children 20 - 35 ppb	Adults > 50 ppb Children > 35 ppb
	NICE <sup>3</sup>	Adults < 25 ppb	Adults 25 - 39 ppb Children < 35 ppb	Adults > 40 ppb Children > 35 ppb

# BIOMARKER FENO - BENEFITS FOR MEDICAL CARE



### DIAGNOSIS

Recommendation of FeNO tests as part of comprehensive algorithm for diagnosis of asthma in adults, children and adolescents.



#### MANAGEMENT

FeNO measurement is a significant parameter in longterm management. Regular control helps to reduce asthma relapse after setting down ICS-therapy.



#### COST-EFFECTIVE

The health economic model in the NICE guideline concludes that FeNO testing in adults is one of the most costeffective diagnostic tools.

"FeNO offers the additional benefit of identifying patients likely to be steroid responsive."  $^{\rm 3}$ 

<sup>1</sup> ATS/ERS, 2005. Am J Respir Crit Care Med 2005;171: 912-930 <sup>2</sup> Dweik et al. Am J Respir Crit Care Med 2011;184:602-15 <sup>3</sup> NICE Guideline Asthma - diagnosis and monitoring

(November 2017, https://www.nice.org.uk/guidance/ng80/evidence/full-guideline-asthma-diagnosis-and-monitoring-pdf-4656178047)

"FeNO can be performed fairly easily in primary care and is a simple test for the patient to complete." <sup>3</sup>



