

- » FeNO test results cannot be used in isolation. Their interpretation must take into account other clinical factors and traditional measures.
- » The evidence favors the use of FeNO measurement as an adjunct to other diagnostic methods (including a structured history, clinical findings, and pulmonary function testing) when the results from these other measures are not conclusive.
- » Decisions about treatment with an inhaled corticosteroid (ICS) are not dependent on FeNO measurements, but such measurements may help direct stepwise therapeutic choices.

Summary of the Evidence

No randomized controlled trials (RCTs) could be found to address Question 2.1 (see Appendix B evidence to decision [EtD] Table I).

More than 50 studies have been conducted, and some of these studies included healthy and symptomatic individuals, smokers and nonsmokers, atopic and nonatopic individuals, and individuals with and without a prior diagnosis of asthma. The protocols for diagnostic FeNO assessments varied, and conclusions about the optimal testing protocol remain uncertain.

Based on the Expert Panel's interpretation of the literature and the systematic review report findings, the overall certainty of evidence for this recommendation is moderate. The Expert Panel considers implementation of the recommendation in a broad population to be appropriate based on the diversity of the populations included in the systematic review report. The imprecision in the studies on the utility of FeNO measurement in asthma diagnosis is notable.

Rationale and Discussion

In the Expert Panel's opinion, an additional tool to aid in diagnosing asthma could be beneficial, especially when that tool may help identify specific asthma phenotypes. The Expert Panel considered many facets of harm, risk, opportunity, and benefits in making its recommendation.

The acceptability of FeNO measurement to individuals with a potential diagnosis of asthma is likely to be high, given that the test involves minimal effort and does not incur discomfort or side effects. Publications on studies that used FeNO testing did not report any overt harms. The Expert Panel noted that most studies conducted FeNO measurements only in specialty care research settings, and few data are available on the use of FeNO measurement in primary care settings. As with many innovations, the cost of FeNO equipment and testing may limit its broader use. These barriers to broader dissemination could have a negative impact on the availability of FeNO testing and lead to less equitable care for populations with limited resources.

Questions 2.2 and 2.3

- What is the clinical utility of FeNO measurements to select medication options (including corticosteroids) for individuals ages 5 years and older?
- What is the clinical utility of FeNO measurements to monitor response to treatment in individuals ages 5 years and older?