2020 focused updates to the asthma management guidelines.

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National Asthma Education and Prevention Program (NAEPP) Coordinating Committee | National Heart, Lung, and Blood Institute (NHLBI)

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Overview

Guideline Objective

To provide focused updates of recommendations on the management of asthma

Patient Population

Adults and children with suspected or diagnosed asthma

Recommendations

Recommendation Statements

Recommendations on the Use of Fractional Exhaled Nitric Oxide (FeNO) Testing in the Diagnosis and Management of Asthma

Question 2.1: What is the diagnostic accuracy of FeNO measurement(s) for making the diagnosis of asthma in individuals ages 5 years and older?

Recommendation 1. In individuals ages 5 years and older for whom the diagnosis of asthma is uncertain using history, clinical findings, clinical course, and spirometry, including bronchodilator responsiveness testing, or in whom spirometry cannot be performed, the Expert Panel conditionally recommends the addition of FeNO measurement as an adjunct to the evaluation process. (**Conditional recommendation; Moderate certainty of evidence**)

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?

Recommendation 2. In individuals ages 5 years and older with persistent allergic asthma, for whom there is uncertainty in choosing, monitoring, or adjusting anti-inflammatory therapies based on history, clinical findings, and spirometry, the Expert Panel conditionally recommends the addition of FeNO measurement as part of an ongoing asthma monitoring and management strategy that includes frequent assessments. (**Conditional recommendation; Low certainty of evidence**)

Question 2.4: What is the clinical utility of FeNO measurements in monitoring disease activity and asthma outcomes in individuals with asthma aged 5 years and older?

Recommendation 3. In individuals ages 5 years and older with asthma, the Expert Panel recommends against the use of FeNO measurements in isolation to assess asthma control, predict future exacerbations, or assess exacerbation severity. FeNO should only be used as part of an ongoing monitoring and management strategy. (**Strong recommendation; Low certainty of evidence**)

Question 2.5: In children ages 0–4 years with recurrent wheezing, how accurate is FeNO testing in predicting the future development of asthma at ages 5 and above?

Recommendation 4. In children ages 0–4 years with recurrent wheezing, the Expert Panel recommends against FeNO measurement to predict the future development of asthma. (**Strong recommendation; Low certainty of evidence**)

Recommendations for Indoor Allergen Mitigation in Management of Asthma

Question 3.1: Among individuals with asthma, what is the effectiveness of interventions (e.g., pesticides, air filters/purifiers, mattress covers, pest control, etc.) to reduce or remove indoor inhalant allergens on asthma control, exacerbations, quality of life, and other relevant outcomes?

Recommendation 5. In individuals with asthma who do not have sensitization to specific indoor allergens or who do not have symptoms related to exposure to specific indoor allergens, the Expert Panel conditionally recommends against allergen mitigation interventions as part of routine asthma management. (**Conditional recommendation; Low certainty of evidence**)

Recommendation 6. In individuals with asthma who have symptoms related to exposure to identified indoor allergens, confirmed by history taking or allergy testing, the Expert Panel conditionally recommends a multicomponent allergen-specific mitigation intervention. (**Conditional recommendation; Low certainty of evidence**)

Recommendation 7. In individuals with asthma who have sensitization or symptoms related to exposure to pests (cockroaches and rodents), the Expert Panel conditionally recommends the use of integrated pest management alone, or as part of a multicomponent allergen-specific mitigation intervention. (**Conditional recommendation; Low certainty of evidence**)

Recommendation 8. In individuals with asthma who have sensitization or symptoms related to exposure to dust mites, the Expert Panel conditionally recommends impermeable pillow/mattress covers only as part of a multicomponent allergen mitigation intervention, not as a single-component intervention. (**Conditional recommendation; Moderate certainty of evidence**)

Recommendations for the Use of Intermittent Inhaled Corticosteroids (ICS) in the Treatment of Asthma

Question 4.1: What is the comparative effectiveness of intermittent ICS compared to no treatment, pharmacologic, or nonpharmacologic therapy in children ages 0 to 4 years with recurrent wheezing?

Recommendation 9. In children ages 0–4 years with recurrent wheezing triggered by respiratory tract infections and no wheezing between infections, the Expert Panel conditionally recommends starting a short course of daily ICS at the onset of a respiratory tract infection with as-needed short-acting beta$_2$-agonist (SABA) for quick-relief therapy compared to as-needed SABA for quick-relief therapy only. (**Conditional recommendation; High certainty of evidence**)

Question 4.2: What is the comparative effectiveness of intermittent ICS compared to ICS controller therapy in individuals ages 5 years and older with persistent asthma?

Recommendation 10. In individuals ages 12 years and older with mild persistent asthma, the Expert Panel conditionally recommends either daily low-dose ICS and as-needed SABA for quick-relief therapy or as-needed ICS and SABA used concomitantly. (**Conditional recommendation; Moderate certainty of evidence**)

Recommendation 11. In individuals ages 4 years and older with mild to moderate persistent asthma who are likely to be adherent to daily ICS treatment, the Expert Panel conditionally recommends against a short-term increase in the ICS dose for increased symptoms or decreased peak flow. (**Conditional recommendation; Low certainty of evidence**)

Question 4.3: What is the comparative effectiveness of ICS with long-acting beta$_2$-agonist (LABA) used as both controller and quick-relief therapy compared to ICS with or without LABA used as controller therapy in individuals ages 5 years and older with persistent asthma?

Recommendation 12. In individuals ages 4 years and older with moderate to severe persistent asthma, the Expert Panel recommends ICS-formoterol in a single inhaler used

as both daily controller and reliever therapy compared to either a higher-dose ICS as daily controller therapy and SABA for quick-relief therapy or the same-dose ICS-LABA as daily controller therapy and SABA for quick-relief therapy. (**Strong recommendation; High certainty of evidence for ages 12 years and older, Moderate certainty of evidence for ages 4-11 years**)

Recommendation 13. In individuals ages 12 years and older with moderate to severe persistent asthma, the Expert Panel conditionally recommends ICS-formoterol in a single inhaler used as both daily controller and reliever therapy compared to higher-dose ICS-LABA as daily controller therapy and SABA for quick-relief therapy. (**Conditional recommendation; High certainty of evidence**)

Recommendations for the Use of Long-Acting Muscarinic Antagonists (LAMAs) for Asthma

Question 5.1: What is the comparative effectiveness of LAMA compared with other controller therapy as add-on therapy to ICS in individuals ages 12 years and older with uncontrolled persistent asthma?

Question 5.2: What is the comparative effectiveness of LAMA as add-on therapy to ICS controller therapy compared with placebo or increased ICS dose in individuals ages 12 years and older with uncontrolled persistent asthma?

Recommendation 14. In individuals ages 12 years and older with uncontrolled persistent asthma, the Expert Panel conditionally recommends against adding LAMA to ICS compared to adding LABA to ICS. (**Conditional recommendation; Moderate certainty of evidence**)

Recommendation 15. If LABA is not used, in individuals ages 12 years and older with uncontrolled persistent asthma, the Expert Panel conditionally recommends adding LAMA to ICS controller therapy compared to continuing the same dose of ICS alone. (**Conditional recommendation; Moderate certainty of evidence**)

Question 5.3: What is the comparative effectiveness of LAMA as add-on therapy to ICS plus LABA compared with ICS plus LABA as controller therapy in individuals ages 12 years and older with uncontrolled persistent asthma?

Recommendation 16. In individuals ages 12 and older with uncontrolled persistent asthma, the Expert Panel conditionally recommends adding LAMA to ICS-LABA compared to continuing the same dose of ICS-LABA. (**Conditional recommendation; Moderate certainty of evidence**)

The Role of Subcutaneous & Sublingual Immunotherapy in the Treatment of Allergic Asthma

Question 6.1: What is the efficacy and safety of subcutaneous immunotherapy (SCIT)?

Recommendation 17. In individuals ages 5 years and older with mild to moderate allergic asthma, the Expert Panel conditionally recommends the use of SCIT as an adjunct treatment to standard pharmacotherapy in those individuals whose asthma is controlled at the initiation, build up, and maintenance phases of immunotherapy. (**Conditional recommendation; Moderate certainty of evidence**)

Question 6.2: What is the efficacy and safety of sublingual immunotherapy (SLIT)?

Recommendation 18. In individuals with persistent allergic asthma, the Expert Panel conditionally recommends against the use of SLIT in asthma treatment. (**Conditional recommendation; Moderate certainty of evidence**)

Recommendations for the Use of Bronchial Thermoplasty (BT) to Improve Asthma Outcomes

Question 7.1: What are the benefits and harms of using BT in addition to standard treatment for the treatment of individuals ages 18 years and older with asthma?

Recommendation 19. In individuals ages 18 years and older with persistent asthma, the Expert Panel conditionally recommends against BT. (**Conditional recommendation; Low certainty of evidence**)

Evidence Rating Scheme

Certainty of Evidence of Effects

Certainty of Evidence	Definition
High	We are very confident that the true effect lies close to that of the estimate of the effect.
Moderate	We are moderately confident in the effect estimate. The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low	Our confidence in the effect estimate is limited. The true effect may be substantially different from the estimate of the effect.
Very low	We have very little confidence in the effect estimate. The true effect is likely to be substantially different from the estimate of the effect.

Recommendation Rating Scheme

Implications of Strong and Conditional Recommendations*

Implications	Strong Recommendation	Conditional Recommendation
For individuals with asthma	Most individuals in this situation would want the recommended course of action and only a small proportion would not.	Most individuals in this situation would want the suggested course of action, but many would not.

Implications	Strong Recommendation	Conditional Recommendation
For clinicians	Most individuals should receive the intervention. Formal decision aids are not likely to be needed to help individuals make decisions consistent with their values and preferences.	Different choices will be appropriate for individuals consistent with their values and preferences. Use shared decision-making. Decision aids may be useful in helping individuals make decisions consistent with their risks, values, and preferences.
For policy makers	The recommendation can be adapted as policy or performance measure in most situations. Adherence to this recommendation according to the guideline could be used as a quality criterion or performance indicator.	Policy making will require substantial debate and involvement of various stakeholders. Performance measures should assess whether decision-making is documented.
For researchers	The recommendation is supported by credible research or other convincing judgments that make additional research unlikely to alter the recommendation. On occasion, a strong recommendation is based on low or very low certainty in the evidence. In such instances, further research may provide important information that alters the recommendations.	The recommendation is likely to be strengthened (for future updates or adaptation) by additional research. An evaluation of the conditions and criteria (and the related judgments, research evidence, and additional considerations) that determined the conditional (rather than strong) recommendation will help identify possible research gaps.

***** Strong recommendations are indicated by statements that lead with 'We recommend,' whereas conditional recommendations are indicated by statements that lead with 'We conditionally recommend.'

Related Content

Supporting Documents

- The Original Guideline is also available from the *Journal of the American Medical Association (JAMA)* and the *Journal of Allergy and Clinical Immunology*.
- Systematic Reviews:
  - The Clinical Utility of Fractional Exhaled Nitric Oxide (FeNO) in Asthma Management. Comparative Effectiveness Review; no. 197; 2017 Dec.
  - Effectiveness of Indoor Allergen Reduction in Management of Asthma. Comparative Effectiveness Review; no. 201; 2018 Feb.
  - Intermittent Inhaled Corticosteroids and Long-Acting Muscarinic Antagonists for Asthma. Comparative Effectiveness Review; no. 194; 2018 Mar.
  - The Role of Immunotherapy in the Treatment of Asthma. Comparative Effectiveness Review; no. 196; 2018 Mar.
  - Effectiveness and Safety of Bronchial Thermoplasty in Management of Asthma. Comparative Effectiveness Review; no. 202; 2017 Dec.

Implementation Tools

- Clinician's Guide; 2020 Dec.
- Clinician's At-a-Glance Guide; 2020 Dec.
- Professional Education Opportunities.

Patient Education

- Asthma Management Guidelines and Your Care; 2021 Feb.
- The Changing Role of Inhaled Corticosteroids in Asthma Management; 2020 Dec.
- Long-Acting Muscarinic Antagonists (LAMAs); 2020 Dec.
- Reducing Allergens in Your Home; 2021 Feb.

- Can Immunotherapy Help with the Treatment of Allergic Asthma?; 2020 Dec.
- What is Fractional Exhaled Nitric Oxide (FeNO) Testing?; 2020 Dec.
- Is Bronchial Thermoplasty Right for You?; 2020 Dec.
- 2020 Asthma Action Plan; 2021 Feb.

Note: This patient information is intended to help patients better understand their health and their diagnosed disorders. Patients and their representatives should still consult with a licensed health care professional for evaluation of treatment options as well as answers to their personal medical questions.

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TRUST Scorecard

Composition of Guideline Development Group (GDG)

Multidisciplinary GDG Members	**Yes**
Methodologist Involvement	**Yes**
Incorporation of Patient and Public Perspective	★★★★★

Systematic Review of Evidence

Literature Search	★★★★★
Study Selection	★★★★★
Evidence Synthesis	★★★★★

Foundations for Recommendations

Strength of Evidence Grade	★★★★★
Description of Benefits and Harms of Recommendations	★★★★★
Summary of Evidence Supporting Recommendations	★★★★★
Strength of Recommendations Rating	★★★★☆
Clear Articulation of Recommendations	★★★★★

Funding Source — **Yes**

Disclosure and Management of Financial Conflicts of Interests — ★★★★★

External Review — ★★★★☆

Updating — ★☆☆☆☆

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