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**2020 FOCUSED  
UPDATES TO THE**  
**Asthma  
Management  
Guidelines**

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December 3, 2020



National Heart, Lung,  
and Blood Institute

**2020 Focused Updates to the Asthma Management Guidelines**

A Report from the National Asthma Education and Prevention Program  
Coordinating Committee Expert Panel Working Group

[nhlbi.nih.gov/AsthmaGuidelines](https://nhlbi.nih.gov/AsthmaGuidelines)

# Presenters



Gary H. Gibbons, M.D.  
Director, NHLBI



James P. Kiley, Ph.D.  
Director of the  
Division of Lung Diseases, NHLBI



Michelle M. Cloutier, M.D.  
Chair of the NAEPCC Expert Panel  
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George A. Mensah, M.D., FACC  
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# Members of the NAEPP Expert Panel

**Michelle M. Cloutier, M.D.**, UCONN School of Medicine (Chair)

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**Kathryn V. Blake, Pharm.D.**  
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**Anne E. Dixon, M.A., B.M., B.Ch.**  
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**Tina Hartert, M.D., M.P.H.**  
Vanderbilt University School of Medicine

**Jerry A. Krishnan, M.D., Ph.D.**  
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**Robert F. Lemanske, Jr., M.D.**  
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**Daniel R. Ouellette, M.D., F.C.C.P.**  
Henry Ford Health System

**Wilson D. Pace, M.D., F.A.A.F.P.**  
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**Michael Schatz, M.D., M.S.**  
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**James W. Stout, M.D., M.P.H.**  
University of Washington

**Stephen J. Teach, M.D., M.P.H.**  
The George Washington University

**Craig A. Umscheid, M.D., M.S.C.E.**  
University of Chicago

# Focused Updates, Not Complete Revision of 2007 Guidelines

- Intended to improve asthma management and support informed, shared decision making between patients and their providers.
- Offer new guidance in **six key areas** of asthma diagnosis, management, and treatment, selected through a comprehensive literature review, consultation with experts, and soliciting comments from the public.
- Updates offer **19 recommendations** and include new features to help clinicians engage with patients.



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# GRADE Methodology

## Grading of Recommendations Assessment, Development and Evaluation (GRADE):

- Internationally accepted framework to determine quality or certainty of evidence and direction and strength of a recommendation.
- Used patient-centered outcomes to make judgments:
  - Critical outcomes: exacerbations, asthma control, asthma-related quality of life
  - Important outcomes: asthma symptoms, others by topic
- 2 main components to GRADE:
  - Creation of Evidence Profiles based upon each critical and important outcome.
  - Development of an Evidence to Decision Table for each recommendation.



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# Direction and Strength of Recommendation

Evidence-to-Decision (EtD) tables determined direction of each recommendation (for or against intervention) and its strength (strong or conditional).

Implications	Strong Recommendation	Conditional Recommendation
For patients	Most would want; only small proportion would not.	Most would want, but many would not.
For clinicians	Most patients should receive intervention. Formal decision aids likely unnecessary.	Different choices appropriate based on individual values and preferences. Decision aids may be helpful.
For policy makers	Recommendation can be adapted as policy or performance measure.	Will require substantial debate and involvement of stakeholders.
For researchers	Supported by credible research. For low/very low certainty of evidence, new research may provide evidence to alter recommendation.	Likely to be strengthened by additional research.



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# Topic Areas

1. Intermittent Inhaled Corticosteroids
2. Long-Acting Muscarinic Antagonists
3. Indoor Allergen Mitigation
4. Immunotherapy in the Treatment of Allergic Asthma
5. Fractional Exhaled Nitric Oxide Testing
6. Bronchial Thermoplasty



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# Intermittent Use of Inhaled Corticosteroids (ICS)

- For children ages 0–4 years with **recurrent wheezing triggered by respiratory tract infections only** *and no wheezing between infections*, the Expert Panel conditionally recommends
  - a **short course of daily ICS** at the onset of a respiratory tract infection
  - with an inhaled **short-acting beta<sub>2</sub>-agonist (SABA)** as-needed for quick-relief therapy.

*(Conditional recommendation, high certainty evidence)*



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# Intermittent ICS in Individuals 12 Years and Older

- For individuals with **mild persistent asthma**, either of the following two treatments are recommended as part of Step 2 therapy:
  - a daily low-dose ICS and as-needed SABA for quick-relief therapy, or
  - intermittent as-needed ICS and SABA used one after the other for worsening asthma.

*(Conditional recommendation, moderate certainty evidence.)*



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# Individuals with Persistent Asthma

- For individuals ages **4 years or older with moderate to severe persistent asthma**, preferred treatment is a single inhaler with ICS-formoterol (referred to as single maintenance and reliever therapy, or “SMART”) used both daily and as-needed.

*(Strong recommendation, high certainty evidence for ages  $\geq 12$  years, moderate certainty evidence for ages 4–11 years.)*

- For individuals ages **12 years or older with moderate to severe persistent asthma**, preferred treatment is a single inhaler with ICS-formoterol (SMART therapy) used both daily and as-needed compared to daily higher dose ICS-long-acting bronchodilator combination with as-needed SABA.

*(Conditional recommendation, high certainty evidence.)*



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# Expert Panel: No Short-Term Increase in ICS

- For children ages **4 years and older** and **adults 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 evidence.)*



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# LAMA Recommendations

- In individuals  $\geq 12$  years of age with asthma not controlled by ICS therapy alone, **adding a LABA rather than a LAMA** to an ICS is recommended. (Conditional recommendation, moderate certainty.)
- If a LABA cannot be used (unable to tolerate, contraindication, inability to use device, unavailability) **adding a LAMA to an ICS is an acceptable alternative.**  
*(Conditional recommendation, moderate certainty.)*
- If asthma is not controlled with ICS-LABA, **adding a LAMA** is recommended for many people because it offers a small potential benefit.  
*(Conditional recommendation, moderate certainty.)*



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# Allergen Mitigation Recommendations

- For individuals with asthma with no history of exposure and **no allergies (IgE or sensitization) or symptoms after exposure** to indoor allergens, environmental interventions in the home are not recommended.

*(Conditional recommendation, low certainty evidence.)*

- For individuals with asthma who are exposed and allergic to a specific indoor substance **using multiple strategies to reduce the allergen is recommended**—using only one strategy often does not improve asthma outcomes.

*(Conditional recommendation, low certainty evidence.)*

- For individuals with asthma who are sensitive to dust mites, **impermeable pillow/mattress covers are recommended only as part of** a multicomponent intervention.

*(Conditional recommendation, moderate certainty of evidence.)*

- **Integrated pest management** in the home is recommended for individuals with asthma who are allergic and exposed to cockroaches, mice, or rats.

*(Conditional recommendation, low certainty evidence.)*



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# Immunotherapy Recommendations

- Immunotherapy (aka allergy shots) are **recommended as an adjunct treatment to standard pharmacotherapy for individuals with mild-moderate allergic asthma** who have demonstrated allergic sensitization and evidence of worsening asthma symptoms after exposure to relevant antigen(s).  
*(Conditional recommendation, moderate certainty evidence.)*
- Evidence reviewed **did not support** using sublingual immunotherapy to specifically treat allergic asthma.  
*(Conditional recommendation, moderate certainty evidence.)*



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# FeNO Recommendations: Ages 5 Years and Older

- FeNO measurement **may support a diagnosis of asthma in individuals** for whom the diagnosis is uncertain even after a complete history, physical examination, and spirometry testing including bronchodilator responsiveness.  
*(Conditional recommendation, moderate certainty evidence.)*
- **May be used as part of ongoing asthma monitoring and management** when there is uncertainty in adjusting therapy using clinical and laboratory assessment.  
*(Conditional recommendation, low certainty evidence.)*



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# FeNO Recommendations: Ages 5 Years and Older

- **Should not be used in isolation** to assess asthma control, predict a future asthma exacerbation, or assess the severity of an exacerbation.  
*(Strong recommendation, low certainty evidence.)*
- In children ages 4 years and younger who have recurrent episodes of wheezing, **FeNO measurement does not predict the future development of asthma.**  
*(Strong recommendation, low certainty evidence.)*



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# Bronchial Thermoplasty Recommendations

- Most individuals 18 years and older with uncontrolled asthma **should not undergo** bronchial thermoplasty because benefits are small, risks are moderate, and long-term outcomes are uncertain.  
*(Conditional recommendation, low certainty evidence.)*
- Some individuals with persistent asthma **may be willing** to accept the risks of bronchial thermoplasty and, therefore, might choose this intervention after shared decision making with their health care provider.



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# New Features to Enable Implementation

- **Implementation guidance** sections to quickly assist clinicians
  - Provides expanded summaries for each recommendation
  - Indicates to whom the guidance applies
  - Shows how to use it in patient care
  - Lists important areas to discuss with patients to assist in deciding whether to implement the course of action
- **Updated treatment tables**



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# Turning Recommendations Into Practice

- It will take all of us to turn these recommendations into clinical practice for the approximately 25 million people in the U.S. living with asthma.
- Today's release of these *2020 Focused Updates* starts a comprehensive effort to make this information available to health providers and patients alike.



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# Need Assistance of Every Stakeholder

- NHLBI will disseminate the guidelines through our channels and will work closely with partners who we expect will do the same.
  - Federal agency partners, including many NIH Institutes and Centers, CDC, EPA, HUD, and more.
  - Non-federal representatives from scientific, professional and voluntary health organizations.



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# Guidelines Provider Resources

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U.S. Department of Health and Human Services  
National Institutes of Health  
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**2020 FOCUSED UPDATES TO THE Asthma Management Guidelines**

## CLINICIAN'S GUIDE

**PURPOSE**

This Clinician's Guide summarizes the 2020 Focused Updates to the Asthma Management Guidelines: A Report from the National Asthma Education and Prevention Program Coordinating Committee Expert Panel Working Group to help clinicians integrate the new recommendations into clinical care. The full 2020 Report, which is focused on selected topics rather than a complete revision of the 2007 Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma (EPR-3), can be found at [nhlbi.nih.gov/asthmaguidelines](http://nhlbi.nih.gov/asthmaguidelines). This summary guide should be used in conjunction with the full report. The Guide is organized by the following topics:

- Intermittent Inhaled Corticosteroids
- Long-Acting Muscarinic Antagonists
- Indoor Allergen Mitigation
- Immunotherapy in the Treatment of Allergic Asthma
- Fractional Exhaled Nitric Oxide Testing
- Bronchial Thermoplasty

Multiple stakeholders contributed to the selection of topics for the update. The Agency for Healthcare Research and Quality's (AHRQ) Evidence-Based Practice Centers conducted systematic reviews on these topics, which were subsequently published in peer-reviewed journals and used by the Expert Panel Working Group (the Expert Panel) of the National Asthma Education and Prevention Program Coordinating Committee (NAEPPCC), coordinated by the National Heart, Lung, and Blood Institute, as a basis for the updates. The Expert Panel used GRADE (Grading of Recommendations Assessment, Development, and Evaluation), an internationally accepted framework, for determining the certainty of evidence and the direction and strength of recommendations based on the evidence. Each recommendation is described as either strong or conditional. For all recommendations, shared decision making should be used to help individuals with asthma make choices that are consistent with their risks, values, and preferences; this is especially important for conditional recommendations.

Diagrams showing the recommended approaches to care, including the new recommendations, for individuals with asthma based on age have been updated from EPR-3. Within a given step, the preferred options are the best management choices supported by the evidence reviewed by the Expert Panel. When the available evidence was insufficient or did not change a previous recommendation, the diagrams list the preferred options from EPR-3. The diagrams are meant to assist, and not replace, clinical judgment or decision making required for individual patient management with input from individuals with asthma about their preferences.

U.S. Department of Health and Human Services  
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National Heart, Lung, and Blood Institute

NIH Publication No. 20-HL-8141  
December 2020

**2020 FOCUSED UPDATES TO THE Asthma Management Guidelines**

## AT-A-GLANCE GUIDE

This At-A-Glance Guide describes a treatment management approach based on recommendations from the 2020 Focused Updates to the Asthma Management Guidelines: A Report from the National Asthma Education and Prevention Program Coordinating Committee Expert Panel Working Group. Step diagrams from the 2007 Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma (EPR-3) were updated with the new recommendations. The diagrams are intended to help clinicians integrate the new recommendations into clinical care, and are meant to assist, and not replace, clinical judgment or decision-making for individual patient management, with input from individuals with asthma about their preferences.

**AGES 0-4 YEARS: STEPWISE APPROACH FOR MANAGEMENT OF ASTHMA**

Treatment	Management of Persistent Asthma in Individuals Ages 0-4 Years					
	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6
<b>Preferred</b>	PRN SABA and At the start of RTI: Add short course daily ICS*	Daily low-dose ICS and PRN SABA	Daily low-dose ICS-LABA and PRN SABA* or Daily low-dose ICS + montelukast,* or daily medium-dose ICS and PRN SABA	Daily medium-dose ICS-LABA and PRN SABA	Daily high-dose ICS-LABA and PRN SABA	Daily high-dose ICS-LABA + oral systemic corticosteroid and PRN SABA
<b>Alternative</b>		Daily montelukast* or Cromolyn,* and PRN SABA		Daily medium-dose ICS + montelukast* and PRN SABA	Daily high-dose ICS + montelukast* and PRN SABA	Daily high-dose ICS + montelukast* + oral systemic corticosteroid and PRN SABA

For children age 4 years only, see Step 3 and Step 4 on Management of Persistent Asthma in Individuals Ages 5-11 Years diagram.

**Assess Control**

- First check adherence, inhaler technique, environmental factors,\* and comorbid conditions.
- Step up if needed; reassess in 4-6 weeks
- Step down if possible (if asthma is well controlled for at least 3 consecutive months)

Consult with asthma specialist if Step 3 or higher is required. Consider consultation at Step 2.

Control assessment is a key element of asthma care. This involves both impairment and risk. Use of objective measures, self-reported control, and health care utilization are complementary and should be employed on an ongoing basis, depending on the individual's clinical situation.

**Abbreviations:** ICS, inhaled corticosteroid; LABA, long-acting beta<sub>2</sub>-agonist; SABA, inhaled short-acting beta<sub>2</sub>-agonist; RTI, respiratory tract infection; PRN, as needed

\* Updated based on the 2020 guidelines.

\* Cromolyn and montelukast were not considered for this update and/or have limited availability for use in the United States. The FDA issued a Boxed Warning for montelukast in March 2020.

The full-length report, 2020 Focused Updates to the Asthma Management Guidelines: A Report from the National Asthma Education and Prevention Program Coordinating Committee Expert Panel Working Group, can be accessed at [nhlbi.nih.gov/asthmaguidelines](http://nhlbi.nih.gov/asthmaguidelines).

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# Patient/Caregiver Resources

Downloadable fact sheets

**LEARN MORE BREATHE BETTER**

**WHAT IS FRACTIONAL EXHALED NITRIC OXIDE (FeNO) TESTING?**

**REDUCING ALLERGENS IN YOUR HOME**

**LEARN MORE BREATHE BETTER**

**WHAT IS BRONCHIAL THERMOPLASTY RIGHT FOR YOU?**

**LEARN MORE BREATHE BETTER**

**LEARN MORE BREATHE BETTER**

**WHAT ARE THE BENEFITS AND RISKS OF THE PROCEDURE?**

**LEARN MORE BREATHE BETTER**

**ASTHMA MANAGEMENT GUIDELINES AND YOUR CARE**

**WHAT ARE ASTHMA GUIDELINES AND HOW DO THEY AFFECT YOUR CARE?**

**LEARN MORE BREATHE BETTER**

**LEARN MORE BREATHE BETTER**

**WHAT IS INHALED CORTICOSTEROIDS?**

**THE CHANGING ROLE OF INHALED CORTICOSTEROIDS IN ASTHMA MANAGEMENT**

**LEARN MORE BREATHE BETTER**

**HOW ARE THEY DIFFERENT THAN INHALED CORTICOSTEROIDS?**

**LEARN MORE BREATHE BETTER**

**CAN IMMUNOTHERAPY HELP WITH THE TREATMENT OF ALLERGIC ASTHMA?**

**WHAT IS IMMUNOTHERAPY?**

**LEARN MORE BREATHE BETTER**

**LONG-ACTING MUSCARINIC ANTAGONISTS**

**WHAT IS A LONG-ACTING MUSCARINIC ANTAGONIST (LAMA) AND WHEN IS IT USED IN ASTHMA TREATMENT?**

**Asthma Action Plan**

For: \_\_\_\_\_ Doctor/Emergency Department Phone Number: \_\_\_\_\_ Date: \_\_\_\_\_

Doing Well: \_\_\_\_\_

Get Ready: \_\_\_\_\_

Get Worse: \_\_\_\_\_

Medical Alert: \_\_\_\_\_

DANGER SIGNS: \_\_\_\_\_

[nhlbi.nih.gov/BreatheBetter](http://nhlbi.nih.gov/BreatheBetter)



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# Patient/Caregiver Resources

## Educational videos



## Social media

If you have severe, persistent asthma, **talk to your health care provider** about bronchial thermoplasty.



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**Immunotherapy** is a type of treatment for allergic asthma—asthma that flares up when a person is exposed to something they're allergic to. The goal of this treatment is to **slowly build tolerance to the substances that trigger allergies** by gradually giving larger doses of those items regularly over time.



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**Inhaled corticosteroids** are medicines you inhale directly into your lungs to **help control the inflammation in your airways** by making them less sensitive and less likely to react to your asthma triggers.



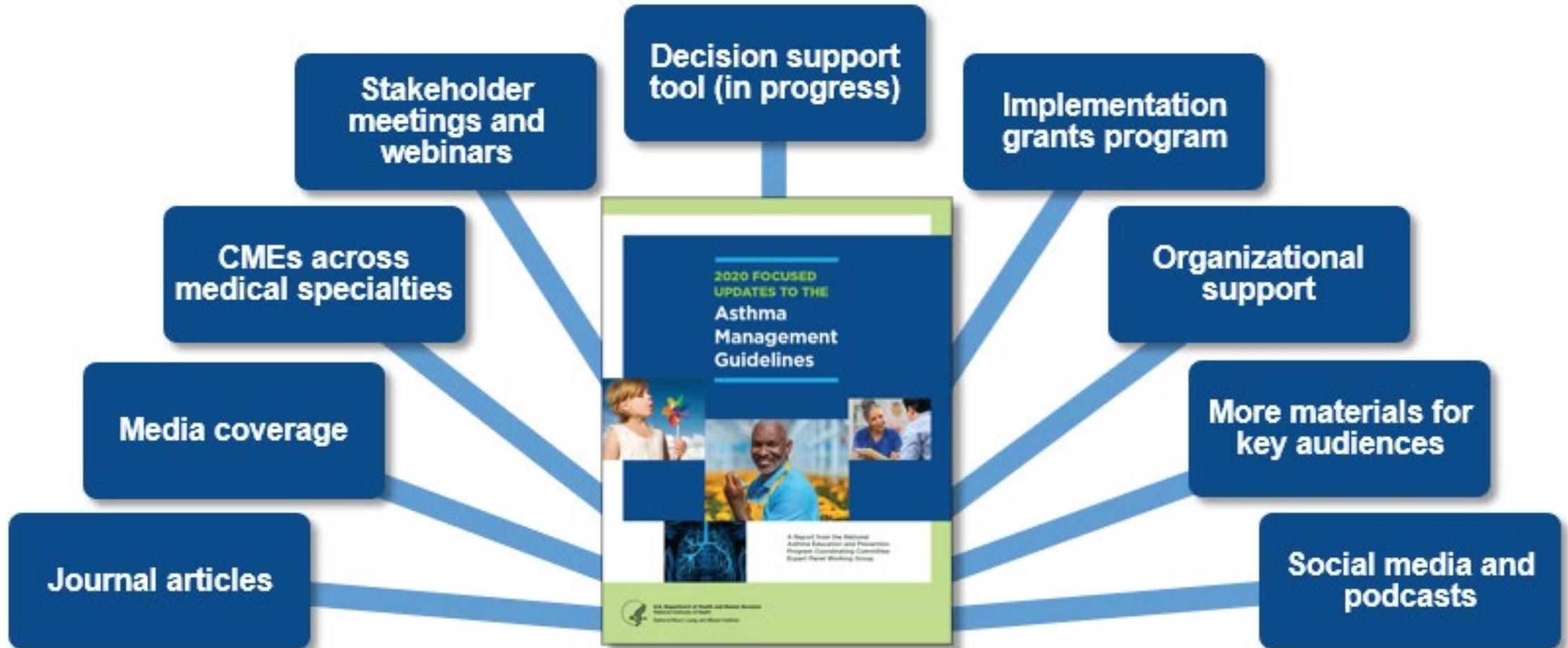
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A **long-acting muscarinic antagonist (LAMA)** is a medicine that may help control asthma long-term.



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# Potential Activities



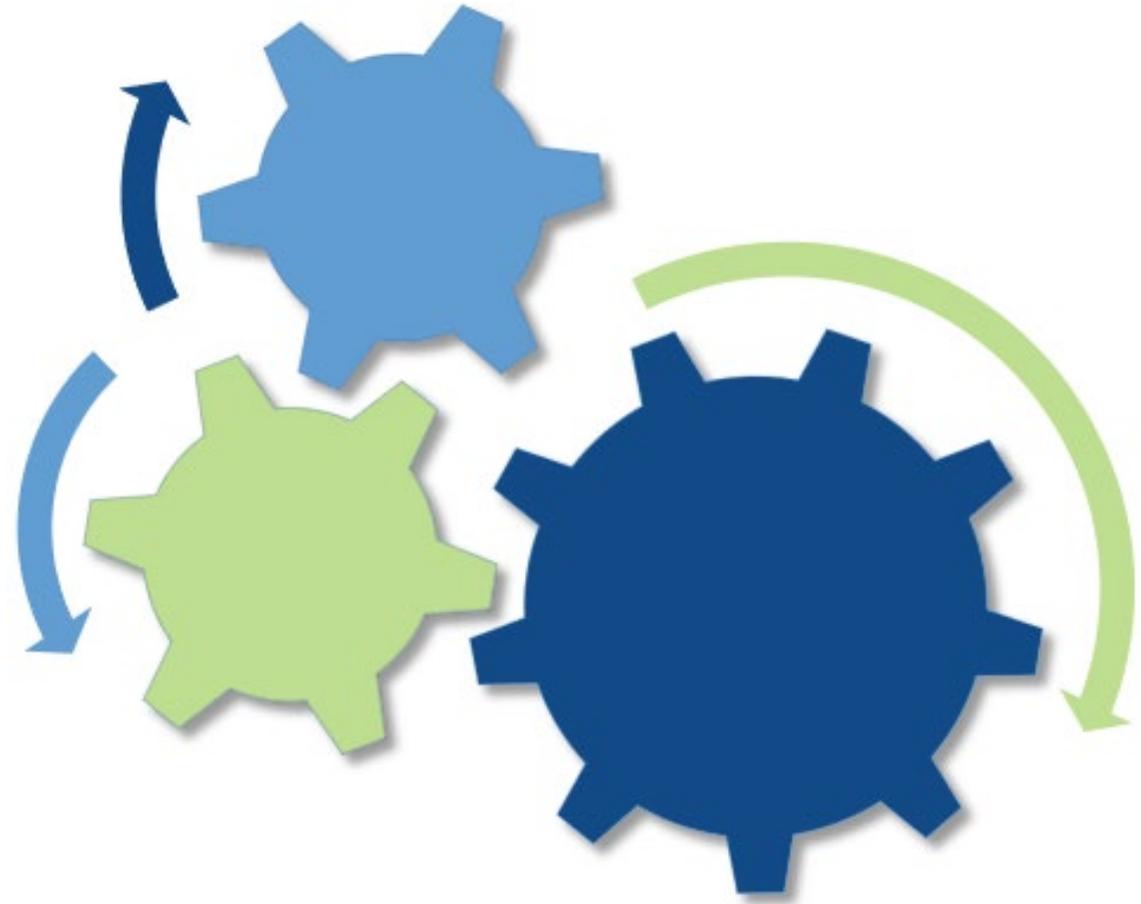
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# Most Important of All

Support from  
all of you!!!



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## For More Information



**NHLBI Asthma Guidelines Info:**

**<https://www.nhlbi.nih.gov/asthmaguidelines>**

**JACI December 3 Issue:**

**[https://www.jacionline.org/article/S0091-6749\(20\)31404-4/fulltext](https://www.jacionline.org/article/S0091-6749(20)31404-4/fulltext)**



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