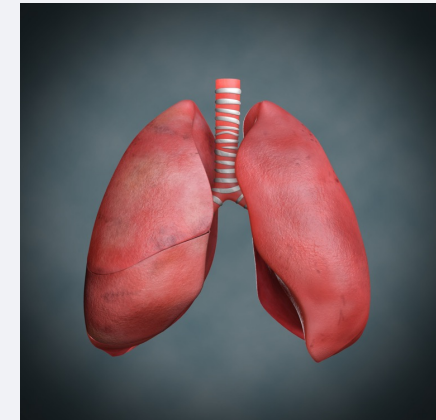


2022 AAE Pharmacology Pre-Conference

**SMART in those 12 and older and other
recommendations for adult management from the
2021 EPR Update**

**2022 AAE Conference
Chattanooga, TN
August 4, 2022
9:00 a.m. – 9:45 a.m.**





SMART in Those 12 and Older and Other Recommendations for Adult Management from EPR Update

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Oklahoma Allergy and Asthma Clinic, Oklahoma City, OK
Georgetown University, School of Nursing, Washington, DC

Disclosures



Pfizer -- Speaker

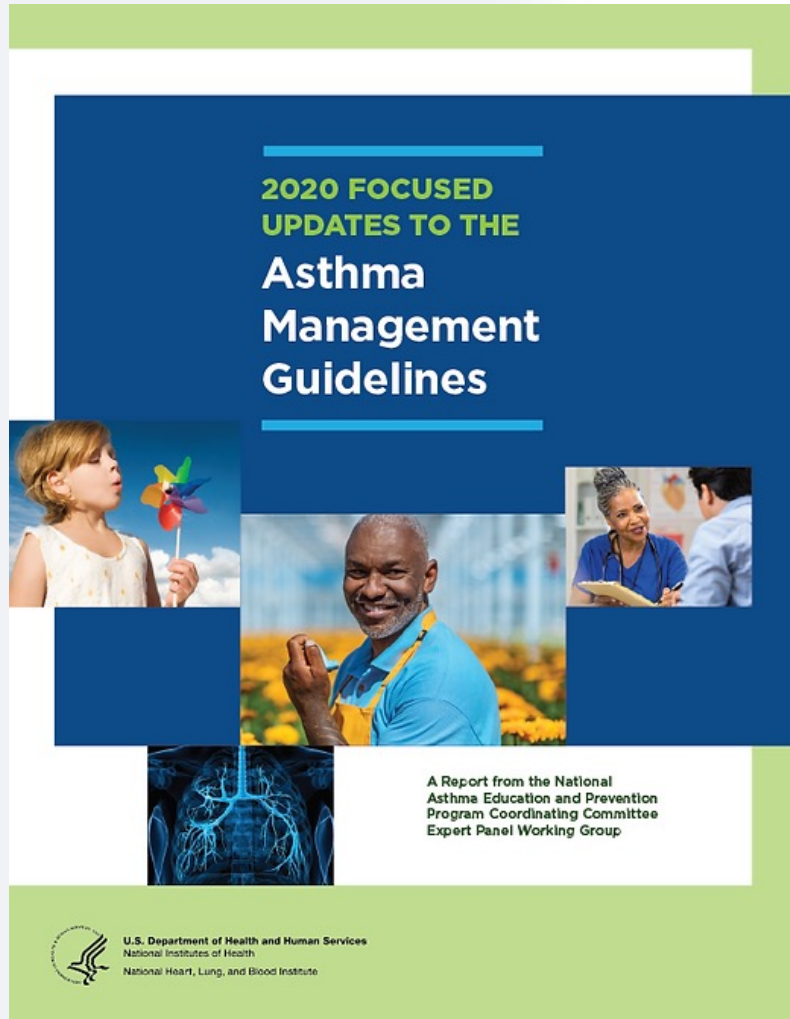
No conflict

Objectives



1. Analyze evidence-based asthma guidelines recommended for persistent asthma in adolescent and adult patients.
2. Discuss the preferred controller and reliever pharmacotherapy recommendations in adolescent and adults with asthma in the NAEPP 2020 Guideline Update and GINA 2020 Report
3. Evaluate barriers and concerns in implementing SMART in the United States in adolescent and adult asthma.

2020 Focused Updates to the Asthma Management Guidelines

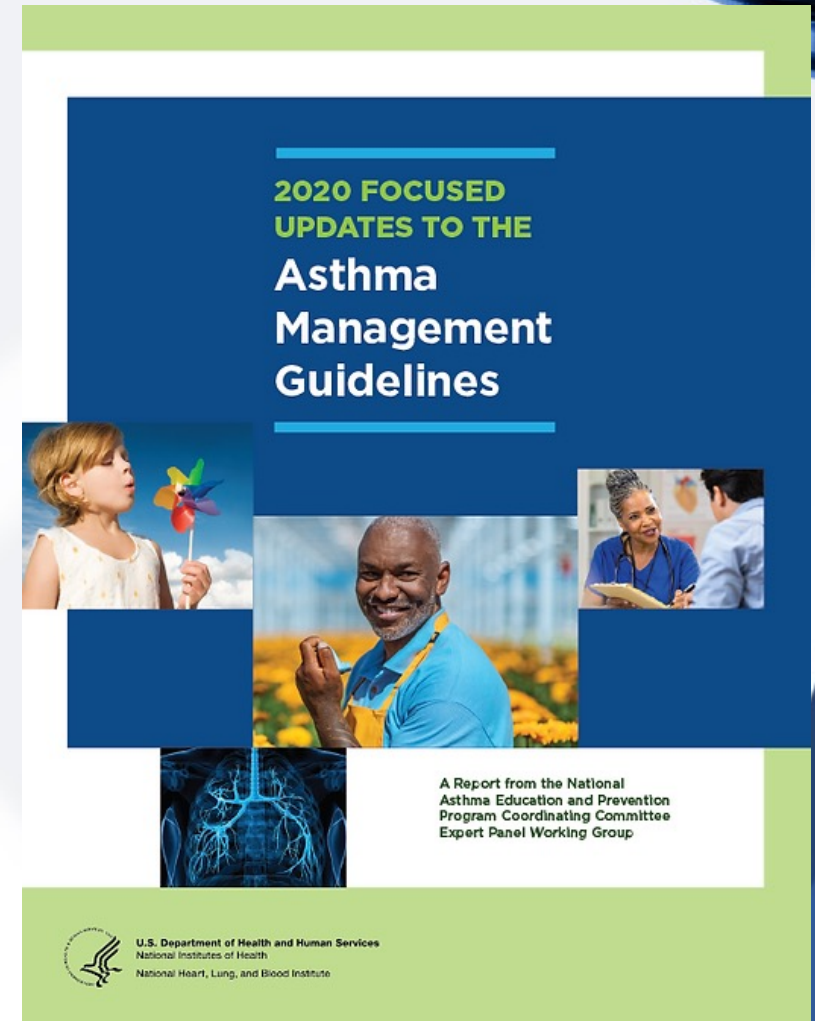


- Released December 2020
- Contains 19 recommendations addressing six priority topic areas
- Using inhaled corticosteroids when needed for recurrent wheezing or persistent asthma

2020 Focused Updates to the Asthma Management Guidelines. *J Allergy Clin Immunol* 2020;146:1217-70.

2020 Focused Updates to the Asthma Management Guidelines

- 20,572 nonduplicated articles and other sources were reviewed
- 475 relevant publications were included in the 6 systematic reviews
- An additional 15 articles were included in the update by the expert panel



Managing Asthma in Adolescents and Adults



National Heart, Lung, and Blood Institute (NHLBI) Advisory Council chose 6 topics to update the 2007 asthma guidelines based on results from a 2014 needs assessment

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


2020 Focused Updates to the Asthma Management Guidelines



2020 NAEPP Update

First time two additional forms of rescue therapy are recommended

- short-acting β_2 -agonists (SABAs) with separate inhaled corticosteroid (ICS) as needed for mild asthma
- single ICS + formoterol combination inhaler for moderate-to-severe asthma
 - SMART single maintenance and reliever inhaler therapy

A blue stethoscope is positioned in the top right corner of the slide, partially overlapping the white background.

2020 NAEPP Asthma Update

Aged 12 + years

SMART: Single Maintenance and Reliever Therapy



“Use of a single inhaler containing the combination of an inhaled corticosteroid (ICS) and formoterol, a specific long-acting bronchodilator, for both maintenance and quick relief therapy is recommended by the Global Initiative for Asthma and the National Asthma Education and Prevention Program Coordinating Committee in steps 3 and 4 of asthma management”

2020 NAEPP Asthma Update: Aged 12 + years



High certainty of evidence demonstrating benefit
of SMART in Steps 3 and 4

compared with

→ same-dose ICS/long-acting β_2 agonist (LABA)

OR

→ higher-dose ICS therapy, plus short-acting
 β_2 agonist (SABA) as needed

2020 NAEPP Asthma Update

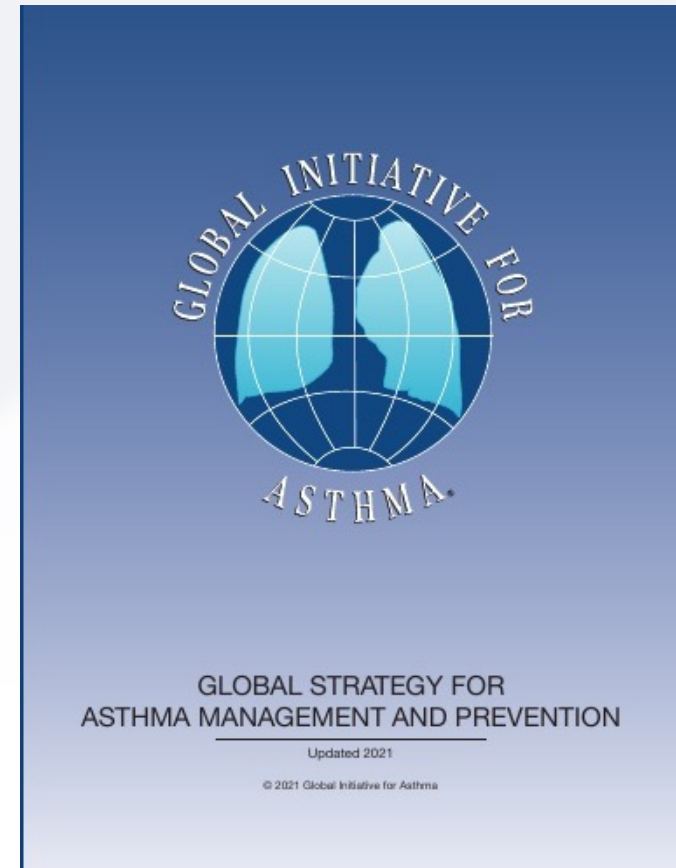
Aged 12 + years



- Aged 12 years or older with asthma, NAEPP gave a recommendation with a high certainty of evidence for SMART compared with higher-dose ICS-LABA plus as-needed SABA
- Uncontrolled asthma despite daily ICS-LABA treatment plus as-needed SABA, the clinical trial evidence supports switching to SMART at the same or lower maintenance ICS-LABA dose before considering a step-up of maintenance treatment

Global Initiative for Asthma (GINA)

Single maintenance and reliever therapy is also preferentially recommended in steps 3 and 4 in the Global Initiative for Asthma (GINA) strategy report, the most recent update of which was published in 2021



2020 NAEPP Asthma Update Aged 12 + years



Recommendations for pharmacologic therapy continue to be based on a stepwise approach using shared decision-making to achieve and maintain asthma control at the lowest effective therapeutic regimen

SMART: Single Maintenance and Reliever Therapy

A blue stethoscope is positioned in the top right corner of the slide, partially overlapping the dark blue header area.

- SMART employs a single ICS+formoterol combination inhaler product dosed daily and as needed for asthma exacerbations.
- Maximum dosage of formoterol varies by age
- Each inhalation of SMART will deliver 4.5 mcg of formoterol
- Patients aged 4 to 11 can use 8 puffs of formoterol daily (36 mcg)
- Patients aged 12 and older can use 12 puffs of their inhaler per day (54 mcg)

2020 Focused Updates to the Asthma Management Guidelines Ages 12+



Quick-relief medications

- Use SABA as needed for symptoms. The intensity of treatment depends on the severity of symptoms: up to 3 treatments at 20-minute intervals as needed
- In steps 3 and 4, the preferred option includes the use of ICS-formoterol 1 to 2 puffs as needed up to a maximum total daily maintenance and rescue dose of 12 puffs (54 mcg)

Caution: Increasing use of SABA or use >2 days a week for symptom relief (not prevention of EIB) generally indicates inadequate control and may require a step up in treatment.

2020 Focused Updates to the Asthma Management Guidelines Ages 12+



- The terms ICS-LABA and ICS-formoterol indicate combination therapy with both an ICS and a LABA, usually and preferably in a single inhaler.
- Where formoterol is specified in the steps, it is because the evidence is based on studies specific to formoterol.
- In individuals ages 12 years and older with persistent allergic asthma in which there is uncertainty in choosing, monitoring, or adjusting anti-inflammatory therapies based on history, clinical findings, and spirometry, FeNO measurement is conditionally recommended as part of an ongoing asthma monitoring and management strategy that includes frequent assessment.
- Bronchial thermoplasty was evaluated in Step 6. The outcome was a conditional recommendation against the therapy.

2020 NAEPP Asthma Update: Aged 12 + years



- Most SMART clinical trials were in adults and adolescents, using budesonide-formoterol 160/ 4.5 mg, one inhalation once or twice daily (step 3) and two inhalations twice daily (step 4)
- Other ICS/long-acting bronchodilator combinations have not been studied

AGES 12+ YEARS: STEPWISE APPROACH FOR MANAGEMENT OF ASTHMA

| | Intermittent Asthma | Management of Persistent Asthma in Individuals Ages 12+ Years | | | | |
|--------------------|---------------------|--|---|---|---|---|
| Treatment | STEP 1 | STEP 2 | STEP 3 | STEP 4 | STEP 5 | STEP 6 [■] |
| Preferred | PRN SABA | Daily low-dose ICS and PRN SABA or PRN concomitant ICS and SABA ▲ | Daily and PRN combination low-dose ICS-formoterol ▲ | Daily and PRN combination medium-dose ICS-formoterol ▲ | Daily medium-high dose ICS-LABA + LAMA and PRN SABA ▲ | Daily high-dose ICS-LABA + oral systemic corticosteroids + PRN SABA |
| Alternative | | Daily LTRA* and PRN SABA or Cromolyn,* or Nedocromil,* or Zileuton,* or Theophylline,* and PRN SABA | Daily medium-dose ICS and PRN SABA or Daily low-dose ICS-LABA, or daily low-dose ICS + LAMA, ▲ or daily low-dose ICS + LTRA,* and PRN SABA or Daily low-dose ICS + Theophylline* or Zileuton,* and PRN SABA | Daily medium-dose ICS-LABA or daily medium-dose ICS + LAMA, and PRN SABA ▲ or Daily medium-dose ICS + LTRA,* or daily medium-dose ICS + Theophylline,* or daily medium-dose ICS + Zileuton,* and PRN SABA | Daily medium-high dose ICS-LABA or daily high-dose ICS + LTRA,* and PRN SABA | |
| | | Steps 2–4: Conditionally recommend the use of subcutaneous immunotherapy as an adjunct treatment to standard pharmacotherapy in individuals ≥ 5 years of age whose asthma is controlled at the initiation, build up, and maintenance phases of immunotherapy ▲ | | | Consider adding Asthma Biologics (e.g., anti-IgE, anti-IL5, anti-IL5R, anti-IL4/IL13)** | |

Assess Control

- First check adherence, inhaler technique, environmental factors, ▲ and comorbid conditions.
- **Step up** if needed; reassess in 2–6 weeks
- **Step down** if possible (if asthma is well controlled for at least 3 consecutive months)

Consult with asthma specialist if Step 4 or higher is required. Consider consultation at Step 3.

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.

AGES 12+ YEARS: STEPWISE APPROACH FOR MANAGEMENT OF ASTHMA

| | | Management of Persistent Asthma in Individuals Ages 12+ Years | | | | | |
|-----------|--|---|--|--|---|--|---|
| | | Intermittent Asthma | | | | | |
| Treatment | | STEP 1 | STEP 2 | STEP 3 | STEP 4 | STEP 5 | STEP 6 [■] |
| Preferred | | PRN SABA | Daily low-dose ICS and PRN SABA or PRN concomitant ICS and SABA ▲ | Daily and PRN combination low-dose ICS-formoterol ▲ | Daily and PRN combination medium-dose ICS-formoterol ▲ | Daily medium-high dose ICS-LABA + LAMA and PRN SABA ▲ | Daily high-dose ICS-LABA + oral systemic corticosteroids + PRN SABA |
| | | | Daily LTRA* and PRN SABA or Cromolyn,* or Nedocromil,* or Zileuton,* or Theophylline,* and | Daily medium-dose ICS and PRN SABA or Daily low-dose ICS-LABA, or daily low-dose ICS + | Daily medium-dose ICS-LABA or daily medium-dose ICS + LAMA, and PRN SABA ▲ or Daily medium- | Daily medium-high dose ICS-LABA or daily high-dose ICS + LTRA,* and PRN SABA | |

2020 Focused Updates to the Asthma Management Guidelines Ages 12+

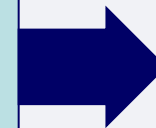
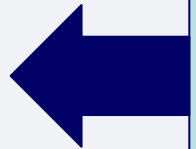


Assess Control

First check adherence, inhaler technique, environmental factors, and comorbid conditions. • Step up if needed; reassess in 2–6 weeks

- Step down if possible (if asthma is well controlled for at least 3 consecutive months)

Consult with asthma specialist if Step 4 or higher is required. Consider consultation at Step 3. 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.





AGES 12+ YEARS: STEPWISE APPROACH FOR MANAGEMENT OF ASTHMA

| | Intermittent Asthma | | Management of Persistent Asthma in Individuals Ages 12+ Years | | | |
|--------------------|---------------------|---|--|--|---|---|
| Treatment | STEP 1 | STEP 2 | STEP 3 | STEP 4 | STEP 5 | STEP 6 [■] |
| Preferred | PRN SABA | Daily low-dose ICS and PRN SABA or PRN concomitant ICS and SABA [▲] | Daily and PRN combination low-dose ICS-formoterol [▲] | Daily and PRN combination medium-dose ICS-formoterol [▲] | Daily medium-high dose ICS-LABA + LAMA and PRN SABA [▲] | Daily high-dose ICS-LABA + oral systemic corticosteroids + PRN SABA |
| Alternative | | Daily LTRA* and PRN SABA or Cromolyn,* or Nedocromil,* or Zileuton,* or Theophylline,* and PRN SABA | Daily medium-dose ICS and PRN SABA or Daily low-dose ICS-LABA, or daily low-dose ICS + LAMA, [▲] or daily low-dose ICS + LTRA,* and PRN SABA or Daily low-dose ICS + Theophylline* or Zileuton,* and PRN SABA | Daily medium-dose ICS-LABA or daily medium-dose ICS + LAMA, and PRN SABA [▲] or Daily medium-dose ICS + LTRA,* or daily medium-dose ICS + Theophylline,* or daily medium-dose ICS + Zileuton,* and PRN SABA | Daily medium-high dose ICS-LABA or daily high-dose ICS + LTRA,* and PRN SABA | |
| | | Steps 2-4: Conditionally recommend the use of subcutaneous immunotherapy as an adjunct treatment to standard pharmacotherapy in individuals ≥ 5 years of age whose asthma is controlled at the initiation, build up, and maintenance phases of immunotherapy [▲] | | | Consider adding Asthma Biologics (e.g., anti-IgE, anti-IL5, anti-IL5R, anti-IL4/IL13)** | |

Assess Control

- First check adherence, inhaler technique, environmental factors,[▲] and comorbid conditions.
- **Step up** if needed; reassess in 2-6 weeks
- **Step down** if possible (if asthma is well controlled for at least 3 consecutive months)

Consult with asthma specialist if Step 4 or higher is required. Consider consultation at Step 3.

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 beta₂-agonist; LAMA, long-acting muscarinic antagonist; LTRA, leukotriene receptor antagonist; SABA, inhaled short-acting beta₂-agonist

[▲] Updated based on the 2020 guidelines.

* Cromolyn, Nedocromil, LTRAs including Zileuton and montelukast, and Theophylline were not considered for this update, and/or have limited availability for use in the United States, and/or have an increased risk of adverse consequences and need for monitoring that make their use less desirable. The FDA issued a Boxed Warning for montelukast in March 2020.

** The AHRQ systematic reviews that informed this report did not include studies that examined the role of asthma biologics (e.g., anti-IgE, anti-IL5, anti-IL5R, anti-IL4/IL13). Thus, this report does not contain specific recommendations for the use of biologics in asthma in Steps 5 and 6.

■ Data on the use of LAMA therapy in individuals with severe persistent asthma (Step 6) were not included in the AHRQ systematic review and thus no recommendation is made.

SMART



| Indications | Dosing |
|--|---|
| <ul style="list-style-type: none">• Step 3 (low-dose ICS) and Step 4 (medium-dose ICS) treatment.• Patients poorly controlled on ICS-LABA with SABA as quick relief | <ul style="list-style-type: none">• 1–2 puffs once or twice daily for maintenance and 1–2 puffs as needed for asthma symptoms.• Maintenance dosing and frequency depends on age, asthma severity, and ICS dose in the ICS-formoterol preparation |

Maximum number of puffs per day is based on 4.5 mcg formoterol/inhalation):

Ages 4-11: 8 puffs (36 mcg formoterol)

Ages 12 years and older: 12 (54 mcg formoterol)

Clinical note: formoterol is the only LABA studied for use in SMART

SMART



ASTHMA ACTION PLAN



| | |
|-----------------------|-------------------|
| Name: | Date: |
| Doctor: | Medical Record #: |
| Doctor's Phone #: Day | Night/Weekend |
| Emergency Contact: | |
| Doctor's Signature: | |

The colors of a traffic light will help you use your asthma medicines.



Personal Best Peak Flow: _____

| GO | | Use these daily controller medicines: | | |
|---|---|--|----------|----------------|
| You have <i>all</i> of these: <ul style="list-style-type: none"> Breathing is good No cough or wheeze Sleep through the night Can work & play | Peak flow: from _____ to _____ | MEDICINE | HOW MUCH | HOW OFTEN/WHEN |
| | | | | |
| | | For asthma with exercise, take: | | |
| | | | | |
| CAUTION | | Continue with green zone medicine and add: | | |
| You have <i>any</i> of these: <ul style="list-style-type: none"> First signs of a cold Exposure to known trigger Cough Mild wheeze Tight chest Coughing at night | Peak flow: from _____ to _____ | MEDICINE | HOW MUCH | HOW OFTEN/WHEN |
| | | | | |
| | | CALL YOUR ASTHMA CARE PROVIDER. | | |
| | | | | |
| DANGER | | Take these medicines and call your doctor now. | | |
| Your asthma is getting worse fast: <ul style="list-style-type: none"> Medicine is not helping Breathing is hard & fast Nose opens wide Trouble speaking Ribs show (in children) | Peak flow: reading below _____ | MEDICINE | HOW MUCH | HOW OFTEN/WHEN |
| | | | | |
| | | | | |

GET HELP FROM A DOCTOR NOW! Your doctor will want to see you right away. It's important! If you cannot contact your doctor, go directly to the emergency room. **DO NOT WAIT.** Make an appointment with your asthma care provider within two days of an ER visit or hospitalization.

SMART regimen should be introduced with a careful explanation of its role in self-management, preferably with a customized written asthma action plan



**Expert Panel Recommendations for the
2020 Asthma Guideline Update
Aged 12 Years or Older**

Pharmacologic Therapy for Managing Asthma in Individuals Aged 12 Years or Older



Mild Persistent Asthma Intermittent Inhaled Corticosteroids (ICSs)

→ daily low-dose ICS and an as-needed short-acting β 2-agonist (SABA) for quick relief therapy

OR

→ as-needed ICS and a SABA used concomitantly

conditional recommendation, moderate certainty of evidence

Pharmacologic Therapy for Managing Asthma in Individuals Aged 12 Years or Older



**A short-term increase in the ICS dose
alone for worsening of asthma symptoms
is not recommended**

Pharmacologic Therapy for Managing Asthma in Individuals Aged 12 Years or Older



Moderate to Severe Persistent Asthma

ICS-formoterol therapy in a single inhaler used
as both daily controller and reliever therapy
compared with
higher-dose ICS-LABA therapy as
daily controller therapy and a
SABA for quick-relief therapy

conditional recommendation, high certainty of evidence

Use of Long-Acting Muscarinic Antagonists (LAMAs) as Add-on Therapy

A blue stethoscope is positioned in the top right corner of the slide, partially overlapping the dark blue header.

Uncontrolled Persistent Asthma

Expert Panel recommends against adding a LAMA to an ICS compared with adding a LABA to an ICS

If a LABA is not the expert panel recommends adding a LAMA to ICS controller therapy compared with continuing the same dose of ICS alone

Use of Long-Acting Muscarinic Antagonists (LAMAs) as Add-on Therapy

A blue stethoscope is positioned in the top right corner of the slide, partially overlapping the dark blue header.

Uncontrolled Persistent Asthma

Expert Panel recommends adding a LAMA to ICS-LABA therapy compared with continuing the same dose of ICS-LABA therapy

conditional recommendation, moderate certainty of evidence

Utility of Fractional Exhaled Nitric Oxide (FeNO) in Asthma Diagnosis and Monitoring Treatment and Disease Activity



- FENO levels must be interpreted in conjunction with other clinical data
- Test results should not be used alone to diagnose asthma
- Measurements can serve as an adjunct test
- Current evidence suggests that FENO can prevent exacerbations only when testing is used frequently (eg, every 2-3 months)
- Expert Panel does not recommend using FENO testing to assess adherence to treatment (mostly for ICSs) because the strength of this evidence is low

Allergen Reduction Strategies in Management of Asthma



- Patients with asthma who do not have sensitization to specific indoor allergens, or no symptoms related to exposure to specific indoor allergens, the expert panel conditionally recommends against allergen mitigation interventions as part of routine asthma management
- Patients with asthma who have symptoms related to exposure to identified allergens, confirmed by history taking or allergy testing, the expert panel conditionally recommends a multicomponent allergen-specific mitigation intervention

Role of Subcutaneous and Sublingual Immunotherapy in Treatment of Allergic Asthma



Mild to Moderate Allergic Asthma

Expert panel recommends the use of subcutaneous immunotherapy as an adjunct treatment to standard pharmacotherapy in individuals whose asthma is controlled at the initiation, buildup, and maintenance phases of immunotherapy

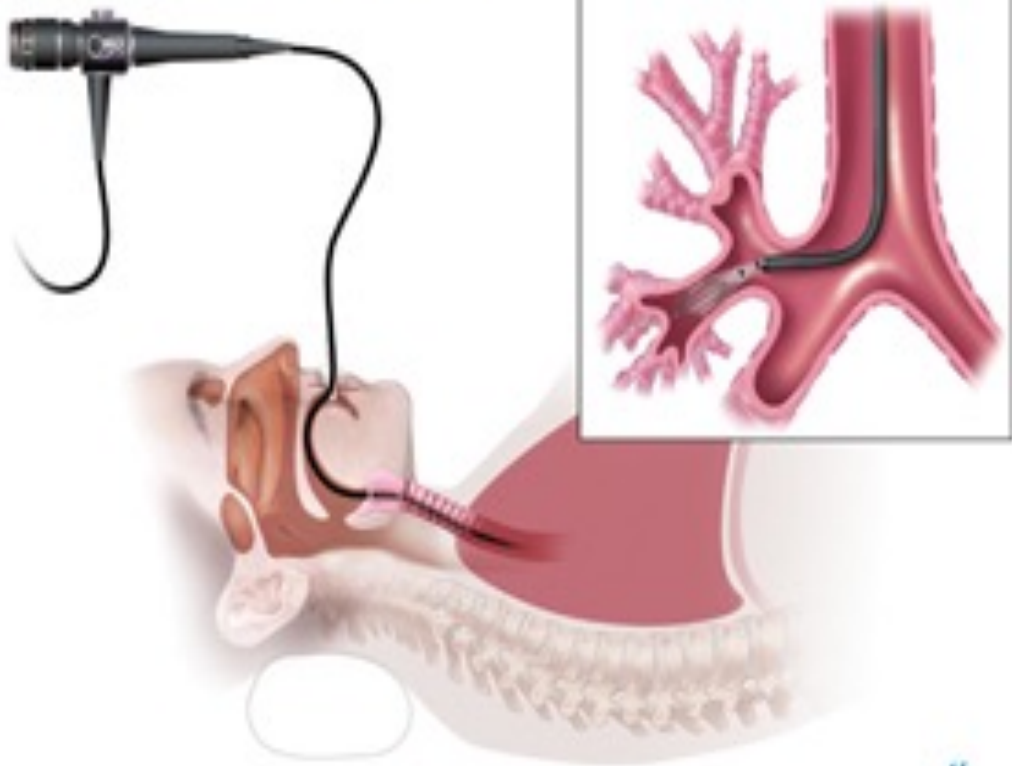
Expert panel recommends against the use of sublingual immunotherapy in asthma treatment

conditional recommendation, moderate certainty of evidence

Bronchial Thermoplasty



Alair® Bronchial Thermoplasty System



Aged 18 years or older with persistent asthma, the expert panel conditionally recommends against bronchial thermoplasty

Aged 18 years or older with persistent asthma who place a low value on harms (short-term worsening symptoms and unknown long-term adverse effects) and a high value on potential benefits (improvement in quality of life, a small reduction in exacerbations) might consider bronchial thermoplasty

2020 Focused Updates to the Asthma Management Guidelines Ages 12+



- **Assess environmental factors**
- **Provide patient education**
- **Manage comorbidities**

Principal steps to achieving and maintaining asthma control



- Initiate or increase inhaled corticosteroid (ICS) or add long-acting β_2 -agonist (LABA) to ICS (step up) to gain control → check adherence and inhaler technique first)
- Maintain treatment to maintain control
- Prevent and treat exacerbations → combination low-dose ICS/formoterol as both maintenance and reliever is more effective than ICS/LABA maintenance + as-needed short-acting β_2 -agonist
- Reduce to the lowest necessary maintenance dose when control is achieved
- Minimize the risk of adverse effects of treatment

Assess Control



- First check adherence, inhaler technique, environmental factors, and comorbid conditions.
- Step up if needed reassess in 2–6 weeks
- Step down if possible (if asthma is well controlled for at least consecutive months)
- Consult with asthma specialist if Step 4 or higher is required
- Consider consultation at Step 3

2020 Focused Updates to the Asthma Management Guidelines Ages 12+



- Control assessment is a key element of asthma care
- 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

What we should discuss with our patients and families



- Primary demonstrated benefits of combination ICS-formoterol used daily and as needed:
 - reductions in asthma exacerbations requiring unscheduled medical visits and use of systemic corticosteroids
- Studies found no difference in documented harm between as needed therapy and daily ICS-LABA
- Studies showed that combination ICS-formoterol reduces exposure to corticosteroids, suggesting that the intervention might reduce future corticosteroid associated harm
- May not be appropriate for some individuals for such reasons as cost, formulary considerations, or medication intolerance



CASE

2020 Focused Updates to the Asthma Management Guidelines Ages 12+

Jennifer is a 45-year-old female with moderate persistent asthma partially controlled.

She is in your office today for a routine follow up visit. She has been administering albuterol HFA 2 puffs 2 to 3 times most everyday the past 3 to 4 weeks.

She works as a nurse practitioner at a large hospital.

You introduce her to SMART.

She does not know why you are giving her a combination on ICS and formoterol as a single maintenance and reliever therapy.

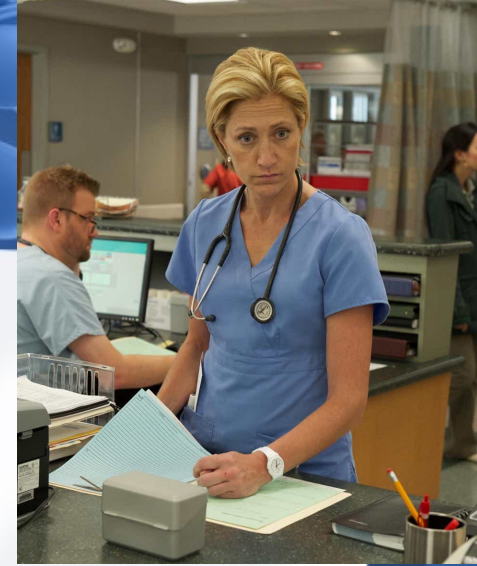




Before you get started you understand the SMART regimen should be introduced with a careful explanation of its role in self-management and give her an individualized written asthma action plan

Question 1

- How much of this ICS-formoterol can I take using this SMART plan you are telling me about?
- The recommendation for as-needed doses of budesonide formoterol 160/4.5 mg (200/6 mg metered dose) is to take one inhalation whenever needed for symptom relief. If symptoms persist after a few minutes, another dose can be taken, but no more than 6 doses should be taken on a single occasion
- The recommended total maximum dose that can be taken temporarily on any single day (total of maintenance plus as-needed doses) for budesonide formoterol is 12 inhalations for age 12 years and older

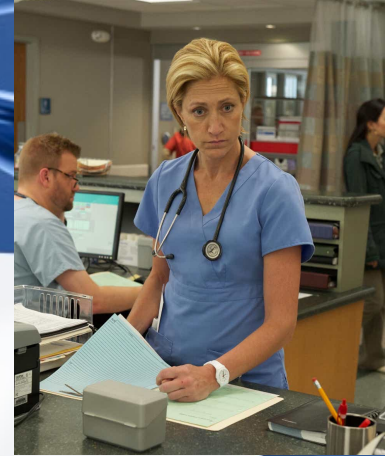


Question 2

- How does this SMART work and why can't I just take what I always do?

Maintenance ICS-LABA treatment with as-needed SABA reliever improves asthma control and reduces the background risk for exacerbations compared with ICS plus as needed SABA, but the SMART approach specifically uses ICS formoterol as both the maintenance inhaler and the reliever inhaler.

SMART titrates additional ICS together with additional formoterol against breakthrough symptoms when symptoms increase, which significantly reduces the risk for severe exacerbations (defined as an emergency room visit, hospitalization, or the need for systemic corticosteroids for 3 or more days) compared with maintenance ICS or ICS-LABA regimens with a SABA reliever.



Question 3

Is SMART safe for me and what is the benefit?

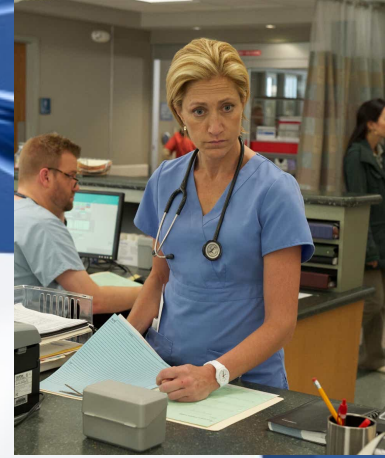
Studies show no difference in documented harm between this type of therapy and daily ICS-LABA

The benefit of SMART in reducing asthma exacerbations is thought to occur partly by providing additional anti-inflammatory treatment during the window when asthma and airway inflammation are worsening.

In patients taking maintenance ICS or ICS-LABA, although as-needed formoterol has been shown to reduce the risk for exacerbations compared with as-needed SABA. Extra doses of both ICS and formoterol in SMART may contribute to a further reduction in exacerbation risk



Question 4



- How do you decide which of your patients you are going to consider SMART?

Candidates for SMART treatment should require maintenance treatment with ICS-LABA (steps 3 or 4).

No recognized patient characteristics exclude patients from consideration for SMART.

Because the main advantage of SMART is the reduction of severe exacerbations, with the associated reduction in potential cumulative adverse effects of oral corticosteroids, SMART is particularly well-suited to those with a history of asthma exacerbations.

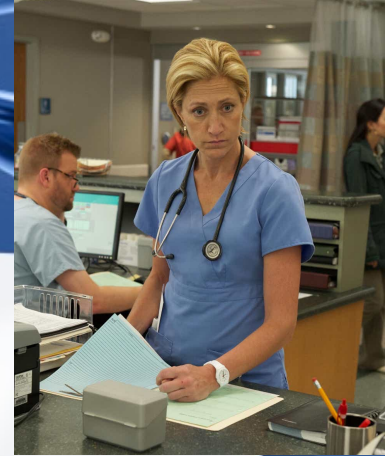
It has not been tested specifically in individuals who are obese or in pregnant women.

Question 5

- How long do I have to take this SMART treatment?

Once your asthma is well-controlled, the maintenance dose should be adjusted to the lowest dose, so your asthma control is maintained.

Sometimes asthma control can still be achieved by reducing the maintenance dose to once daily. An increase in the requirement for as-needed doses after a reduction in the maintenance dose suggests that you should return to your previous dose.



SMART



ASTHMA ACTION PLAN



| | |
|-----------------------|-------------------|
| Name: | Date: |
| Doctor: | Medical Record #: |
| Doctor's Phone #: Day | Night/Weekend |
| Emergency Contact: | |
| Doctor's Signature: | |

The colors of a traffic light will help you use your asthma medicines.

- **GREEN means Go Zone!**
Use preventive medicine.
- **YELLOW means Caution Zone!**
Add quick-relief medicine.
- **RED means Danger Zone!**
Get help from a doctor.

Personal Best Peak Flow: _____

| GO | Use these daily controller medicines: | | | |
|---|--|---------------------------------|----------|----------------|
| You have <i>all</i> of these: <ul style="list-style-type: none"> • Breathing is good • No cough or wheeze • Sleep through the night • Can work & play | Peak flow: <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;"> from _____ to _____ </div> | MEDICINE | HOW MUCH | HOW OFTEN/WHEN |
| | | | | |
| | | For asthma with exercise, take: | | |
| CAUTION | Continue with green zone medicine and add: | | | |
| You have <i>any</i> of these: <ul style="list-style-type: none"> • First signs of a cold • Exposure to known trigger • Cough • Mild wheeze • Tight chest • Coughing at night | Peak flow: <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;"> from _____ to _____ </div> | MEDICINE | HOW MUCH | HOW OFTEN/WHEN |
| | | | | |
| | | CALL YOUR ASTHMA CARE PROVIDER. | | |
| DANGER | Take these medicines and call your doctor now. | | | |
| Your asthma is getting worse fast: <ul style="list-style-type: none"> • Medicine is not helping • Breathing is hard & fast • Nose opens wide • Trouble speaking • Ribs show (in children) | Peak flow: <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;"> reading below _____ </div> | MEDICINE | HOW MUCH | HOW OFTEN/WHEN |
| | | | | |
| | | | | |

GET HELP FROM A DOCTOR NOW! Your doctor will want to see you right away. It's important! If you cannot contact your doctor, go directly to the emergency room. **DO NOT WAIT.** Make an appointment with your asthma care provider within two days of an ER visit or hospitalization.

SMART regimen should be introduced with a careful explanation of its role in self-management, preferably with a customized written asthma action plan

Asthma Impairment and Risk Questionnaire (AIRQ™)



Asthma Impairment and Risk Questionnaire (AIRQ™)

For use in patients 12 years and older who have been diagnosed with asthma. AIRQ™ is intended to be part of an asthma clinic visit. Please answer all of the questions below.

In the past 2 weeks, has coughing, wheezing, shortness of breath, or chest tightness:

- Bothered you during the day on more than 4 days? Yes No
- Woke you up from sleep more than 1 time? Yes No
- Limited the activities you want to do every day? Yes No
- Caused you to use your rescue inhaler or nebulizer every day? Yes No

In the past 2 weeks:

- Did you have to limit your social activities (such as visiting with friends/relatives or playing with pets/children) because of your asthma? Yes No
- Did coughing, wheezing, shortness of breath, or chest tightness limit your ability to exercise? Yes No
- Did you feel that it was difficult to control your asthma? Yes No

In the past 12 months, has coughing, wheezing, shortness of breath, or chest tightness:

- Caused you to take steroid pills or shots, such as prednisone or Medrol? Yes No
- Caused you to go to the emergency room or have unplanned visits to a health care provider? Yes No
- Caused you to stay in the hospital overnight? Yes No

Total YES Answers

What Does My AIRQ™ Score Mean?

The AIRQ™ is a tool to help your health care providers see how you control your asthma. This score tells you how well you control your asthma. The higher your score, the better you control your asthma. A score of 100 means you have the best control. A score of 0 means you have the worst control. The AIRQ™ is a tool to help your health care providers see how you control your asthma. This score tells you how well you control your asthma. The higher your score, the better you control your asthma. A score of 100 means you have the best control. A score of 0 means you have the worst control.

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- Caused you to stay in the hospital overnight? Yes No

Total YES Answers

*Medrol (Dex, Inc.) or methylprednisolone. The trademarks depicted above are the property of their respective owners. Please see all prescribing information for all products.

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Health Care Providers and Patients Take Action Together to Control Asthma



Asthma Control Test™ (ACT) is:

- ▶ A quick test that provides a numerical score to assess asthma control.
- ▶ Recognized by the National Institutes of Health (NIH) in its 2007 asthma guidelines.¹
- ▶ Clinically validated against spirometry and specialist assessment.²

PATIENTS:

1. Answer each question and write the answer number in the box to the right of each question.
2. Add your answers and write your total score in the TOTAL box shown below.
3. Discuss your results with your doctor.

1. In the past 4 weeks, how much of the time did your asthma keep you from getting as much done at work, school or at home?

| | | | | | | | | | |
|-----------------|---|------------------|---|------------------|---|----------------------|---|------------------|---|
| All of the time | 1 | Most of the time | 2 | Some of the time | 3 | A little of the time | 4 | None of the time | 5 |
|-----------------|---|------------------|---|------------------|---|----------------------|---|------------------|---|

SCORE

2. During the past 4 weeks, how often have you had shortness of breath?

| | | | | | | | | | |
|----------------------|---|------------|---|---------------------|---|----------------------|---|------------|---|
| More than once a day | 1 | Once a day | 2 | 3 to 6 times a week | 3 | Once or twice a week | 4 | Not at all | 5 |
|----------------------|---|------------|---|---------------------|---|----------------------|---|------------|---|

3. During the past 4 weeks, how often did your asthma symptoms (wheezing, coughing, shortness of breath, chest tightness or pain) wake you up at night or earlier than usual in the morning?

| | | | | | | | | | |
|-------------------------|---|----------------------|---|-------------|---|---------------|---|------------|---|
| 4 or more nights a week | 1 | 2 or 3 nights a week | 2 | Once a week | 3 | Once or twice | 4 | Not at all | 5 |
|-------------------------|---|----------------------|---|-------------|---|---------------|---|------------|---|

4. During the past 4 weeks, how often have you used your rescue inhaler or nebulizer medication (such as albuterol)?

| | | | | | | | | | |
|-------------------------|---|----------------------|---|-----------------------|---|---------------------|---|------------|---|
| 3 or more times per day | 1 | 1 or 2 times per day | 2 | 2 or 3 times per week | 3 | Once a week or less | 4 | Not at all | 5 |
|-------------------------|---|----------------------|---|-----------------------|---|---------------------|---|------------|---|

5. How would you rate your asthma control during the past 4 weeks?

| | | | | | | | | | |
|-----------------------|---|-------------------|---|---------------------|---|-----------------|---|-----------------------|---|
| Not controlled at all | 1 | Poorly controlled | 2 | Somewhat controlled | 3 | Well controlled | 4 | Completely controlled | 5 |
|-----------------------|---|-------------------|---|---------------------|---|-----------------|---|-----------------------|---|

TOTAL

If your score is 19 or less, your asthma may not be under control.

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Asthma Control Test is a trademark of QualityMetric Incorporated.
The Asthma Control Test is for people with asthma 12 years and older.

HEALTHCARE PROVIDER:

- ▶ Include the ACT score in your patient's chart to track asthma control.

References: 1. US Department of Health and Human Services, National Institutes of Health, National Heart, Lung and Blood Institute. *Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma (EPR-3 2007)*. NIH Item No. 08-4051. <http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm>. Accessed September 10, 2007. 2. Nathan RA et al. *J Allergy Clin Immunol* 2004;113:59-65.

Thank you

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