

TEAM ASTHMA: BACK ON TRACK  
Preconference Session  
August 4, 2022  
SMART Therapy and Asthma  
Management in Special Populations

**SMART Therapy: Children Under 12 years of Age**

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**Objectives:**

- The learner will be able to describe how a SMART asthma management plan is different from a standard asthma plan.
- The learner will be able to name the two currently available medications that are appropriate for a SMART asthma management plan.

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## 2020 FOCUSED UPDATES TO THE Asthma Management Guidelines

*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](https://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

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What is SMART?  
Single Maintenance And Reliever Therapy

Who?  
Patients with asthma 5 years of age and older requiring step 3 and 4 treatment

Which medications can be SMART?  
ICS/LABA: formoterol only

Advair  
AirDuo  
Wixela Inhub-all contain salmeterol and should not be prescribed as SMART

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2020 FOCUSED UPDATES TO THE Asthma Management Guidelines 4 SINGLE MAINTENANCE AND RELIEVER THERAPY (SMART) IMPLEMENTATION GUIDANCE AND CONSIDERATIONS FOR SHARED DECISION MAKING

- Target population: Individuals 4 years and older with a severe exacerbation in the prior year are particularly good candidates for SMART to reduce exacerbations.
  - Who should not receive this treatment: Do not use ICS/formoterol as reliever therapy in individuals taking ICS/salmeterol as maintenance therapy.
  - Treatment: Inhaled ICS/formoterol in a single inhaler. This form of therapy has only been studied with formoterol as the long-acting beta2-agonist (LABA).
- \*SMART is appropriate for Step 3 (low-dose ICS) and Step 4 (medium-dose ICS) treatment.
- \*Individuals whose asthma is uncontrolled on maintenance ICS-LABA with SABA as quick-relief therapy should receive the preferred SMART if possible before moving to a higher step of therapy.
- \*ICS-formoterol should be administered as maintenance therapy with 1–2 puffs once or twice daily (depending on age, asthma severity, and ICS dose in the ICS-formoterol preparation) and 1–2 puffs as needed for asthma symptoms.
- \*Maximum number of puffs per day is 8 (36 mcg formoterol) for children ages 4–11 years and 12 (54 mcg formoterol) for individuals ages 12 years and older.

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2020 FOCUSED UPDATES TO THE Asthma Management Guidelines

- \*Advise individuals to contact their physician if they need to exceed maximum number of puffs.
- \*Dose of formoterol was based on 4.5 mcg/inhalation, the most common preparation used in the studies reviewed.
- Potential benefits: In studies this treatment consistently reduced asthma exacerbations requiring unscheduled medical visits or systemic corticosteroids and in some studies improved asthma control and quality of life. Reduced exposure to oral corticosteroids and to ICS treatment suggest that the intervention might reduce future corticosteroid-associated harms.
- Potential risks: Studies found no difference in documented harms between this type of therapy and daily ICS, or ICS-LABA, with SABA as quick relief therapy.
  - Other considerations: 9 In children ages 4–11 years, there may be a lower risk of growth suppression among those taking SMART versus daily higher-dose ICS treatment. 9 This recommendation might not be appropriate for some individuals with asthma because of cost, formulary considerations, or medication intolerance. 9 A 1-month supply of ICS-formoterol medication that is sufficient for maintenance therapy may not last a month if the inhaler is used for reliever therapy as well.

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**2020 FOCUSED UPDATES TO THE Asthma Management Guidelines**      **CLINICIAN'S GUIDE**

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

		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>	Intermittent Asthma PRN SABA and At the start of RTI: Add short course daily ICS <sup>▲</sup>	Daily low-dose ICS and PRN SABA	Daily low-dose ICS-LABA and PRN SABA <sup>▲</sup> 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,<sup>▲</sup> 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.

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**The Children's Hospital of Philadelphia**  
Asthma Care Plan

Rinse mouth after taking inhaled medicines.  
Refill medicines before they run out!

**Feeling Good (GREEN Zone)**      **No Asthma Symptoms: Under Control**  
Take your Green Zone Medications EVERYDAY, even when you have no symptoms

- Take 2 puff(s) of Symbicort Inhaler 160/4.5 mcg with a spacer 2 time(s) a day - everyday!
- Take 1 Tablet of Singulair 5mg 1 time(s) a day - everyday!
- Take 1 puff(s) of Symbicort Inhaler with a spacer 15-30 minutes before exercise.

**Feeling Bad (YELLOW Zone)**      **Asthma Symptoms: Not Under Control**  
Coughing | Shortness of breath | Wheezing | Chest tightness or pain | Trouble playing or exercising | Cold symptoms getting worse

- Take 1 puff(s) of Symbicort Inhaler 160/4.5 mcg with a spacer up to every 6 hr(s) as needed. (Maximum number of Symbicort is 8 puffs in 24 hours.)
- Continue 1 Tablet of Singulair 5mg 1 time(s) a day.

Call your doctor's office within 1 day. [Redacted] at 267-425-9800 if symptoms get worse OR don't start to get better!  
Call your doctor's office [Redacted] if symptoms last longer than 7 days.  
If symptoms are gone, return to Feeling Good (Green Zone) instructions.

**Feeling Worse (RED Zone)**      **Asthma Emergency**  
Breathing hard | Breathing fast | Cannot talk | Cannot walk | Cannot play | Medicine is not helping

**☎ If needing Symbicort more than 8 puffs in 24 hours, CALL 911 OR go to the EMERGENCY ROOM.**

Special Instructions: CHOP Pulmonary Medicine 215 590 3749 Call if you think [Redacted] needs to start dexamethasone

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**2020 FOCUSED UPDATES TO THE Asthma Management Guidelines**      **CLINICIAN'S GUIDE**

### AGES 5-11 YEARS: STEPWISE APPROACH FOR MANAGEMENT OF ASTHMA

	Management of Persistent Asthma in Individuals Ages 5-11 Years					
	Intermittent Asthma					
Treatment	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6
<b>Preferred</b>	PRN SABA	Daily low-dose ICS and PRN SABA	Daily and PRN combination low-dose ICS-formoterol <sup>▲</sup>	Daily and PRN combination medium-dose ICS-formoterol <sup>▲</sup>	Daily high-dose ICS-LABA and PRN SABA	Daily high-dose ICS-LABA + oral systemic corticosteroid and PRN SABA
<b>Alternative</b>		Daily LTRA,* or Cromolyn,* or Nedocromil,* or Theophylline,* and PRN SABA	Daily medium-dose ICS and PRN SABA or Daily low-dose ICS-LABA, or daily low-dose ICS + LTRA,* or daily low-dose ICS + Theophylline,* and PRN SABA	Daily medium-dose ICS-LABA and PRN SABA or Daily medium-dose ICS + LTRA* or daily medium-dose ICS + Theophylline,* and PRN SABA	Daily high-dose ICS + LTRA* or daily high-dose ICS + Theophylline,* and PRN SABA	Daily high-dose ICS + LTRA* + oral systemic corticosteroid or daily high-dose ICS + Theophylline* + oral systemic corticosteroid, 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 <sup>▲</sup>				Consider Omalizumab <sup>***▲</sup>	

**Assess Control**

- First check adherence, inhaler technique, environmental factors,<sup>▲</sup> 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.

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## Combination: ICS/LABAs



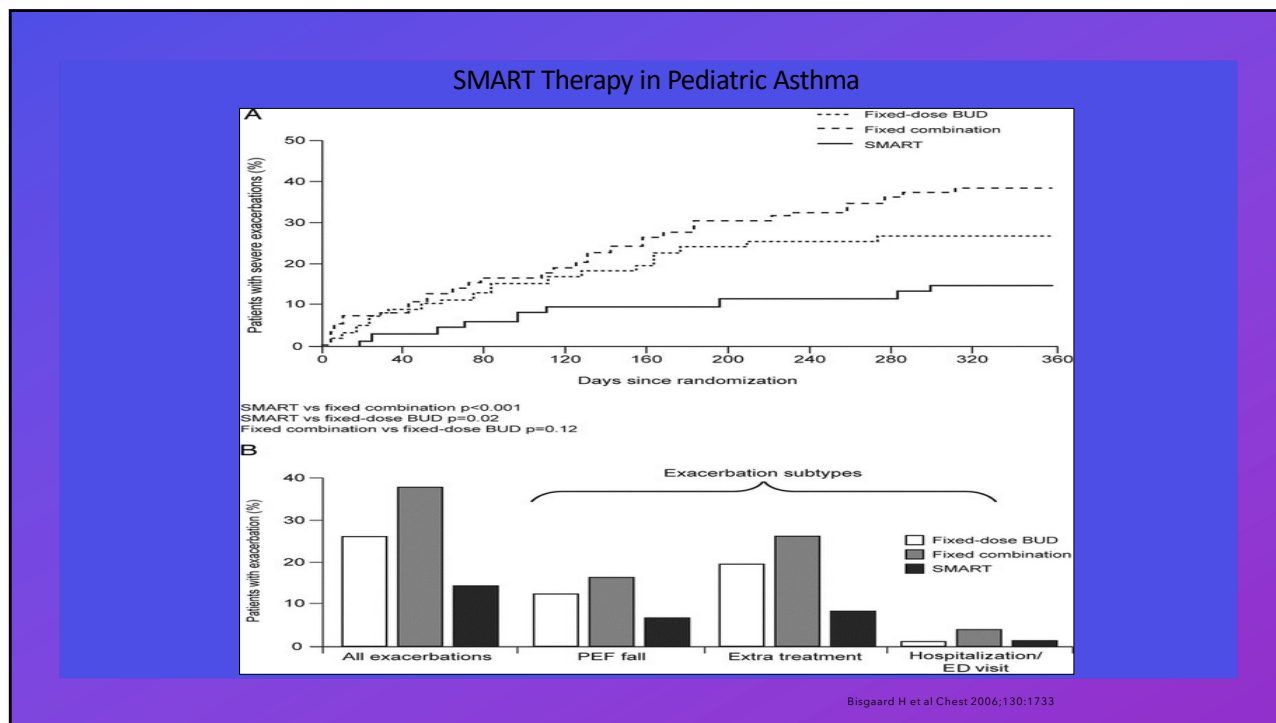
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## SMART Only two options:

**Dulera:** mometasone and formoterol: 50 mcg/5 mcg, 100 mcg/5mcg, 200 mcg/5 mcg

**Symbicort:** budesonide and formoterol: 80 mcg/4.5 mcg, 160 mcg/4.5 mcg

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## SMART Considerations

**Do SMART if**

- Frequent exacerbations
- Frequent SABA use
- Poor adherence to daily therapy
- Ability to recognize and treat symptoms early
- Patient/Parent preference

**Hold off on SMART if**

- Poor perceivers
- Over perceivers
- Doing well on current therapy
- Cost - high co-pays
- Insurance formulary issues
- Patient/Parent preference

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## Talking Points for Parents

### Frequent use of SABA alone increases risk:

- Severe exacerbations
- Death from asthma

SMART decreases the  
risk of severe  
exacerbations

ICS/Formoterol is  
**SAFE**

SMART gives **better**  
outcomes with **lower**  
ICS dosing

**Formoterol**: works as  
fast as albuterol but  
lasts longer

**SMART** inhaler will  
**replace** albuterol for  
quick relief