



GETTING SMART WITH A 2022 ASTHMA UPDATE

Cassandra White, PharmD, BCACP, BCGP

Associate Professor of Pharmacy Practice
Husson University College of Health and Pharmacy

October 14, 2022

STATEMENT OF DISCLOSURE

- I have no conflicts of interest

ASTHMA LEARNING OBJECTIVES

- Recall key updates to pharmacological management of asthma based on the 2022 Global Initiative for Asthma (GINA) report
- Describe SMART (Single Maintenance And Reliever Therapy) and how to utilize it for asthma patients
- Identify asthma patients eligible for a step-up or step-down of their treatment
- Explain how to refer a patient to the Maine Asthma Self-Management Education Program



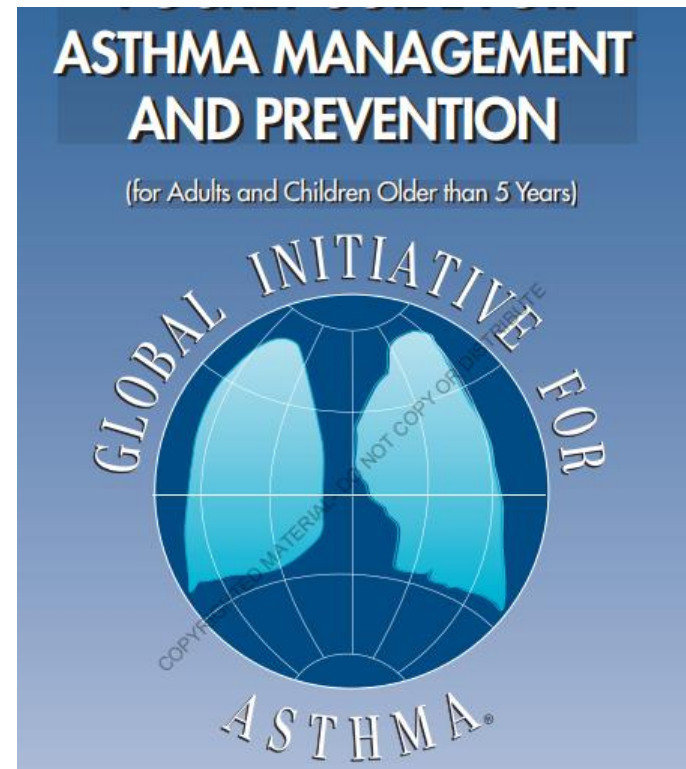
LEARNING OBJECTIVE 1:

4

Recall key updates to pharmacological management of asthma based on the 2022 Global Initiative for Asthma (GINA) report

HOT OFF THE PRESS! THE GINA REPORT

- The Global Strategy for Asthma Management and Prevention, Global Initiative for Asthma (GINA)
Updated 2022
 - <http://www.ginasthma.org>
 - GINA established by the WHO and NHLBI in 1993
 - Global evidence-based strategy updated annually



QUESTION

- True or False:

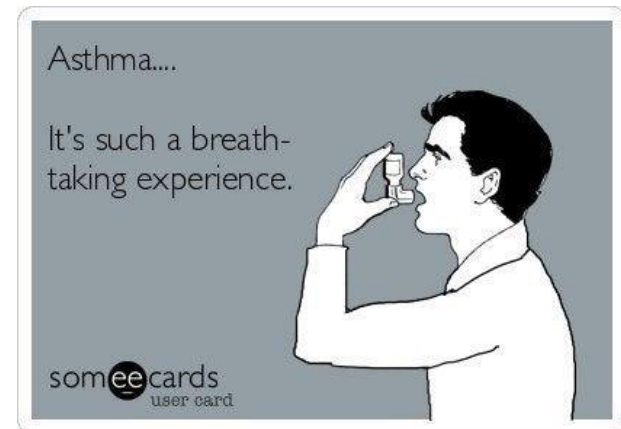
SABA monotherapy (e.g. albuterol) is recommended for the treatment of mild asthma.

ANSWER

- True or **False**: SABA monotherapy is recommended for the treatment of mild asthma.
- Inhaled SABA has been first-line treatment for asthma for 50+ years
 - GINA recommendations now advise **AGAINST** SABA monotherapy (updated 2019)

MAJOR CHANGES IN GINA GUIDELINES

<http://www.ginasthma.org>



<https://i.pining.com/originals/a4/74/89/a47489c66c723cf966319a5c19b18762.jpg>

- For safety, GINA **no longer recommends treatment with short-acting beta2-agonists (SABA) alone**
- GINA now recommends that **all** adults and adolescents with asthma should receive **either symptom-driven** (in mild asthma) **or daily low dose ICS-containing controller treatment**, to reduce their risk of serious exacerbations





SABA MONOTHERAPY NO LONGER RECOMMENDED FOR ASTHMA PATIENTS

- **Regular use** of SABA associated with **adverse effects**
 - β -receptor downregulation, decreased bronchoprotection, rebound hyperresponsiveness, decreased bronchodilator effect (*Hancox, Respir Med 2000*); increased allergic response and increased eosinophilic airway inflammation (*Aldridge, AJRCCM 2000*)
 - Can lead to “vicious cycle” encouraging overuse
 - Over-use of SABA associated with **increased exacerbations** and **increased mortality** (*Suissa 1994, Nwaru 2020*)
 - Starting treatment with SABA trains the patient to regard it as their primary asthma treatment



GINA 2019: a fundamental change in asthma management

Treatment of asthma with short-acting bronchodilators **alone** is no longer recommended for adults and adolescents

Helen K. Reddel ¹, J. Mark FitzGerald², Eric D. Bateman³, Leonard B. Bacharier⁴, Allan Becker⁵, Guy Brusselle⁶, Roland Buhl⁷, Alvaro A. Cruz⁸, Louise Fleming ⁹, Hiromasa Inoue¹⁰, Fanny Wai-san Ko ¹¹, Jerry A. Krishnan¹², Mark L. Levy ¹³, Jiangtao Lin¹⁴, Søren E. Pedersen¹⁵, Aziz Sheikh¹⁶, Arzu Yorgancioglu¹⁷ and Louis-Philippe Boulet¹⁸

- Higher use of SABA is associated with adverse clinical outcomes
 - Dispensing of ≥ 3 canisters per year (average 1.7 puffs/day) is associated with higher risk of emergency department presentations (*Stanford, AAAI 2012*)
 - Dispensing of ≥ 12 canisters per year is associated with higher risk of death (*Suissa, AJRCCM 1994*)

POST-TEST QUESTION 1

- Which of the following statements best describes a major change for asthma management according to the GINA guidelines?
 - A. Treatment of asthma with short-acting bronchodilators alone is recommended for adults and adolescents
 - B. Treatment of asthma with short-acting bronchodilators alone is no longer recommended for adults and adolescents
 - C. Treatment of asthma with long-acting bronchodilators alone is recommended for adults and adolescents
 - D. Treatment of asthma with long-acting inhaled corticosteroids alone is no longer recommended for adults and adolescents

POST-TEST ANSWER 1

- Which of the following statements best describes a major change for asthma management according to the GINA guidelines?
 - A. Treatment of asthma with short-acting bronchodilators alone is recommended for adults and adolescents
 - B. Treatment of asthma with short-acting bronchodilators alone is no longer recommended for adults and adolescents**
 - C. Treatment of asthma with long-acting bronchodilators alone is recommended for adults and adolescents
 - D. Treatment of asthma with long-acting inhaled corticosteroids alone is no longer recommended for adults and adolescents

A decorative vertical bar on the left side of the slide, featuring several thin, light blue vertical stripes of varying widths. To the right of these stripes, a series of blue circles of different sizes are arranged vertically, with the largest circle at the top and smaller ones below it. The number '13' is centered within one of the medium-sized circles.

13

LEARNING OBJECTIVE 2:

Describe SMART (Single Maintenance And Reliever Therapy) and how to utilize it for asthma patients

POST-TEST QUESTION 2

- Which of the following inhalers is recommended by GINA 2022 guidelines for Single Maintenance And Reliever Therapy (SMART) for asthma?
 1. Spiriva (Tiotropium)
 2. Combivent (Ipratropium/Albuterol)
 3. Flovent (Fluticasone)
 4. Symbicort (Budesonide/Formoterol)

POST-TEST ANSWER 2

- Which of the following inhalers is recommended by GINA 2022 guidelines for Single Maintenance And Reliever Therapy (SMART) for asthma?
 1. Spiriva (Tiotropium)
 2. Combivent (Ipratropium/Albuterol)
 3. Flovent (Fluticasone)
 4. **Symbicort (Budesonide/Formoterol)**



SINGLE MAINTENANCE AND RELIEVER THERAPY (SMART)

- One combination inhaler provides patient with additional steroid doses to treat the underlying inflammation and the LABA treats the acute symptoms via bronchodilation
- **Formoterol** is preferred LABA for SMART due to rapid onset of action
- Available ICS/LABA combinations inhalers for SMART:
 - **Budesonide/Formoterol (Symbicort)** *now generic!*
 - **Mometasone/Formoterol (Dulera)**

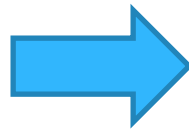
Formoterol	Vilanterol	Salmeterol
1-3 minutes	10 minutes	10-20 minutes

ASTHMA MANAGEMENT: OLD SCHOOL VS. NEW SCHOOL

Preferred therapy in
the past:

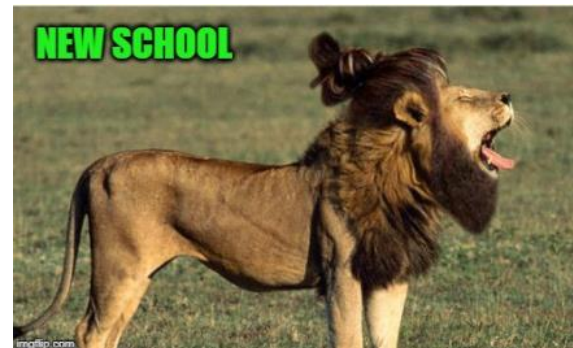
ICS +/- LABA for
maintenance

plus SABA PRN for
rescue symptoms



Most recent
evidence supports
use of SMART:

one ICS/LABA inhaler
for maintenance AND
rescue



<https://imgflip.com/tag/new+school>

MAINTENANCE VS. RESCUE TREATMENT

- Medications for asthma categorized as maintenance (controllers) or rescue (relievers)
 - **Maintenance:** long-term control medications used daily to achieve and maintain control of persistent asthma
 - **Rescue:** quick-relief medications used PRN to treat acute symptoms and exacerbations
 - SABA no longer recommended first-line in asthma
 - **Low dose ICS-formoterol as needed** is preferred rescue
 - Every asthma patient should receive a rescue inhaler!

Maintenance	Rescue
Inhaled corticosteroids (ICS)	Short-acting beta-2 agonists (SABA)
Long-acting beta-2 agonists (w/ ICS)	Systemic steroids (injection or oral)
Leukotriene modifying agents	Inhaled anticholinergics
Theophylline	Low dose ICS-formoterol
Inhaled anticholinergics	
Injectable monoclonal antibodies	

ICS = MAINSTAY OF ASTHMA TREATMENT

- **All** adults and adolescents with asthma should receive a inhaled corticosteroid steroid (**ICS**)- containing treatment for **either as needed or daily use**
 - Initiate as soon as possible after diagnosis
 - Inhaled forms = preferred delivery vehicle
 - **Inhaled corticosteroids** = most effective, first-line maintenance medication for long-term asthma control
- For most patients, treatment can be started with either:
 - **PRN low dose ICS-Formoterol*** (if not available, low dose ICS whenever SABA is taken) **or**
 - Daily low dose ICS

*preferred approach per GINA 2022

ICS: THE GOLD STANDARD FOR ASTHMA

- ICSs reduce frequency and severity of symptoms, increase lung function, improve quality of life, and prevent exacerbations
- Use **lowest dose** of ICS that maintains control
 - Risk of adverse effects increases with dose
 - Potential but small risk of adverse events with ICS well balanced by efficacy
- Adverse effects: oral candidiasis, dysphonia, upper respiratory tract infection, cough
 - Instruct patient to **rinse mouth** with water and spit after each use; can use a spacer device with MDI to prevent oral fungal infections

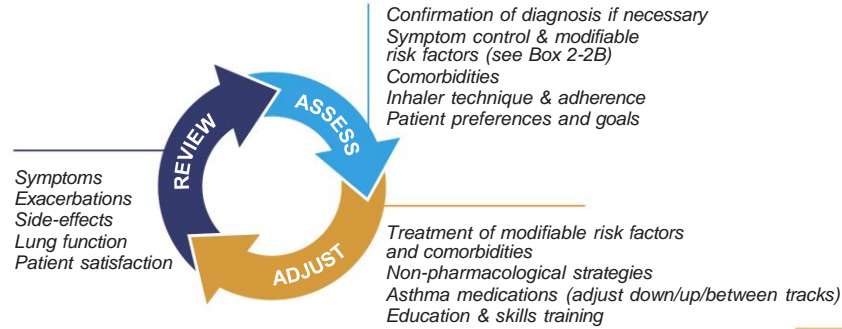
LOW-DOSE ICS + FORMOTEROL **PRN** MILD ASTHMA (SYMPTOMS \leq 4-5 DAYS/WEEK)

- Compared to PRN SABA monotherapy, low-dose ICS + Formoterol PRN prevents a hospital visit, hospitalization, or steroid burst in **~1 out of 16** adults per year
 - **Budesonide/Formoterol (Symbicort)** 80/4.5 mcg
 - 1-2 puffs PRN
 - Max 12 puffs or 54 mcg formoterol per day
 - Mometasone/Formoterol (Dulera) 100/5 mcg
- Patients have less steroid exposure and do not appear to have more exacerbations when compared with daily low-dose ICS therapy
 - > 50% of patients do not adhere to daily ICS treatment!
- **Cost** may be a barrier to adopting new guidance

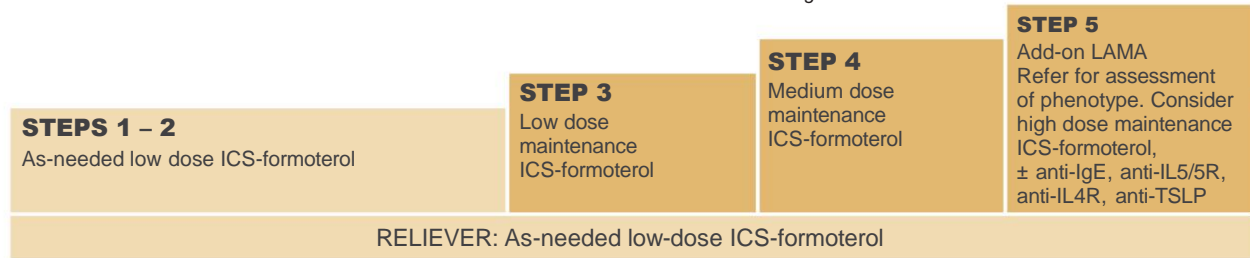
Adults & adolescents 12+ years

Personalized asthma management

Assess, Adjust, Review
for individual patient needs

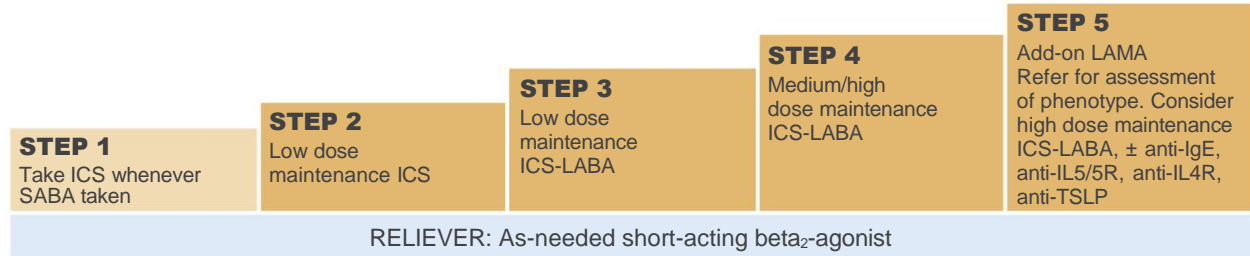


CONTROLLER and **PREFERRED RELIEVER** (Track 1). Using ICS-formoterol as reliever reduces the risk of exacerbations compared with using a SABA reliever



See GINA severe asthma guide

CONTROLLER and **ALTERNATIVE RELIEVER** (Track 2). Before considering a regimen with SABA reliever, check if the patient is likely to be adherent with daily controller



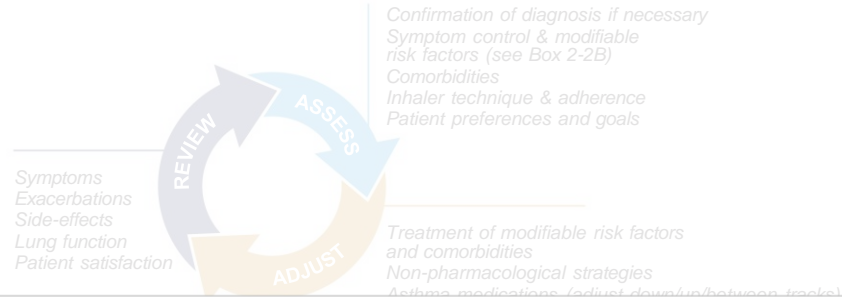
Other controller options for either track (limited indications, or less evidence for efficacy or safety)

	Low dose ICS whenever SABA taken, or daily LTRA, or add HDM SLIT	Medium dose ICS, or add LTRA, or add HDM SLIT	Add LAMA or LTRA or HDM SLIT, or switch to high dose ICS	Add azithromycin (adults) or LTRA. As last resort consider adding low dose OCS but consider side-effects
--	--	---	--	--

Adults & adolescents 12+ years

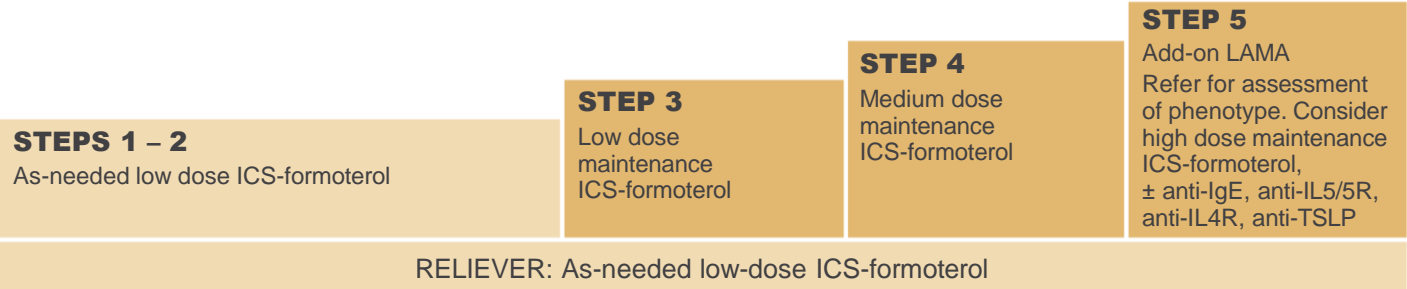
Personalized asthma management

Assess, Adjust, Review
for individual patient needs



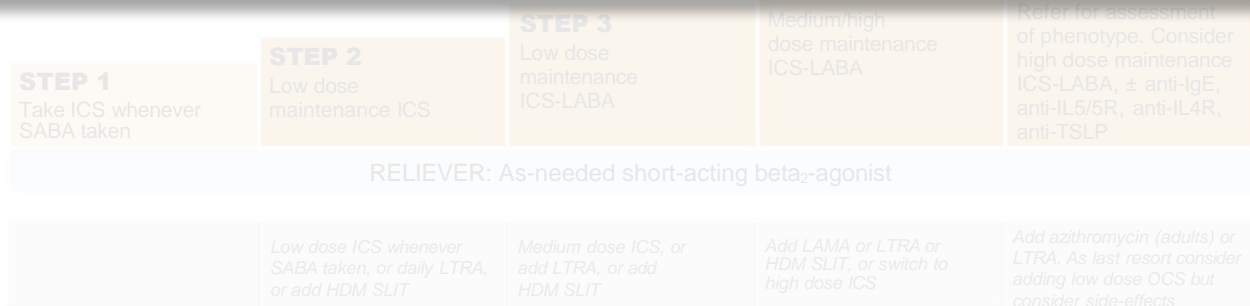
CONTROLLER and **PREFERRED RELIEVER**

(Track 1). Using ICS-formoterol as reliever reduces the risk of exacerbations compared with using a SABA reliever



CONTROLLER and **ALTERNATIVE RELIEVER** (Track 2). Before considering a regimen with SABA reliever, check if the patient is likely to be adherent with daily controller

Other controller options for either track (limited indications, or less evidence for efficacy or safety)

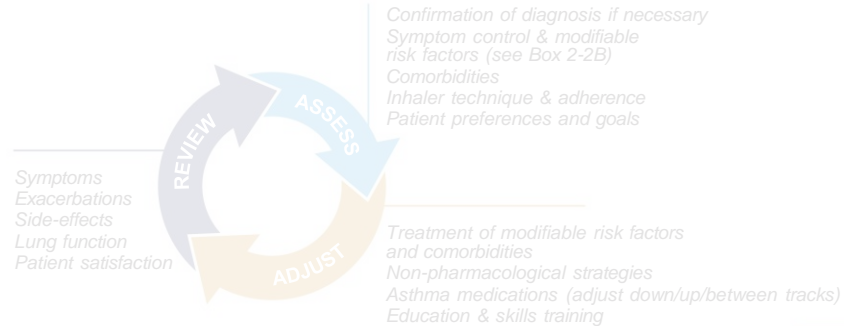




Adults & adolescents 12+ years

Personalized asthma management

Assess, Adjust, Review
for individual patient needs



CONTROLLER and **PREFERRED RELIEVER**
(Track 1). Using ICS-formoterol

STEPS 1 – 2
As-needed low dose ICS-formoterol

STEP 3
Low dose maintenance ICS-formoterol

STEP 4
Medium dose maintenance ICS-formoterol

STEP 5
Add-on LAMA
Refer for assessment of phenotype. Consider high dose maintenance ICS-formoterol, ± anti-IgE, anti-IL5/5R.

CONTROLLER and **ALTERNATIVE RELIEVER**
(Track 2). Before considering a regimen with SABA reliever, check if the patient is likely to be adherent with daily controller

STEP 1
Take ICS whenever SABA taken

STEP 2
Low dose maintenance ICS

STEP 3
Low dose maintenance ICS-LABA

STEP 4
Medium/high dose maintenance ICS-LABA

STEP 5
Add-on LAMA
Refer for assessment of phenotype. Consider high dose maintenance ICS-LABA, ± anti-IgE, anti-IL5/5R, anti-IL4R, anti-TSLP

RELIEVER: As-needed short-acting beta₂-agonist

Other controller options for either track (limited indications, or less evidence for efficacy or safety)

Low dose ICS whenever SABA taken, or daily LTRA, or add HDM SLIT

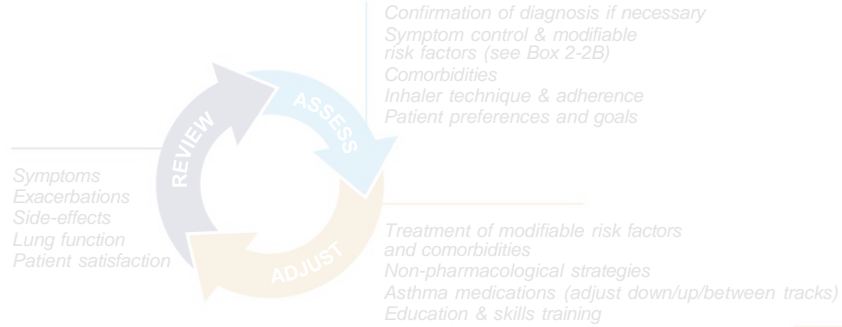
Medium dose ICS, or add LTRA, or add HDM SLIT

Add LAMA or LTRA or HDM SLIT, or switch to high dose ICS

Add azithromycin (adults) or LTRA. As last resort consider adding low dose OCS but consider side-effects

Adults & adolescents 12+ years

Personalized asthma management
Assess, Adjust, Review
for individual patient needs



CONTROLLER and **PREFERRED RELIEVER** (Track 1). Using ICS-formoterol as reliever reduces the risk of exacerbations compared with using a SABA reliever



See GINA severe asthma guide

CONTROLLER and **ALTERNATIVE RELIEVER**



Other controller options for either track (limited indications, or less evidence for efficacy or safety)

	Low dose ICS whenever SABA taken, or daily LTRA, or add HDM SLIT	Medium dose ICS, or add LTRA, or add HDM SLIT	Add LAMA or LTRA or HDM SLIT, or switch to high dose ICS	Add azithromycin (adults) or LTRA. As last resort consider adding low dose OCS but consider side-effects
--	--	---	--	--

evidence for efficacy or safety

of moderate quality

high quality

consider side-effects



LEARNING OBJECTIVE 3:

26

Identify asthma patients eligible for a step-up or step-down of their treatment

POLLEVERYWHERE

🌐 When poll is active, respond at **PolleEv.com/whiteca**

📱 Text **WHITECA** to **22333** once to join

What are the goals of asthma treatment?

ASTHMA CAN BE EFFECTIVELY TREATED!

- Goals of Effective Asthma Control:
 - Avoid troublesome symptoms during day and night
 - Need little or no reliever medication
 - Have productive, physically active lives
 - Have normal or near normal lung function
 - Avoid serious asthma flare-ups
 - Also known as **exacerbations** or attacks
- Always customize asthma treatment to the individual!



https://www.cafepress.com/mf/78567799/the-prednisone_sticker?productId=854613473&utm_source=pinterest&utm_tracking=social&utm_content=pdp&epik=dj0yJnU9S2NMZ1ZSZmxDTVBOWE9SNG1rZIRfd2JzOTBxUXd rbVMmcD0wJm49RnJydm5PY0FPNI9nVGFJdFA4MXozZyZ0PUFBQUFBR01rZkFJ

VERIFY INHALER TECHNIQUE & ADHERENCE!

- ~80% of patients use their inhalers **IN**correctly
 - Little to no medication reaches the lungs
 - Contributes to poor symptom control and exacerbations
- >50% of patients do not take their maintenance asthma medications as prescribed
 - Most inhalers designed as 1-month (30-day) supplies
- If prescribed > 1 inhalation at a time, counsel to wait 60 seconds between puffs
- > 1 Inhaler: administer bronchodilator (e.g. LABA) first to open airways quickly and then administer ICS

LONG-ACTING BETA-2 AGONISTS (LABAs)

Black Box Warning for LABA Monotherapy: Increased risk of asthma-related deaths



- Should only be used as **adjunctive therapy** in patients currently receiving, but not adequately controlled, on a long-term asthma control medication (i.e. ICS)
- **Consider adding a LABA to a low or medium dose of ICS rather than using a higher dose of ICS**
 - Combination ICS/LABA inhalers improve adherence and are usually more cost effective
 - Example: Advair (fluticasone + salmeterol) 1 inh BID vs. Flovent (fluticasone) 1 inh BID + Serevent (salmeterol) 1 inh BID

STEP UP AND STEP DOWN THERAPY

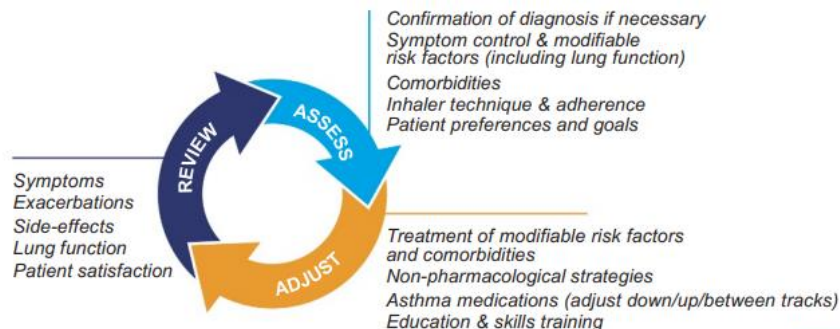


- Assess asthma control/severity for step-up or step-down opportunities
 - Time between follow-ups depends on level of control
- If symptoms and/or exacerbations persist for **2-3 months** despite controller treatment, a **step-up** should be considered
 - Consider a step-up if having **symptoms** and/or use of **PRN inhaler > 2 days/week**
- If asthma has been well controlled for **3 months**, a **step-down** in therapy should be considered
 - Decrease ICS dose by 25-50% at 2-3 month intervals

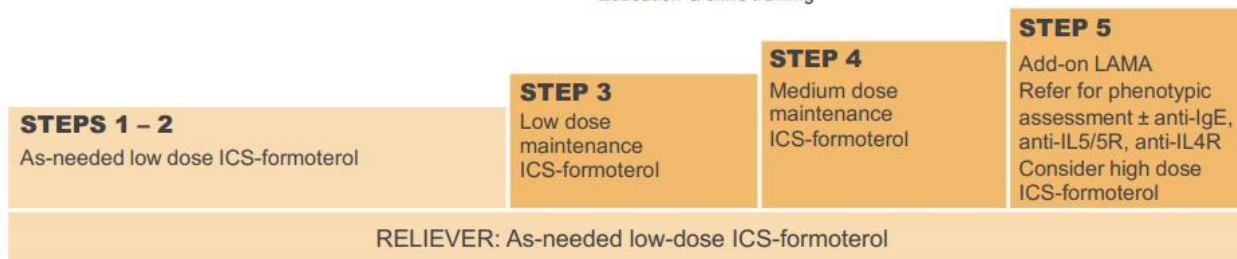
Adults & adolescents 12+ years

Personalized asthma management

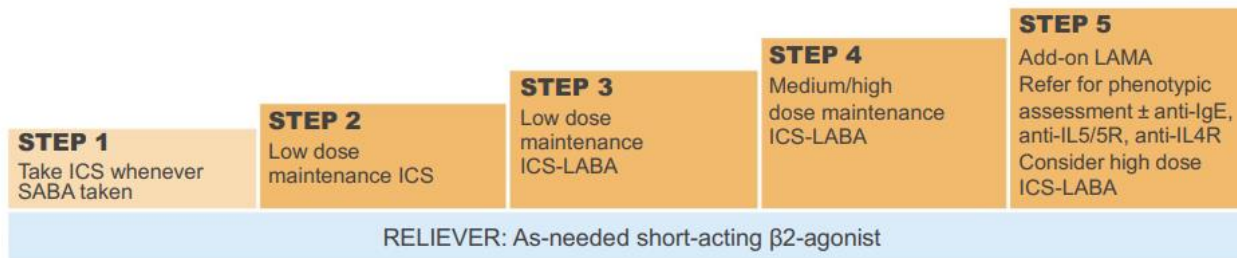
Assess, Adjust, Review
for individual patient needs



CONTROLLER and **PREFERRED RELIEVER**
(Track 1). Using ICS-formoterol as reliever reduces the risk of exacerbations compared with using a SABA reliever



CONTROLLER and **ALTERNATIVE RELIEVER**
(Track 2). Before considering a regimen with SABA reliever, check if the patient is likely to be adherent with daily controller



Other controller options for either track

	Low dose ICS whenever SABA taken, or daily LTRA, or add HDM SLIT	Medium dose ICS, or add LTRA, or add HDM SLIT	Add LAMA or LTRA or HDM SLIT, or switch to high dose ICS	Add azithromycin (adults) or LTRA; add low dose OCS but consider side-effects
--	--	---	--	---

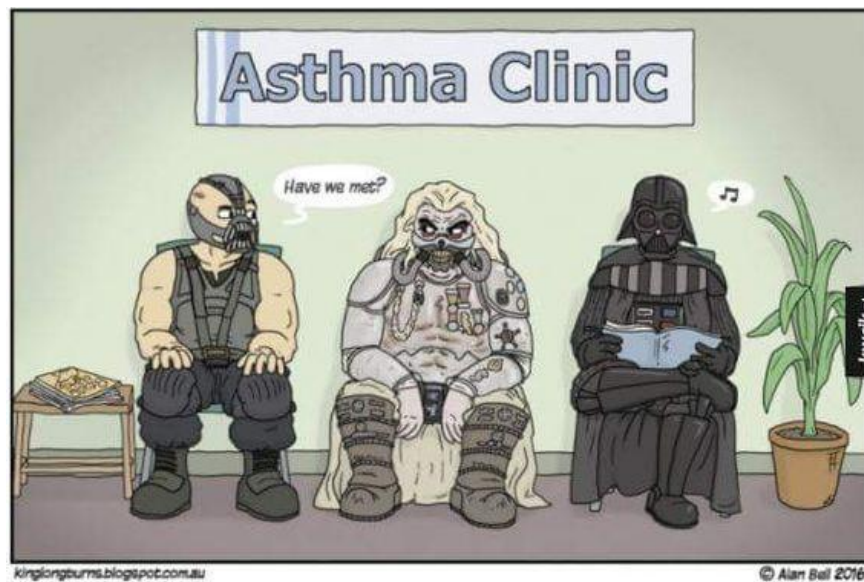
POST-TEST QUESTION 3

- A 30-year-old female was diagnosed with asthma 3 months ago. At that time, her symptoms were only intermittent and she was given a prescription for Symbicort (Budesonide/Formoterol 80/4.5) to use 1-2 puffs as needed. She presents to the clinic today with worsening symptoms and nighttime awakenings twice weekly. The only medication she takes is Symbicort as needed, which she reports using at least 3 times per week. Which of the following is the best recommendation for this patient?
 - A. Step-Up therapy by adding Albuterol 1-2 puffs as needed to current regimen
 - B. Step-Up therapy by switching to Breztri (Budesonide/Glycopyrrolate/Formoterol 160/9/4.8) 2 puffs twice daily
 - C. Step-Up therapy by using Symbicort scheduled two puffs twice daily in addition to as needed
 - D. Step-Down therapy by discontinuing Symbicort and switching to Albuterol 1-2 puffs as needed

POST-TEST ANSWER 3

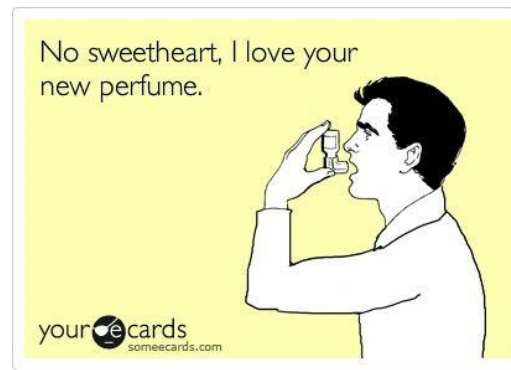
- A 30-year-old female was diagnosed with asthma 3 months ago. At that time, her symptoms were only intermittent and she was given a prescription for Symbicort (Budesonide/Formoterol 80/4.5) to use 1-2 puffs as needed. She presents to the clinic today with worsening symptoms and nighttime awakenings twice weekly. The only medication she takes is Symbicort as needed, which she reports using at least 3 times per week. Which of the following is the best recommendation for this patient?
 - A. Step-Up therapy by adding Albuterol 1-2 puffs as needed to current regimen
 - B. Step-Up therapy by switching to Breztri (Budesonide/Glycopyrrolate/Formoterol 160/9/4.8) 2 puffs twice daily
 - C. **Step-Up therapy by using Symbicort scheduled two puffs twice daily in addition to as needed**
 - D. Step-Down therapy by discontinuing Symbicort and switching to Albuterol 1-2 puffs as needed

ASTHMA SUMMARY



- SABA monotherapy (e.g. albuterol) no longer recommended
 - Utilize **Low-Dose ICS-Formoterol** initially PRN in mild asthma
 - ICS first-line for maintenance treatment (lowest effective dose)
 - LABAs used as adjunct therapy, **NOT** monotherapy
- Single Maintenance And Reliever Therapy (**SMART**) means using one ICS/LABA inhaler (e.g. Budesonide/Formoterol) for maintenance AND rescue treatment

ASTHMA SUMMARY



<https://i.pining.com/originals/54/03/f8/5403f8caa50a50ca6ac7c8560d0c6726.jpg>

- Monitor for opportunities to **step-up** or **step-down** asthma treatment
 - If symptoms/exacerbations persist for 2-3 months despite controller treatment, a step-up should be considered
 - If asthma has been well controlled for 3 months, a step-down in therapy should be considered
- The **Maine Asthma Self-Management Education Program** is a free program in Maine that helps people learn about asthma and steps that they can take to better control asthma symptoms

A decorative graphic on the left side of the slide. It features a vertical stack of stripes in various shades of blue and white. Overlaid on these stripes are several circles of different sizes and shades of blue. One large circle is positioned near the top, and several smaller circles are scattered below it, some overlapping the stripes.

37

LEARNING OBJECTIVE 4:

Explain how to refer a patient to the Maine Asthma Self-Management Education Program

POST-TEST QUESTION 4

- Which of the following is a free program in Maine that helps people learn about asthma and steps that they can take to better control asthma symptoms?
 - A. Maine Asthma Self-Management Education Program
 - B. Maine Breast and Cervical Health Program
 - C. Maine Cardiovascular Health Program
 - D. Maine Diabetes Prevention and Control Program

POST-TEST ANSWER 4

- Which of the following is a free program in Maine that helps people learn about asthma and steps that they can take to better control asthma symptoms?
 - A. **Maine Asthma Self-Management Education Program**
 - B. Maine Breast and Cervical Health Program
 - C. Maine Cardiovascular Health Program
 - D. Maine Diabetes Prevention and Control Program



<https://i.pining.com/originals/24/c6/35/24c6355ec1aa19fd616b26392e890ec8.jpg>

**THANK YOU FOR YOUR TIME
AND ATTENTION! 😊**

PLEASE WELCOME ERIC FROHMBERG!

Eric Frohberg

he/him/his

Health Program Manager
Asthma Prevention and Control Program

Department of Health and Human Services
Maine Center for Disease Control and Prevention - Preserve ~Promote ~ Protect
Division of Disease Prevention
Chronic Disease Prevention and Control

286 Water Street, 4th Floor
11 State House Station
Augusta, ME 04333-0011

Tel: (207) 287-7302

Fax: (207) 287-4631

TTY: Call 711 (Maine Relay)

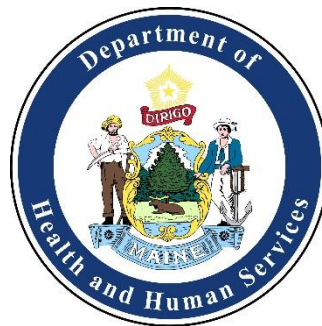
Email: Eric.J.Frohberg@maine.gov

<https://www.maine.gov/dhhs/mecdc/population-health/mat/>

Asthma Self-Management Education Program

Eric Frohberg

October 14, 2022



Maine Asthma Self-Management Education Program



Learn to control asthma so it doesn't control you

What is it?

Maine Asthma Self-Management Education is a free program that helps you learn about asthma and the important things you can do to help manage it.

How can it help?

Asthma can't be cured, but it can be managed. Studies show education programs like these can help improve asthma control when added to medical care. This means you'll be able to enjoy an active, healthy life with fewer missed days at school or work.

Enroll today

Call Maine Public Health Nursing at (888) 644-1130 to enroll yourself or refer someone.

What does it provide?

The Asthma Self-Management Education Program is held over two or more sessions and covers the following topics:

- Learn about asthma and what happens to your body during an asthma attack.

Maine Asthma Self-Management Education Program

Proposed Schedule for Program Completion

Pre-Enrollment

- Assess Eligibility and Enrollment



Visit 1 & Visit 2

- Module 1: Establish Rapport and Obtain Baseline Information*
- Module 2: Asthma Education*
- Module 3: Medication Assessment and Reconciliation*
- Module 4: Asthma Action Plan*
- Module 5: Tobacco Use and Exposure to Secondhand Smoke
- Module 6: Asthma Management and Treatment Goals
- Module 7: Home Environmental Assessment and Trigger Reduction



Post Intervention Evaluations

- One-Month Post Visits Evaluation and Reinforcement*
- Six-Months Post Module 7 Evaluation (if applicable)



*Module is mandatory in order to meet federal requirements

Next Steps / Wish List

- Refer clients with asthma to Public Health Nursing: 888-644-1130
- Contact us for resources and feedback.
- Begin discussions on pharmacist implementation of ASMEP?

Questions/Comments

Eric Frohberg
Program Manager
Eric.J.Frohberg@maine.gov
287-7302

Leigh Riley
Leigh.Riley@maine.gov
287-4083

maine.gov/dhhs/asthma

PHN ASMEP: 888-644-1130

