

# The National Institute of Health (NIH) Asthma Guidelines Updates

Alan P. Baptist, MD, MPH, FAAAAI

Professor of Medicine and Division Head  
Division of Allergy & Clinical Immunology  
Henry Ford Health / Michigan State University  
Detroit, MI



1

## Disclosure

Consultant: Astra Zeneca; GSK; Teva

Research Grant: American Lung Association; Astra Zeneca;  
GSK; Novartis; Takeda



2

## Objectives

- Identify the past and current ways of classifying asthma
- To apply guideline changes in asthma diagnosis, monitoring, and treatment based on evidence and shared decision making
- To determine the strengths and limitations of the NIH Asthma Management Guidelines

**HENRY FORD HEALTH**

3

## Question?

- What is asthma?

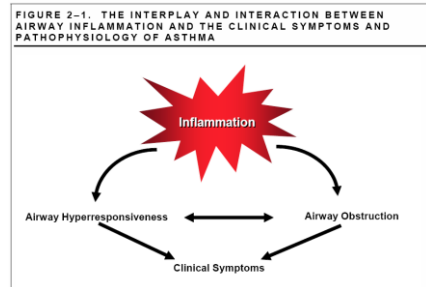
**HENRY FORD HEALTH**

4

## Definition of Asthma

“Asthma is a common chronic disorder of the airways that involves a complex interaction of airflow obstruction, bronchial hyperresponsiveness and an underlying inflammation. This interaction can be highly variable among patients and within patients over time”.

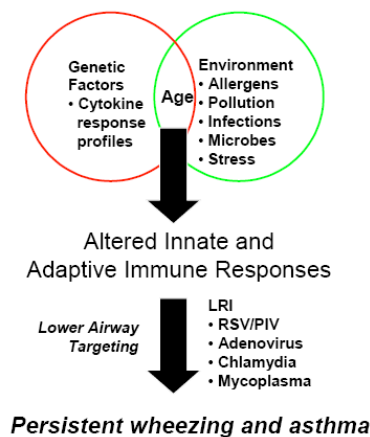
2007 NAEPP Guidelines, EPR 3- Section 2, p 12.



HENRY FORD HEALTH

5

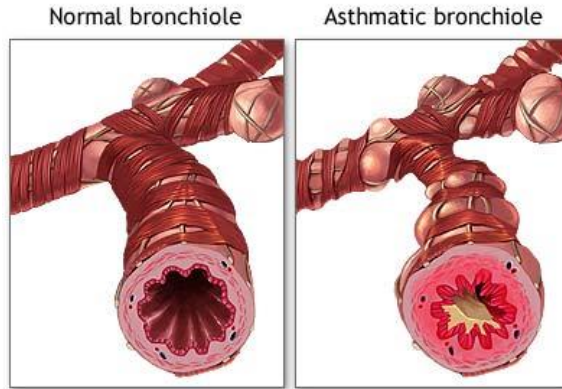
## Pathogenesis of Asthma



HENRY FORD HEALTH

6

## Normal and Asthmatic Bronchiole

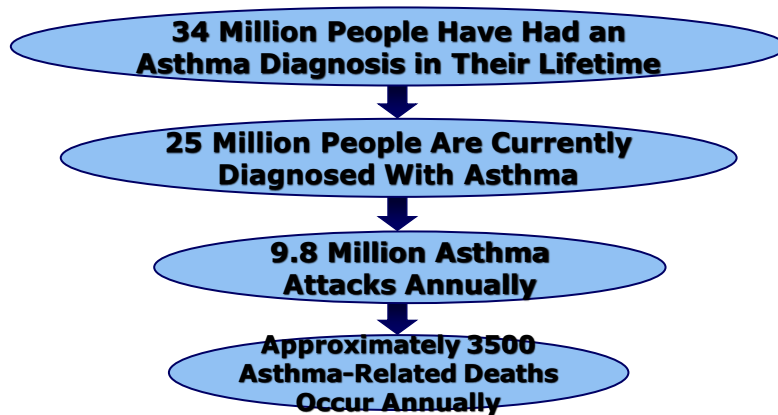


ADAM

HENRY FORD HEALTH

7

## Asthma Is Prevalent: Significant Morbidity and Mortality



**Approximately 10 People Die From Asthma Each Day**

HENRY FORD HEALTH

Available at: [https://www.cdc.gov/asthma/most\\_recent\\_national\\_asthma\\_data.htm](https://www.cdc.gov/asthma/most_recent_national_asthma_data.htm). Accessed June 2, 2024.

8

## Risk Factors for Death from Asthma

FIGURE 5-2a. RISK FACTORS FOR DEATH FROM ASTHMA

### Asthma history

Previous severe exacerbation (e.g., intubation or ICU admission for asthma)  
 Two or more hospitalizations for asthma in the past year  
 Three or more ED visits for asthma in the past year  
 Hospitalization or ED visit for asthma in the past month  
 Using > 2 canisters of SABA per month  
 Difficulty perceiving asthma symptoms or severity of exacerbations  
 Other risk factors: lack of a written asthma action plan, sensitivity to *Alternaria*

### Social history

Low socioeconomic status or inner-city residence  
 Illicit drug use  
 Major psychosocial problems

### Comorbidities

Cardiovascular disease  
 Other chronic lung disease  
 Chronic psychiatric disease

**HENRY FORD HEALTH**

9

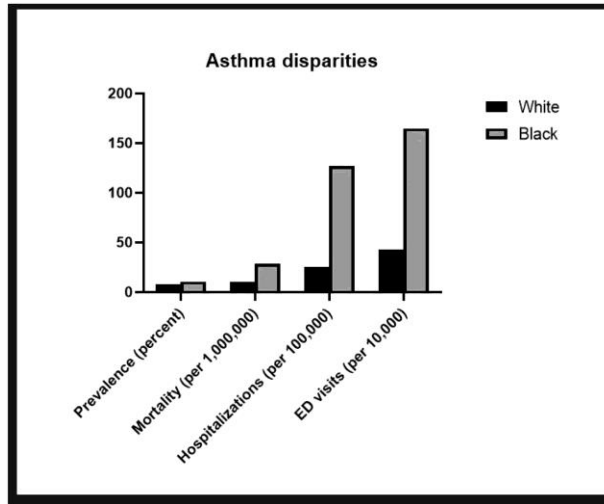
## Who to Refer to a Specialist?

- Patient has had a life-threatening asthma exacerbation
- Patient not meeting the goals of asthma therapy after 3 – 6 months
- Atypical signs or symptoms
- Additional diagnostic testing needed (skin testing, PFTs, bronchoscopy, rhinoscopy)
- Patient requires additional education
- Patient requires step 4 or higher (consider for step 3)
- Patient has had more than two bursts of steroids in past year, or has an exacerbation requiring hospitalization

**HENRY FORD HEALTH** 2007 NAEPP Guidelines, EPR 3

10

# Asthma Disparities



**HENRY FORD HEALTH+** Baptist AP, et al. Reducing Health Disparities in Asthma: How Can Progress Be Made. *J Allergy Clin Immunol Pract.* 2023 Mar;11(3):737-745.

# Asthma Disparities - SDOH



Available at: <https://www.cdc.gov/publichealthgateway/sdoh/index.html/>. Accessed Nov 20,2023.

**HENRY FORD HEALTH+**

## Asthma Disparities - SDOH

**Detroit Free Press**

### **Detroit road dust 'heavily polluted' with heavy metals, Wayne State study reveals**



**Keith Matheny**  
Detroit Free Press

Published 6:07 a.m. ET Oct. 18, 2023 | Updated 10:36 a.m. ET Oct. 18, 2023

**HENRY FORD HEALTH**

13

## All That Wheezes Is Not Asthma...

**Table 2 Differential diagnosis of difficult-to-control asthma**

Chronic obstructive pulmonary disease  
Bronchiectasis  
Vocal cord dysfunction syndrome  
Tracheobronchomalacia  
Steroid-withdrawal syndrome\*  
Churg-Strauss syndrome  
Aspirated foreign body/endobronchial obstruction  
Bronchiolitis obliterans (*e.g.*, in rheumatoid arthritis or ulcerative colitis)  
Sarcoidosis  
Disseminated strongyloidiasis  
Pulmonary thromboembolism  
Diastolic dysfunction with congestive heart failure ("cardiac asthma")

*\*Symptomatic deterioration without objective evidence for worsened airflow obstruction, because of nonrespiratory symptoms associated with oral steroid withdrawal.*

**HENRY FORD HEALTH**

*Allergy Asthma Proc. 2012;33(4):305-12*

14

## Don't Forget About Comorbidities

- Allergic upper airway disease / sinusitis
- GERD
- Obesity
- OSA
- Smoking
- Psychiatric disorders
- Medications (ACE, NSAIDS,  $\beta$  blockers)
- Hormonal influences

**HENRY FORD HEALTH**

15

## Consider Non-medical Therapies

- Adherence
- Education
- Adverse environment



**HENRY FORD HEALTH**

16



## A Patient with Asthma Is Considered Persistent (Rather Than Intermittent) If They Use Albuterol More Than How Many Times Per Week?

- A. 1
- B. 2
- C. 3
- D. 4



17

## Asthma Classification – 1997 and 2002 Guidelines

Table 3  
**Asthma Classification and Treatment Based on Severity**

Components	Intermittent	Mild Persistent	Moderate Persistent	Severe Persistent
Symptoms	≤ 2 days/week	> 2 days/week	Daily	Throughout the day
Nighttime awakenings	≤ 2/month	3–4/month	> 1/week but not nightly	Nightly
SABA use for symptom control	≤ 2 days/week	> 2 days/week but not daily; not > 1x on any day	Daily	Several times/day
Interference with normal activity	None	Minor limitation	Some limitation	Extreme limitation
Lung function	Normal FEV <sub>1</sub> during exacerbations; FEV <sub>1</sub> > 80% predicted; FEV <sub>1</sub> /FVC normal	FEV <sub>1</sub> > 80% predicted; FEV <sub>1</sub> /FVC normal	FEV <sub>1</sub> 60–80% predicted; FEV <sub>1</sub> /FVC reduced 5%	FEV <sub>1</sub> < 60% predicted; FEV <sub>1</sub> /FVC reduced > 5%

**Abbreviations:** FEV<sub>1</sub>, forced expiratory volume in 1 second; FVC, forced vital capacity; SABA, short-acting beta-agonist

*Adapted from: National Asthma Education and Prevention Program Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma. Bethesda, MD: National Heart, Lung, and Blood Institute, US Dept of Health and Human Services; 2007. NIH publication 08-5846.*



18

## Asthma Classification – 2007 Guidelines

Components of Severity		Classification of Asthma Severity (Youths ≥12 years of age and adults)			
		Intermittent	Persistent		
			Mild	Moderate	Severe
<b>Impairment</b> Normal FEV <sub>1</sub> /FVC: 8-19 yr 85% 20-39 yr 80% 40-59 yr 75% 60-80 yr 70%	Symptoms	<2 days/week	>2 days/week but not daily	Daily	Throughout the day
	Nighttime awakenings	≤2/month	3-4/month	>1x/week but not nightly	Often 7x/week
	Short-acting beta <sub>2</sub> -agonist use for symptom control (not prevention of EAs)	<2 days/week	>2 days/week but not >1x/day	Daily	Several times per day
	Interference with normal activity	None	Minor limitation	Some limitation	Extremely limited
	Lung function	<ul style="list-style-type: none"> <li>Normal FEV<sub>1</sub> between exacerbations</li> <li>FEV<sub>1</sub> ≥80% predicted</li> <li>FEV<sub>1</sub>/FVC normal</li> </ul>	<ul style="list-style-type: none"> <li>FEV<sub>1</sub> &gt;80% predicted</li> <li>FEV<sub>1</sub>/FVC normal</li> </ul>	<ul style="list-style-type: none"> <li>FEV<sub>1</sub> &gt;60% but &lt;80% predicted</li> <li>FEV<sub>1</sub>/FVC reduced &gt;5%</li> </ul>	<ul style="list-style-type: none"> <li>FEV<sub>1</sub> &lt;60% predicted</li> <li>FEV<sub>1</sub>/FVC reduced &gt;5%</li> </ul>
Risk	Exacerbations requiring oral systemic corticosteroids	0-1/year	→ >2/year		
		← Consider severity and interval since last exacerbation. Frequency and severity may fluctuate over time for patients in any severity category. →			
Relative annual risk of exacerbations may be related to FEV <sub>1</sub> .					

**HENRY FORD HEALTH**

2007 NAEPP Guidelines, EPR 3

19

## Asthma Classification – 2007 Guidelines

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Control for short-term (impairment):</li> <li>– Albuterol use ≤ 2X/week</li> <li>– Daytime symptoms ≤ 2X/week</li> <li>– Nocturnal symptoms ≤ 2X/month</li> <li>– No activity limitation</li> <li>– Normal spirometry (FEV<sub>1</sub> and FEV<sub>1</sub>/FVC)</li> </ul> | <ul style="list-style-type: none"> <li>• Control for long-term (risk):</li> <li>– ED visits or hospitalizations &lt; 2X/year</li> <li>– Courses of oral steroids &lt; 2X/year</li> <li>– Canisters of albuterol &lt; 2X/year</li> <li>– Stable lung function over time</li> </ul> |
|---|---|

**HENRY FORD HEALTH**

2007 NAEPP Guidelines, EPR 3

20

## Definition of Severe Asthma

- Treatment with a high dose ICS and LABA (or leukotriene modifier/theophylline) OR oral steroids for > 50% of the previous year and still has one of the following:
  - Poor symptoms control
  - $\geq 2$  steroid bursts in the previous year
  - $\geq 1$  hospitalization in the previous year
  - FEV1  $\leq 80\%$  after a bronchodilator

**HENRY FORD HEALTH**

*ERS/ATS Guidelines on Severe Asthma. Eur Respir J 2014; 43: 343 - 73*

21

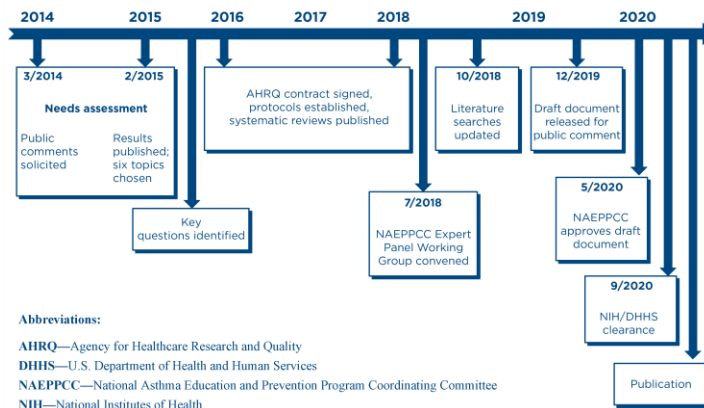
## Classification of Asthma

- Intermittent – Less than the 'rule of 2'
- Mild persistent – more than 'rule of 2' but not daily
- Moderate persistent – Daily problems
- Severe persistent – Can't control even on high dose therapy

**HENRY FORD HEALTH**

22

## Timeline for Asthma Guidelines 2020 Update

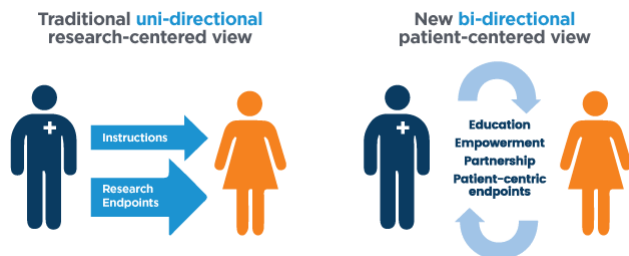


HENRY FORD HEALTH

23

## Focused Updates, Not Complete Revision of 2007 Guidelines

- Improve asthma management and support informed, shared decision making



- New guidance in **six key areas** of asthma diagnosis, management, and treatment
- Updates offer **19 recommendations**

HENRY FORD HEALTH

24

## 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

**HENRY FORD HEALTH**

25

## Intermittent ICS – Question 1

- You see a 3-year-old child who presents with occasional wheezing. Should you use intermittent ICS during these episodes?



**HENRY FORD HEALTH**

26

## Intermittent ICS – Question 1

- 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(Conditional recommendation, high certainty evidence)



HENRY FORD HEALTH

27

## In Patients with Persistent Asthma, Does Increasing the ICS Dose During an Asthma Worsening Help?

- A. Yes
- B. No

 CONTINUING EDUCATION COMPANY

28



## Intermittent ICS – Question 2a

- 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.)



HENRY FORD HEALTH

29

## A 25-year-old with Asthma Is Using Albuterol 3-4X/week, Wakes Up 1X/week, and FEV<sub>1</sub> is 83%. What Would You Do?

- A. Medium dose ICS/formoterol daily and as needed
- B. LTRA daily (e.g., montelukast)
- C. Albuterol and ICS, both as needed
- D. Daily medium dose ICS

30

## Intermittent ICS – Question 2b, Mild Asthma

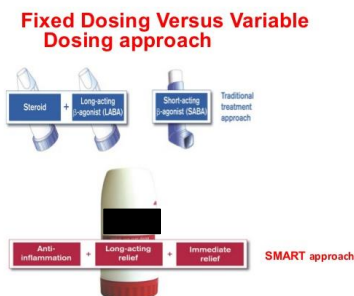
- For individuals  $\geq$  age 12 with **mild persistent asthma**, either of the following two treatments are recommended:
  - a daily low-dose ICS and as-needed SABA for quick-relief therapy, or
  - intermittent as-needed ICS and SABA used one after the other for worsening asthma.
 (Conditional recommendation, moderate certainty evidence.)

HENRY FORD HEALTH

31

## Intermittent ICS – Q3

- Now the moderate and severe persistent asthma patients – can I use an ICS/LABA as their only inhaler?



HENRY FORD HEALTH

32



## Intermittent ICS – Q2b, Mod/Severe Asthma

- For individuals ages **4 years or older with moderate to severe persistent asthma**, preferred treatment is a single inhaler with ICS-formoterol 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 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.)
- **BOTTOM LINE** – Use ICS/formoterol as controller and reliever for your moderate to severe persistent asthma patients

HENRY FORD HEALTH

33

## LAMA Therapy in Those Age $\geq$ 12

- 3 questions:
  - Patient on ICS alone, is LAMA as good as adding LABA?
  - Patient on ICS alone, what is a good step-up option?
  - Patient on ICS + LABA, will LAMA help?

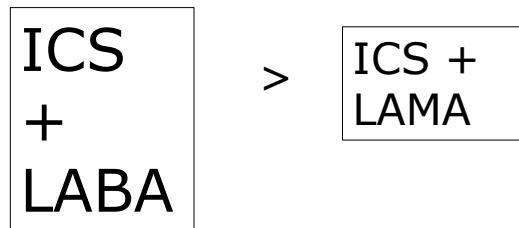


HENRY FORD HEALTH

34

## LAMA Therapy in Those Age $\geq 12$

- If asthma not controlled by ICS therapy alone, **adding a LABA rather than a LAMA** to an ICS is recommended. (Conditional recommendation, moderate certainty.)

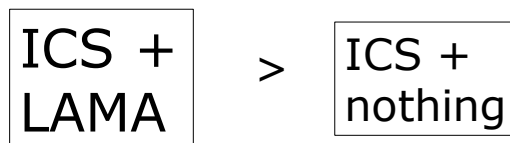


HENRY FORD HEALTH

35

## LAMA Therapy in Those Age $\geq 12$

- 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.)



HENRY FORD HEALTH

36

**(True/False) A Patient Is on an ICS-LABA Combination But Not Fully Controlled. Adding a LAMA Is Recommended, as It Has Shown Benefit**

- A. True
- B. False



37

## LAMA Therapy in Those Age $\geq 12$

- 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.)

ICS +  
LABA +  
LAMA

&gt;

ICS +  
LABA

HENRY FORD HEALTH

38

## Indoor Allergen Mitigation

- Does control of the indoor environment help in asthma? What is best way to do so? Should we do for everyone?



HENRY FORD HEALTH

39

## Indoor Allergen Mitigation

- 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.
- 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.
- For individuals with asthma who are sensitive to dust mites, **impermeable pillow/mattress covers are recommended only as part of** a multicomponent intervention.
- **Integrated pest management** in the home is recommended for individuals with asthma who are allergic and exposed to cockroaches, mice, or rats.

HENRY FORD HEALTH

40

## Immunotherapy for Asthma

- Should I use subcutaneous immunotherapy (SCIT) for asthma? What about sublingual immunotherapy (SLIT)?



HENRY FORD HEALTH

41

## Immunotherapy for Asthma

- Subcutaneous immunotherapy is **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.)



HENRY FORD HEALTH

42

## Immunotherapy for Asthma

- Evidence reviewed **did not support** using sublingual immunotherapy to specifically treat allergic asthma. (Conditional recommendation, moderate certainty evidence.)



HENRY FORD HEALTH

43

## FENO Testing in Asthma

- Can FENO help to diagnose asthma? Will it predict wheezing toddlers who will develop asthma? Should it be routinely used in choosing medications or monitoring response?



HENRY FORD HEALTH

44

## FENO Testing in Asthma

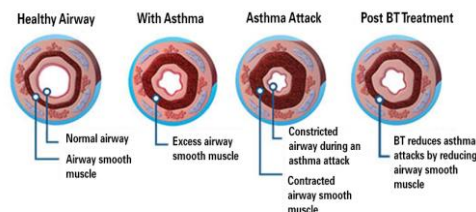
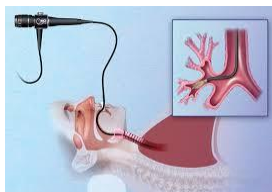
- FeNO measurement **may support a diagnosis of asthma in those age  $\geq 5$**  for whom the diagnosis is uncertain even after a complete history, physical examination, and spirometry testing including bronchodilator responsiveness. (Conditional recommendation, moderate certainty evidence.)
- **May 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.)
- **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.)

HENRY FORD HEALTH

45

## Bronchial Thermoplasty

- In adult patients with uncontrolled asthma, should I perform bronchial thermoplasty?



HENRY FORD HEALTH

46

## Bronchial Thermoplasty

- 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.

HENRY FORD HEALTH

47

## Stepwise Table Ages 0-4

Figure 1b: Stepwise Approach for Management of Asthma in Individuals Ages 0-4 Years

	Management of Persistent Asthma in Individuals Ages 0-4 Years					
Treatment	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
<small>For children age 4 years only, see Step 3 and Step 4 on Management of Persistent Asthma in Individuals Ages 5-11 Years diagram.</small>						
<b>Assess Control</b> • First check adherence, inhaler technique, environmental factors,▲ and comorbid conditions. • <b>Step up</b> if needed; reassess in 4-6 weeks • <b>Step down</b> 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.						

HENRY FORD HEALTH

48





# Stepwise Table Ages 5 - 11

Figure 1c: Stepwise Approach for Management of Asthma in Individuals Ages 5-11 Years

		Management of Persistent Asthma in Individuals Ages 5-11 Years					
		STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6
Treatment	Preferred	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
	Alternative		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 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>
<b>Assess Control</b>							
<ul style="list-style-type: none"> <li>• First check adherence, inhaler technique, environmental factors, <sup>▲</sup> and comorbid conditions.</li> <li>• <b>Step up</b> if needed; reassess in 2-6 weeks</li> <li>• <b>Step down</b> if possible (if asthma is well controlled for at least 3 consecutive months)</li> </ul> <p>Consult with asthma specialist if Step 4 or higher is required. Consider consultation at Step 3.</p> <p>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.</p>							

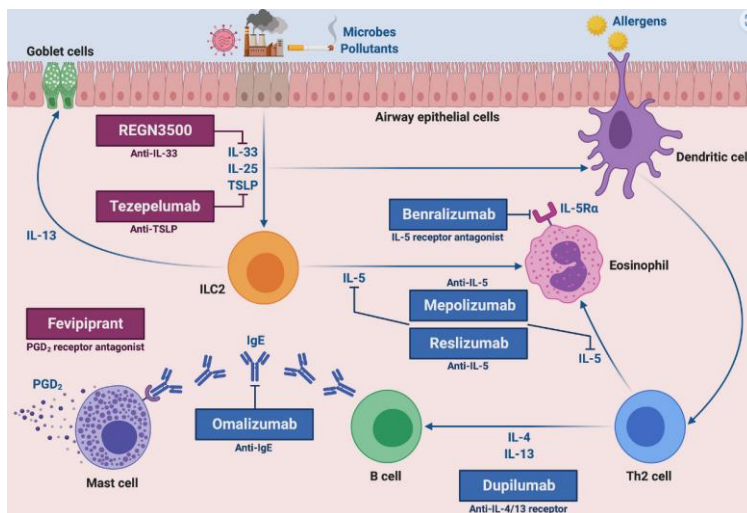
HENRY FORD HEALTH

# Stepwise Table Ages ≥ 12

Intermittent Asthma	Management of Persistent Asthma in Individuals Ages 12 Years and Older				
Step 1 Preferred:	Step 2 Preferred:	Step 3 Preferred:	Step 4 Preferred:	Step 5 Preferred:	Step 6
prn SABA	Daily low-dose ICS and prn SABA  <b>OR</b> <b>prn concomitant low-dose ICS and prn SABA</b>  Alternative: Daily LTRA and prn SABA	<b>Daily and prn low-dose ICS-formoterol (SMART)</b>  Alternative: Daily medium-dose ICS and prn SABA  <b>OR</b> Daily low-dose ICS + LABA or LTRA <b>or LAMA</b> and prn SABA	<b>Daily and prn medium-dose ICS-formoterol (SMART)</b>  Alternative: Daily medium-dose ICS + LABA <b>or LAMA</b> or LTRA and prn SABA	<b>Daily medium-dose ICS + LABA + LAMA and prn SABA</b>  Alternative: Daily high-dose ICS + LABA and prn SABA  <b>OR</b> Daily high-dose ICS + LTRA and prn SABA	Not in material reviewed by the Expert Panel

HENRY FORD HEALTH

## Biological Therapy in Severe Asthma

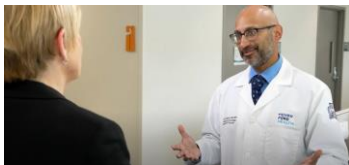


HENRY FORD HEALTH

51

## New Asthma Pricing for Inhalers

**\$35/MONTH**



AIRSUPRA BEVESPI AEROSPHERE BREZTRI AEROSPHERE SYMBICORT	ATROVENT HFA COMBIVENT RESPIMAT SPIRIVA HANDIHALER SPIRIVA RESPIMAT 1.25 MCG SPIRIVA RESPIMAT 2.5 MCG STIOLTO RESPIMAT STRIVERDI RESPIMAT	ADVAIR DISKUS ADVAIR HFA ANORO ELLIPTA ARNUITY ELLIPTA BREO ELLIPTA INCRUSE ELLIPTA SEREVENT DISKUS TRELEGY ELLIPTA VENTOLIN HFA
---	---	--

**NEW CAPS ON RUNAWAY INHALER COSTS**

*NBC News with Lester Holt. May 30, 2024*

HENRY FORD HEALTH

52

## Conclusion

- NIH updates:
  - Use an ICS for URI in toddlers with intermittent wheeze
  - Do not increase ICS during an asthma flare
  - Use ICS and albuterol intermittently in mild persistent asthma
  - Use ICS/formoterol for rescue and maintenance in moderate/severe asthma
  - Triple therapy (ICS/LABA/LAMA) works a bit
  - Offer subcutaneous immunotherapy for mild/moderate asthma
  - Targeted, multicomponent allergen avoidance should be used

**HENRY FORD HEALTH**