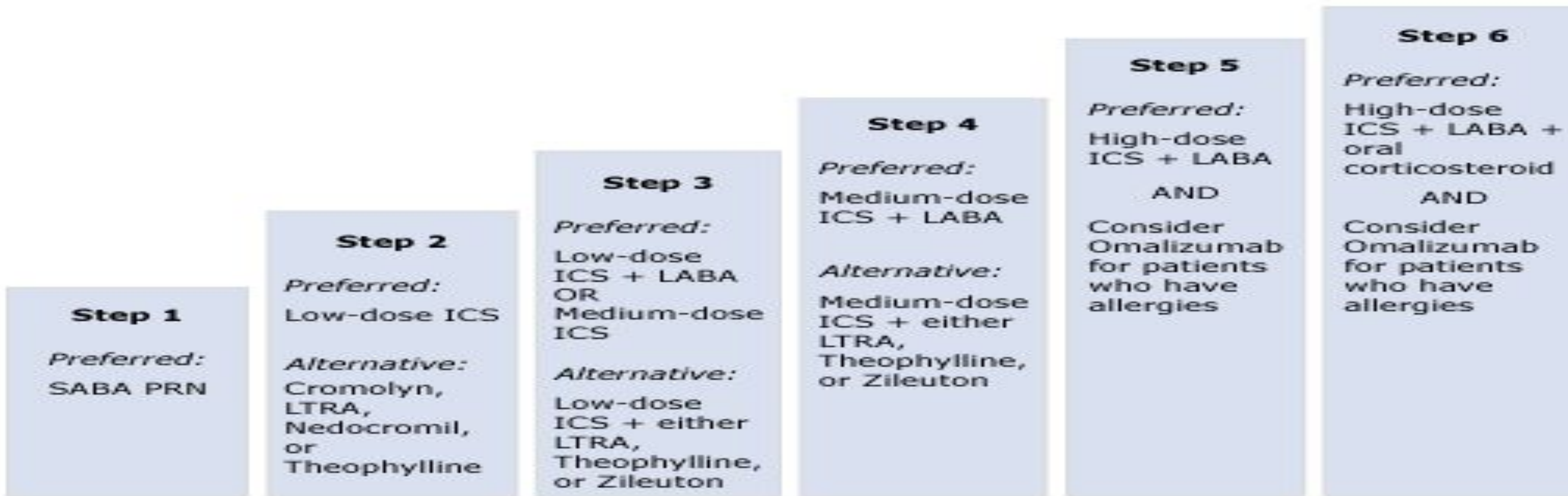
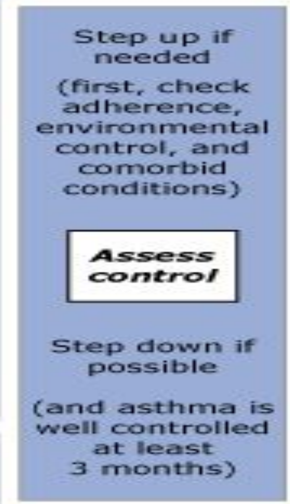
Adult AsthmaCare

Master the newest guidelines

EPR-3 STEP-WISE MANAGEMENT OF PERSISTENT ASTHMA





Changes to the guidelines 2020

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

Expert Panel Review EPR-4 Updates

Hot Topics

1. Intermittent Inhaled Steroids (ICS)
2. Long-Acting Muscarinic Antagonists (LAMA)
3. Indoor allergy control
4. Immunotherapy in allergic asthma(SCIT)
5. Fractional Exhaled Nitrous Oxide (FeNO)
6. Bronchial Thermoplasty(BT)

Intermittent Inhaled Steroids (ICS)

Individuals with mild persistent asthma are recommended to follow one of two treatments as part of step two therapy.

- A daily low dose of an ICS with as needed Short Acting Beta Antagonist (SABA)

- Intermittent use of as needed ICS and SABA- One after the other for worsening asthma

Treatment for patients 12 years of age with mild persistent asthma

- One approach to intermittent therapy is 2-4 inhalations of a SABA followed by 80-250 mcg. of beclomethasone equivalent every 4 hours as needed for asthma symptoms.

- This treatment can be addressed within the Asthma Action Plan (AAP) and started at home. Follow up with the regular provider is needed to insure the intermittent regimen is still appropriate.

- Individuals with poor symptom perception may not be good candidates for as needed therapy

Comparable doses

ICS	Low	Medium	High
Beclometasone dipropionate (HFA), µg	200-500	> 500-1,000	> 1,000
Budesonide (DPI), µg	100-200	> 200-400	> 400
Ciclesonide (HFA), µg	80-160	> 160-320	> 320
Flunisolide, µg	80-160	> 160-320	> 320
Fluticasone furoate (DPI), µg	100	NA	200
Fluticasone propionate (DPI), µg	100-250	> 250-500	> 500
Fluticasone propionate (HFA), µg	100-250	> 250-500	> 500
Mometasone furoate, µg	100-220	> 220-440	> 440
Triamcinolone acetonide, µg	400-1000	> 100-2,000	> 2,000

DPI = dry powder inhaler; HFA = hydrofluoroalkane propellant; ICS = inhaled corticosteroid; NA = not available. Adapted from the 2017 GINA report.

ADULTS WITH MODERATE TO SEVERE ASTHMA

- The recommended treatment for patients 12 years of age and older with moderate to severe persistent asthma is a single inhaler with ICS and formoterol. This is used as both as daily controller and as needed for an acute exacerbation.

- A less preferred therapy is a higher dose ICS and LABA combined with as needed SABA

Single Maintenance And Reliever Therapy (SMART)

- SMART therapy should be considered for patients 4 years and older that have experienced a severe exacerbation within the last year

- This is single inhaler therapy that has only been studied with formoterol as the LABA.

- SMART is appropriate as step-3 (low-dose ICS) and step 4 (Medium-dose ICS)

- The ICS-formoterol is administered as maintenance 1-2 puffs once or twice daily depending on age, asthma severity and ICS dose and 1-2 puffs as needed for asthma symptoms.

SMART Action Plan

My Symbicort (budesonide/formoterol) Rapihaler 100/3 Asthma Action Plan

Anti-inflammatory Reliever
With or without Maintenance

Name: ______________________
Date: ______________________
Plan discussed with: (name of health care professional)
____
My usual best peak flow (if used): ______ l/min

Usual Medical Contact: Name and telephone number
____

NORMAL MODE

MY SYMBICORT ASTHMA TREATMENT IS:

- [ ] Symbicort Rapihaler 100/3 mcg
- [ ] Use with a spacer

RELIEVER

I should take 2 separate puffs (1 at a time) of my Symbicort whenever needed for relief of my asthma symptoms

I should always carry my Symbicort with me to use as a reliever when needed

MY REGULAR MAINTENANCE TREATMENT EVERY DAY IS : *(enter number of puffs or 0 if no regular daily treatment prescribed)*

______ Puffs in the morning (0, 2, 4)
______ Puffs in the evening (0, 2, 4)

MY ASTHMA IS STABLE IF:

- I do not wake up at night or in the morning because of asthma
- My asthma has not interfered with my usual activities (e.g housework, school, exercise)

OTHER INSTRUCTIONS
(e.g. what to do before exercise, when to see my doctor)

ASTHMA FLARE UP

IF OVER A PERIOD OF 2–3 DAYS:

- My asthma symptoms are getting worse or not improving
  OR
- I am using more than to 12 Symbicort reliever puffs a day
  OR
- Peak flow below: ______ (delete if not used)

I SHOULD:

- [x] **Continue to use my Symbicort to relieve my symptoms and my regular daily Symbicort (if prescribed) (up to a total maximum of 24 puffs in a day)**
- [ ] Contact my doctor
- [ ] Start a course of prednisolone

COURSE OF PREDNISOLONE TABLETS:

Take ______ mg prednisolone tablets each morning for ______ days; OR

IF I NEED MORE THAN 24 SYMBICORT PUFFS (TOTAL) IN ANY DAY,

- I must see my doctor or go to hospital the same day

ASTHMA EMERGENCY

SIGNS OF AN ASTHMA EMERGENCY

- My asthma symptoms are getting worse quickly
- I am finding it very hard to breathe or speak
- My Symbicort is not helping

IF I HAVE ANY OF THE ABOVE DANGER SIGNS, I SHOULD DIAL 000 FOR AN AMBULANCE AND SAY I AM HAVING A SEVERE ASTHMA ATTACK.

WHILE I AM WAITING FOR THE AMBULANCE:

- Sit upright and keep calm
- I should keep taking my Symbicort as needed
- If only Ventolin® is available, take 4 puffs as often as needed until help arrives
- Even if my symptoms appear to settle quickly I should seek medical advice right away
- [ ] Use my adrenaline autoinjector

OTHER INSTRUCTIONS

Long Acting Muscarinic Antagonist (LAMA)

- Patients with uncontrolled asthma on ICS therapy alone adding a LABA instead of a LAMA is preferred.

- If a LABA cannot be used, adding a LAMA is an acceptable alternative.

- For individuals that remain uncontrolled on a ICS-LABA, adding a LAMA is recommended since it may add a small potential benefit.

Dust Mite Remediation

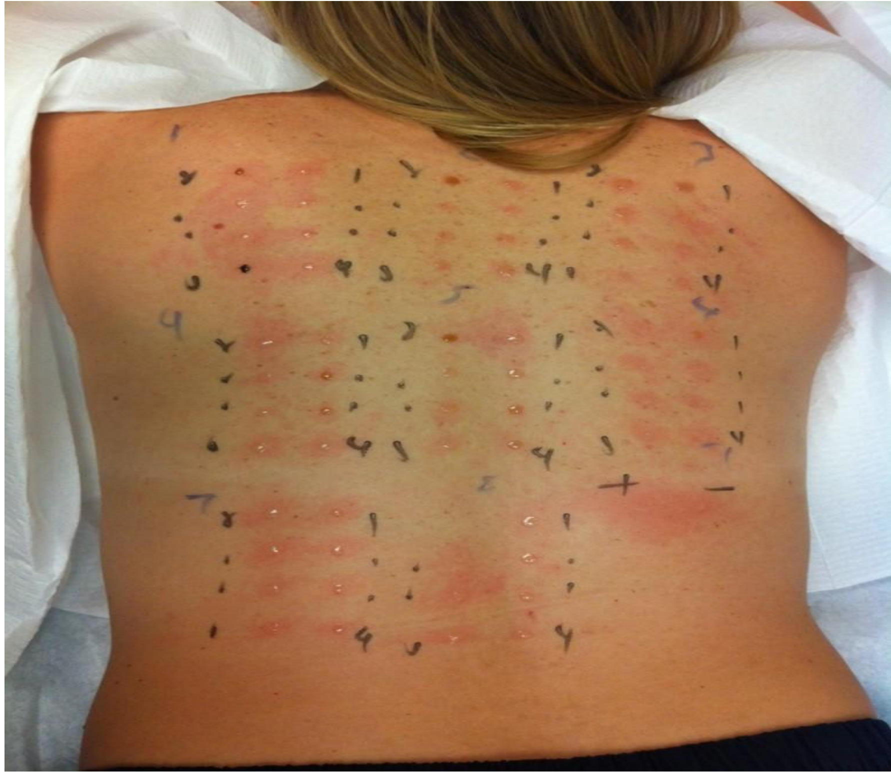
Indoor Allergen Mitigation

- For individuals with identified indoor allergens by allergy testing a multi-component allergen- specific mitigation strategy may be beneficial.

- Impermeable pillow and mattress covers should be a part of a multi-component strategy, not a single intervention.

- For those with symptoms related to pest (cockroaches- rodents) the use of integrated pest management as part of a multi- component strategy or as a stand alone intervention is recommended

Allergy Testing



Immunotherapy for Treatment of Allergic Asthma (SCIT)

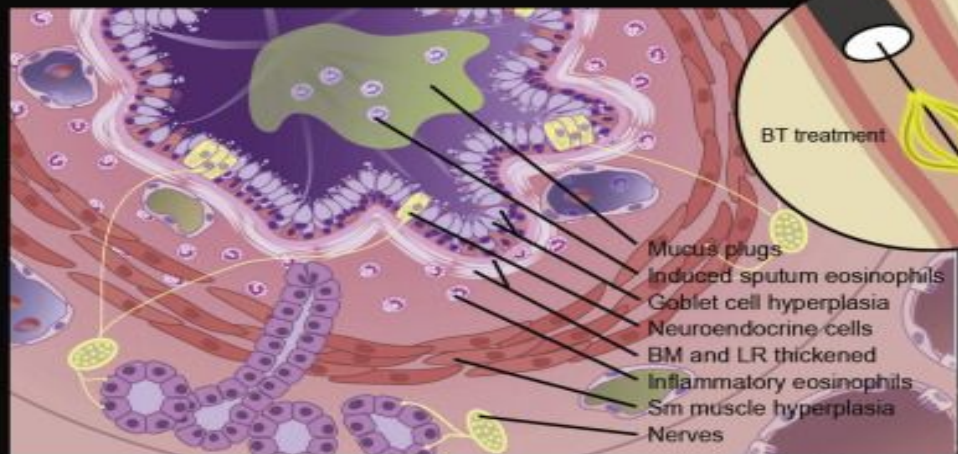
- Subcutaneous immunotherapy is recommended as an adjunct in those individuals with mild to moderate allergic asthma.

- SCIT should be administered in a clinical setting due to systemic reactions. Up to 15% of individuals experience reactions greater than 30 minutes after administration.

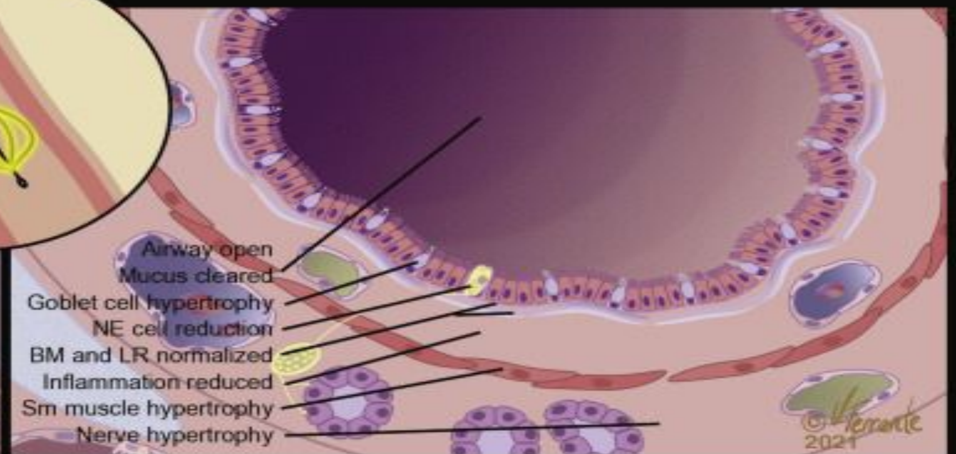
- Sublingual immunotherapy (SLIT) is NOT recommended in the treatment of allergic asthma.

Fractional Exhaled Nitric Oxide Testing (FeNO)

- FeNO may be a useful indicator of type 2 inflammation of the airway.
- FeNO may support a diagnosis of asthma along with patient history, spirometry, and physical examination , but should not be used to diagnosis asthma.
- FeNO testing should not be used alone to assess asthma control, predict future exacerbations, or determine the severity of an exacerbation.
- FeNO may be used as a part of a monitoring and management strategy.



Pre-BT: constricted airway
BT treatment
Mucus plugs
Induced sputum eosinophils
Goblet cell hyperplasia
Neuroendocrine cells
BM and LR thickened
Inflammatory eosinophils
Sm muscle hyperplasia
Nerves



Post-BT: open airway (remodeled)
Airway open
Mucus cleared
Goblet cell hypertrophy
NE cell reduction
BM and LR normalized
Inflammation reduced
Sm muscle hypertrophy
Nerve hypertrophy
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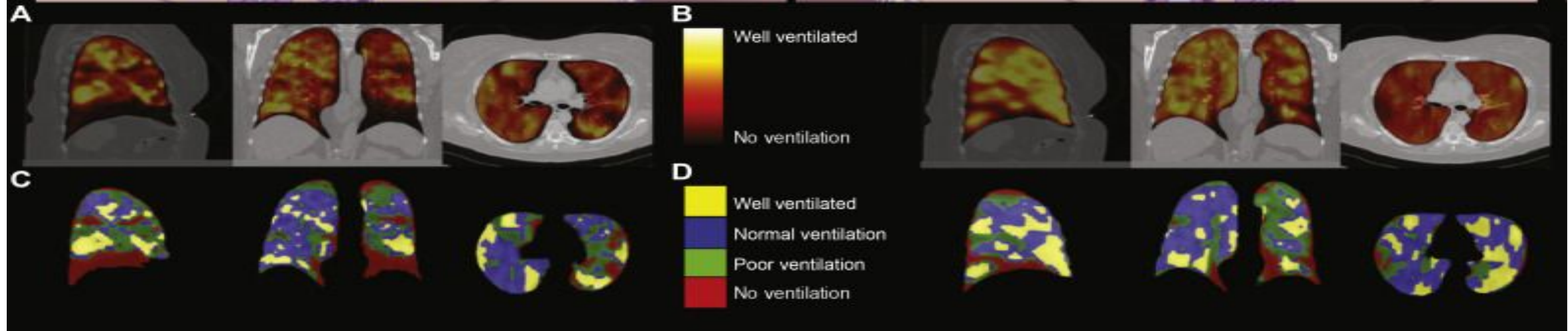


A
B
Well ventilated
No ventilation
C
D
Well ventilated
Normal ventilation
Poor ventilation
No ventilation

Bronchial Thermoplasty(BT)

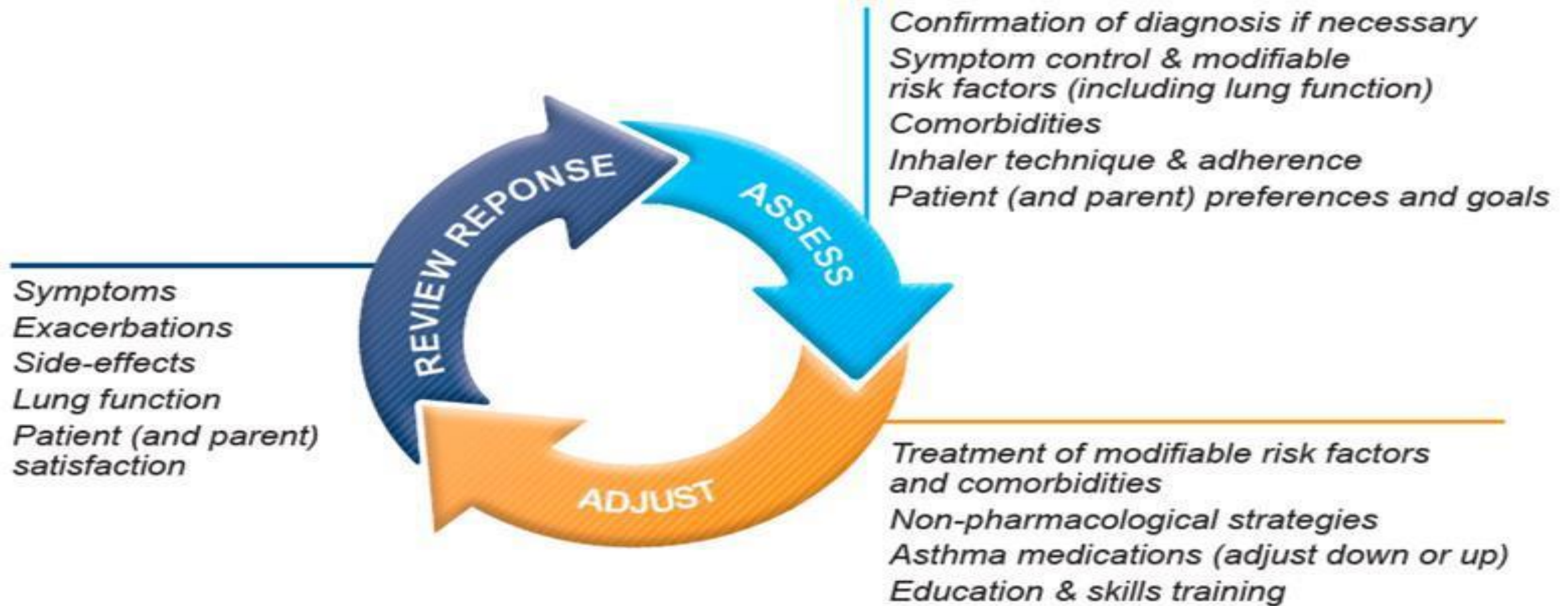
- The recommendation is that most adults (18 years and greater) with uncontrolled, moderate to severe asthma NOT undergo bronchial thermoplasty.
- Benefits are small, risks are moderate, and the long-term outcomes are unknown.
- For individuals with moderate to severe persistent asthma who have troublesome symptoms and are willing to take unknown risk, they may choose this therapy as a part of their shared decision making with their healthcare provider.

Global Initiative for Asthma
GINA 2020 Update

Asthma Symptom Control

- The biggest change for 2020 is that GINA no longer recommends treating individuals 12 years of age with asthma with a SABA alone.
- They should receive symptom-driven therapy or a daily ICS to reduce the risk of severe exacerbations.

GINA Symptom- Driven Model



Asthma Control

The frequency of SABA use is included in the symptom control assessment. Higher SABA usage is associated with worse outcomes, even in patients using a ICS.

Use of SABA to treat symptoms more than twice a week and limitation of activities is a sign of not being well controlled.

GINA recommends that the frequency of ICS- Formoterol NOT be included in the symptom control assessment.

Adults & adolescents 12+ years

Personalized asthma management:
Assess, Adjust, Review response

Symptoms
Exacerbations
Side-effects
Lung function
Patient satisfaction

Confirmation of diagnosis if necessary
Symptom control & modifiable risk factors (including lung function)
Comorbidities
Inhaler technique & adherence
Patient goals

Treatment of modifiable risk factors & comorbidities
Non-pharmacological strategies
Education & skills training
Asthma medications

Asthma medication options:
Adjust treatment up and down for individual patient needs

	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
PREFERRED CONTROLLER to prevent exacerbations and control symptoms	As-needed low dose ICS-formoterol*	Daily low dose inhaled corticosteroid (ICS), or as-needed low dose ICS-formoterol*	Low dose ICS-LABA	Medium dose ICS-LABA	High dose ICS-LABA. Refer for phenotypic assessment ± add-on therapy, e.g tiotropium, anti-IgE, anti-IL5/5R, anti-IL4R
Other controller options	*Low dose ICS taken whenever SABA is taken†*	*Leukotriene receptor antagonist (LTRA), or low dose ICS taken whenever SABA taken†*	*Medium dose ICS, or low dose ICS+LTRA#*	*High dose ICS, add-on tiotropium, or add-on LTRA#*	*Add low dose OCS, but consider side-effects*
PREFERRED RELIEVER	As-needed low dose ICS-formoterol*		As-needed low dose ICS-formoterol for patients prescribed maintenance and reliever therapy‡		
Other reliever option	*As-needed short-acting β_2-agonist (SABA)*				

* Off-label; data only with budesonide-formoterol (bud-form)
† Off-label; separate or combination ICS and SABA inhalers
‡ Low-dose ICS-form is the reliever for patients prescribed bud-form or BDP-form maintenance and reliever therapy
# Consider adding HDM SLIT for sensitized patients with allergic rhinitis and FEV1 >70% predicted

GINA Individualized Therapy

SELECTING INITIAL CONTROLLER TREATMENT IN ADULTS AND ADOLESCENTS WITH A DIAGNOSIS OF ASTHMA

ASSESS:

- Confirmation of diagnosis if necessary
- Symptom control & modifiable risk factors (including lung function)
- Comorbidities
- Inhaler technique & adherence
- Patient preferences and goals

	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
START HERE IF:	Symptoms less than twice a month	Symptoms twice a month or more, but less than daily	Symptoms most days, or waking with asthma once a week or more	Symptoms most days, or waking with asthma once a week or more, or low lung function	Short course OCS may also be needed for patients presenting with severely uncontrolled asthma
PREFERRED CONTROLLER to prevent exacerbations and control symptoms	As-needed low dose ICS-formoterol *	Daily low dose inhaled corticosteroid (ICS), or as-needed low dose ICS-formoterol *	Low dose ICS-LABA	Medium dose ICS-LABA	High dose ICS-LABA Refer for phenotypic assessment ± add-on therapy, e.g tiotropium, anti-IgE, anti-IL5/5R, anti-IL4R
Other controller options	*Low dose ICS taken whenever SABA is taken †*	*Daily leukotriene receptor antagonist (LTRA), or low dose ICS taken whenever SABA taken †*	*Medium dose ICS, or low dose ICS+LTRA #*	*High dose ICS, add-on tiotropium, or add-on LTRA #*	*Add low dose OCS, but consider side-effects*
PREFERRED RELIEVER	As-needed low dose ICS-formoterol *	As-needed low dose ICS-formoterol *	As-needed low dose ICS-formoterol for patients prescribed maintenance and reliever therapy‡	As-needed low dose ICS-formoterol for patients prescribed maintenance and reliever therapy‡	As-needed low dose ICS-formoterol for patients prescribed maintenance and reliever therapy‡
Other reliever option	*As-needed short-acting β_2-agonist (SABA)*	*As-needed short-acting β_2-agonist (SABA)*	*As-needed short-acting β_2-agonist (SABA)*	*As-needed short-acting β_2-agonist (SABA)*	*As-needed short-acting β_2-agonist (SABA)*

** Data only with budesonide-formoterol (bud-form)*
† Separate or combination ICS and SABA inhalers
‡ Low-dose ICS-form is the reliever only for patients prescribed bud-form or BDP-form maintenance and reliever therapy
 # Consider adding HDM SLIT for sensitized patients with allergic rhinitis and FEV1 >70% predicted

GINA Selecting Initial Controller Terapy

Montelukast (Singulair)

- There is now a black box warning for potential mental health side effects with the use of Singular in patients with asthma and allergies.
- These may include serious neuropsychiatric events, to include suicide in adults.
- GINA recommends limiting Montelukast for use in allergic rhinitis.
- Montelukast should be avoided in patients with history of mental health issues.

Mild Asthma

- The term “ mild asthma” can be misleading since 30-37% of adults with mild asthma will have an acute asthma exacerbation.
- Of adults with near fatal asthma 16 % have been labeled with mild asthma.
- Among adults that have experienced fatal asthma 15-20% have been labeled as mild asthmatics.

Asthma or COPD Initial Diagnosis

CLINICAL PHENOTYPE - ADULTS WITH CHRONIC RESPIRATORY SYMPTOMS (dyspnea, cough, chest tightness, wheeze)

HIGHLY LIKELY TO BE ASTHMA if several of the following features **TREAT AS ASTHMA**	FEATURES OF BOTH ASTHMA + COPD **TREAT AS ASTHMA**	LIKELY TO BE COPD if several of the following features **TREAT AS COPD**
HISTORY • Symptoms vary over time and in intensity - Triggers may include laughter, exercise, allergens, seasonal - Onset before age 40 years - Symptoms improve spontaneously or with bronchodilators (minutes) or ICS (days to weeks) • Current asthma diagnosis, or asthma diagnosis in childhood **LUNG FUNCTION** • Variable expiratory airflow limitation • Persistent airflow limitation may be present	**HISTORY** • Symptoms intermittent or episodic - May have started before or after age 40 • May have a history of smoking and/or other toxic exposures, or history of low birth weight or respiratory illness such as tuberculosis • Any of asthma features at left (e.g. common triggers; symptoms improve spontaneously or with bronchodilators or ICS; current asthma diagnosis or asthma diagnosis in childhood) **LUNG FUNCTION** • Persistent expiratory airflow limitation • With or without bronchodilator reversibility	**HISTORY** • Dyspnea persistent (most days) - Onset after age 40 years - Limitation of physical activity - May have been preceded by cough/sputum - Bronchodilator provides only limited relief • History of smoking and/or other toxic exposure, or history of low birth weight or respiratory illness such as tuberculosis • No past or current diagnosis of asthma **LUNG FUNCTION** • Persistent expiratory airflow limitation • With or without bronchodilator reversibility

INITIAL PHARMACOLOGICAL TREATMENT (as well as treating comorbidities and risk factors. See Box 3-5A)

• **ICS-CONTAINING TREATMENT IS ESSENTIAL to reduce risk of severe exacerbations and death.** See Box 3-5A - As-needed low dose ICS-formoterol may be used as reliever. See Box 3-5A • **DO NOT GIVE LABA and/or LAMA without ICS** • Avoid maintenance OCS	• **ICS-CONTAINING TREATMENT IS ESSENTIAL to reduce risk of severe exacerbations and death.** See Box 3-5A • Add-on LABA and/or LAMA usually also needed • Additional COPD treatments as per GOLD • **DO NOT GIVE LABA and/or LAMA without ICS** • Avoid maintenance OCS	• **TREAT AS COPD (see GOLD report)** - Initially LAMA and/or LABA - Add ICS as per GOLD for patients with hospitalizations, ≥2 exacerbations/year requiring OCS, or blood eosinophils ≥300/μl • Avoid high dose ICS, avoid maintenance OCS • Reliever containing ICS is not recommended

REVIEW PATIENT AFTER 2-3 MONTHS. REFER FOR EXPERT ADVICE IF DIAGNOSTIC UNCERTAINTY OR INADEQUATE RESPONSE

REFERENCES

SUMMARY OF EPR-4 AND GINA ASTHMA GUIDELINES- ASTHMA AND ALLERGY NETWORK

WHAT'S NEW IN GINA 2021- GLOBAL INITIATIVE FOR ASTHMA

Asthma Management Guidelines: Focused Updates 2020-NHLBI