

**Presentation:** A patient presents to the clinic with intermittent dyspnea on exertion

**Initial Assessment:** Address severity- Daytime vs. nighttime symptoms, frequency, nocturnal awakening, use of rescue inhaler (if applicable), rule out other causes of dyspnea

**CLASSIFYING ASTHMA SEVERITY AND INITIATING TREATMENT IN YOUTHS GREATER THAN OR EQUAL TO 12 YEARS OF AGE AND ADULTS**

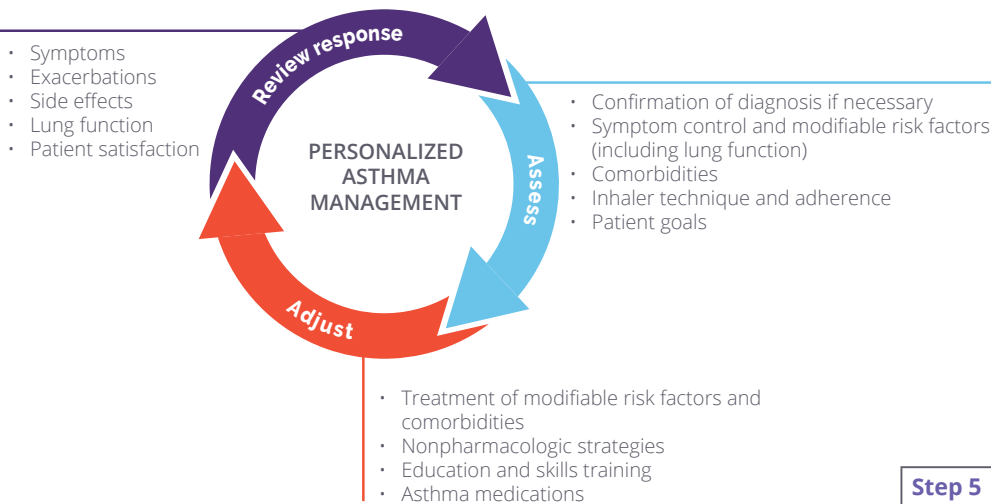
Components of Severity		Classification of asthma severity (≥ 12 years of age)			
		Intermittent	Persistent		
			Mild	Moderate	Severe
<b>Impairment</b> Normal FEV <sub>1</sub> /FVC: 8 to 19 years 85 percent 20 to 39 years 80 percent 40 to 59 years 75 percent 60 to 80 years 70 percent	Symptoms	≤2 days/week	>2 days/week but not daily	Daily	Throughout the day
	Nighttime awakenings	≤2 2x/month	3 to 4x/month	>1x/week but not nightly	Often 7x/week
	Short-acting beta <sub>2</sub> -agonist use for symptom control (not prevention of EIB)	≤2 days/week	>2 days/week but not daily, and not more than 1x on any 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 percent predicted</li> <li>• FEV<sub>1</sub> /FVC normal</li> </ul>	<ul style="list-style-type: none"> <li>• FEV<sub>1</sub> ≥80 percent predicted</li> <li>• FEV<sub>1</sub> /FVC normal</li> </ul>	<ul style="list-style-type: none"> <li>• FEV<sub>1</sub> ≥60 but &lt;80 percent predicted</li> <li>• FEV<sub>1</sub> /FVC reduced 5 percent</li> </ul>	<ul style="list-style-type: none"> <li>• FEV<sub>1</sub> &lt;60 percent predicted</li> <li>• FEV<sub>1</sub> /FVC reduced &gt;5 percent</li> </ul>
Risk	Exacerbations requiring oral systemic glucocorticoids	0 to 1/year (see footnote)	≥2/year (see footnote)		
		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>			
Recommended step for initiating treatment		Step 1	Step 2	Step 3	Step 4 or 5
		And consider short course of oral systemic glucocorticoids			
		In two to six weeks, evaluate level of asthma control that is achieved and adjust therapy accordingly.			

**Assessing severity and initiating treatment for patients who are not currently taking long-term control medications.** The stepwise approach is meant to assist, not replace, the clinical decision-making required to meet individual patient needs. Level of severity is determined by assessment of both impairment and risk. Assess impairment domain by patient’s caregiver’s recall of previous two to four weeks and spirometry. Assign severity to the most severe category in which any feature occurs. At present, data are inadequate to correlate frequencies of exacerbations with different levels of asthma severity. In general, more frequent and intense exacerbations (eg, requiring urgent, unscheduled care, hospitalization, or ICU admission) indicate greater underlying disease severity. For treatment purposes, patients who had ≥2 exacerbations requiring oral systemic glucocorticoids in the past year may be considered the same as patients who have persistent asthma, even in the absence of impairment levels consistent with persistent asthma.

FEV<sub>1</sub>: forced expiratory volume in one second; FVC: forced vital capacity; ICU: intensive care unit.

Reproduced from: National Heart, Blood, and Lung Institute Expert Panel Report 3 (EPR 3): Guidelines for the Diagnosis and Management of Asthma. NIH Publication no. 08-4051, 2007.

**Diagnosis:** PFTs (see FEV<sub>1</sub> /FVC above)



**ASTHMA MEDICATION OPTIONS**

Adjust treatment up and down for individual patient needs

	Step 1	Step 2	Step 3	Step 4	Step 5
<b>Preferred controller</b> to prevent exacerbations and control symptoms	As-needed low-dose ICS-formoterol <sup>1</sup>	Daily low-dose ICS, or as-needed low-dose ICS-formoterol <sup>1</sup>	Low-dose ICS-LABA	Medium-dose ICS-LABA	High-dose ICS-LABA
<b>Other controller options</b>	Low-dose ICS taken whenever SABA is taken <sup>2</sup>	Low-dose ICS taken whenever SABA is taken <sup>2</sup> , or LTRA	Medium-dose ICS, or low-dose ICS + LTRA <sup>3</sup>	High-dose ICS, add-on tiotropium, or add-on LTRA <sup>3</sup>	Refer for phenotypic assessment ± add-on therapy (eg, tiotropium, anti-IgE, anti-IL5/5R, anti-IL4R)
<b>Preferred reliever</b>	As-needed low-dose ICS-formoterol <sup>1</sup>	As-needed low-dose ICS-formoterol <sup>4</sup>			
<b>Other reliever option</b>	As-needed SABA				

The stepwise approach is meant to assist, not replace, the clinical decision-making required to meet individual patient needs. If alternative treatment is used and response is inadequate, change to the preferred treatment before stepping up. Refer to UpToDate content on asthma management for more information about the decision-making that supports the various treatment options.

**Alphabetical order is used when more than one treatment option is listed within either preferred or alternative therapy.**

**ICS:** inhaled corticosteroid (glucocorticoid); **SABA:** inhaled short-acting beta<sub>2</sub>-agonist; **LTRA:** leukotriene receptor antagonist; **LABA:** long-acting inhaled beta<sub>2</sub>-agonist; **IgE:** immunoglobulin E; **IL-5:** interleukin 5; **IL-5R:** interleukin 5 receptor; **IL-4R:** interleukin 4 receptor; **OCS:** oral corticosteroid (glucocorticoid); **BDP:** beclomethasone dipropionate; **HDM:** house dust mite; **SLIT:** sublingual immunotherapy; **FEV<sub>1</sub>:** forced expiratory volume in one second.

**1.** Off-label; data only with budesonide-formoterol (bud-form).; **2.** Off-label; separate or combination ICS and SABA inhalers.; **3.** Consider adding HDM SLIT for sensitized patients with allergic rhinitis and FEV<sub>1</sub> >70% predicted; **4.** Low-dose ICS-formoterol is the reliever for patients prescribed budesonide-formoterol or beclomethasone-formoterol maintenance and reliever therapy.

Reproduced with permission from: Global Initiative for Asthma. Asthma Management and Prevention (for Adults and Children Older than 5 Years): A Pocket Guide for Health Professionals, Updated 2019. Available at: <https://ginasthma.org/pocket-guide-for-asthma-management-and-prevention/> (Accessed on July 19, 2019).

**DOSAGE**

<b>SABA-Albuterol</b>	180 mcg 2 puffs inhaled q4 PRN
<b>Anticholinergics-tiotropium</b>	5 mcg 2 inhalations QD
<b>ICS-fluticasone</b>	Start at 100 mcg inhaled BID
<b>LABA-salmeterol</b>	50 mcg 1 puff inhaled BID

**References**

- An Overview of Asthma Management. UpToDate 2020.
- Global Initiative for Asthma. Asthma Management and Prevention (for Adults and Children Older than 5 years): A Pocked Guide for Health Professionals 2019.
- MedScape Drug Reference 2020.

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