

# GUIDELINES FOR THE DIAGNOSIS AND MANAGEMENT OF ASTHMA<sup>1</sup>

## CLASSIFYING ASTHMA SEVERITY AND INITIATING THERAPY IN CHILDREN

### AGES 5-11

Components of Severity		Intermittent	Persistent		
			Mild	Moderate	Severe
Impairment	Symptoms	≤ 2 days/week	> 2 days/week but not daily	Daily	Throughout the day
	Nighttime awakenings	≤ 2x/month	3-4x/month	> 1x/week but not nightly	Often 7x/week
	Short-acting beta <sub>2</sub> -agonist use for symptom control	≤ 2 days/week	> 2 days/week but not daily	Daily	Several times per day
	Interference with normal activity	None	Minor limitation	Some limitation	Extremely limited
	Lung function • FEV <sub>1</sub> (predicted) or peak flow (personal best) • FEV <sub>1</sub> /FVC (normal 8-19 yr. 85%)	Normal FEV <sub>1</sub> between exacerbations > 80% > 85%	> 80% > 80%	60-80% 75-80%	< 60% < 75%
Risk	Exacerbations requiring oral systemic corticosteroids (consider severity and interval since last exacerbation)	0-1/year (see notes)	≥ 2x/year (see notes) Relative annual risk may be related to FEV <sub>1</sub>		
Recommended Step for Initiating Therapy  (See "Stepwise Approach for Managing Asthma" for treatment steps).  The stepwise approach is meant to assist, not replace, the clinical decision-making required to meet individual patient needs.		Step 1	Step 2	Step 3: medium-dose inhaled corticosteroid option and consider short course of oral systemic corticosteroids	Step 3: medium-dose inhaled corticosteroid option or Step 4 and consider short course of oral systemic corticosteroids
		In 2-6 weeks, depending on severity, evaluate level of asthma control that is achieved. Adjust therapy accordingly.			

### Notes:

Level of severity is determined by both impairment and risk. Assess impairment domain by caregiver's recall of previous 2-4 weeks.

Assign severity to the most severe category in which any feature occurs.

For treatment purposes, patients with ≥ 2 exacerbations (e.g. requiring urgent, unscheduled care, hospitalization or ICU admission) may be considered the same as patients who have persistent asthma, even in the absence of impairment levels consistent with persistent asthma.

# ASSESSING ASTHMA CONTROL AND ADJUSTING THERAPY IN CHILDREN

## AGES 5-11

Components of Control		Well Controlled	Not Well Controlled	Very Poorly Controlled
Impairment	Symptoms	≤ 2 days/week but not more than once on each day	> 2 days/week or multiple times on ≤ 2 days/week	Throughout the day
	Nighttime awakenings	≤ 1x/month	≥ 2x/month	≥ 2x/week
	Interference with normal activity	None	Some limitation	Extremely limited
	Short-acting beta <sub>2</sub> -agonist use for symptom control (not prevention of EIB*)	≤ 2 days/week	> 2 days/week	Several times per day
	Lung function • FEV <sub>1</sub> (predicted) or peak flow personal best • FEV <sub>1</sub> /FVC	> 80%  >	60-80%  80-90%	< 60%  75 < 75%
Risk	Exacerbations requiring oral systemic corticosteroids	0-1x/year	≥ 2x/year	≥ 2x/year
	Reduction in lung growth	Requires long-term follow-up		
	Treatment-related adverse effects	Medication side effects can vary in intensity from none to very troublesome and worrisome. The level of intensity does not correlate to specific levels of control but should be considered in the overall assessment of risk.		
Recommended Action for Treatment  (See "Stepwise Approach for Managing Asthma" for treatment steps).  The stepwise approach is meant to assist, not replace, the clinical decision-making required to meet individual patient needs.	<ul style="list-style-type: none"> <li>• Maintain current step.</li> <li>• Regular follow-up every 1-6 months</li> <li>• Consider step down if well controlled for at least 3 months.</li> </ul>	Step up at least 1 step	<ul style="list-style-type: none"> <li>• Consider short course of oral systemic corticosteroids</li> <li>• Step up 1-2 steps</li> </ul>	
		<ul style="list-style-type: none"> <li>• <b>Before step up:</b> Review adherence to medication, inhaler technique, and environmental control. If alternative treatment was used, discontinue it and use preferred treatment for that step.</li> <li>• <b>Re-evaluate the level of asthma control in 2-6 weeks to achieve control; every 1-6 months to maintain control.</b> Adjust therapy accordingly.</li> <li>• <b>For side effects, consider alternative treatment options.</b></li> </ul>		

The level of control is based on the most severe impairment or risk category. Assess impairment domain by patient's or caregiver's recall of previous 2-4 weeks. Symptom assessment for longer periods should reflect a global assessment, such as whether the patient's asthma is better or worse since the last visit.

\* EIB (Exercise-Induced Bronchospasm)

# GUIDELINES FOR THE DIAGNOSIS AND MANAGEMENT OF ASTHMA<sup>1</sup>

## STEPWISE APPROACH FOR MANAGING ASTHMA LONG TERM IN CHILDREN

### AGES 5-11

Step up if needed (first check inhaler technique, adherence, environmental control, and comorbid conditions)						
Assess control						
Step down if possible (and asthma is well controlled at least 3 months)						
	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6
	Intermittent Asthma	Persistent Asthma: Daily Medication—Consult with asthma specialist if step 4 care or higher is required. Consider consultation at step 3				
<b>Preferred</b>	SABA PRN	Low-dose ICS	Low-dose ICS + LABA, LTRA or Theophylline	Medium-dose ICS + LABA	High-dose ICS + LABA	High-dose ICS + LABA + Oral corticosteroids
<b>Alternative</b>		Cromolyn, LTRA, Nedocromil, or Theophylline	OR Medium-dose ICS	Medium-dose ICS + LTRA, or Theophylline	High-dose ICS + LTRA, or Theophylline	High-dose ICS + LTRA, or Theophylline + Oral corticosteroids
Each Step: Patient Education, Environmental Control, and Management of Comorbidities						
Steps 2-4: Consider subcutaneous allergen immunotherapy for patients who have persistent, allergic asthma.						
<b>Quick-Relief Medication</b>	• SABA as needed for symptoms. Intensity of treatment depends on severity of symptoms: up to 3 treatments at 20-minute intervals as needed. Short course of oral systemic corticosteroids may be needed. Caution: Increasing use of SABA or use > 2 days a week for symptom relief (not prevention of EIB) generally indicates inadequate control and the need to step up treatment.					

### Before step up in therapy:

- If an alternative treatment is used and response is inadequate, discontinue it and use the preferred treatment before stepping up.
- Theophylline is a less desirable alternative due to the need to monitor serum concentration levels.
- Clinicians who administer immunotherapy should be prepared and equipped to identify and treat anaphylaxis that may occur.

### **Establishing a diagnosis:<sup>1</sup>**

To establish a diagnosis of asthma, use medical history and physical examination to determine that symptoms of recurrent episodes of airflow obstruction are present.

Use spirometry in all patients  $\geq 5$  years of age to determine that airway obstruction is at least partially reversible. Consider alternative causes of airway obstruction.

### **Spirometry Testing:<sup>1</sup>**

Spirometry is an essential objective measure to establish the diagnosis of asthma because the medical history and physical examination are not reliable means of excluding other diagnoses or of assessing lung status. Reversibility is determined by an increase in FEV<sub>1</sub> of  $>200\text{mL}$  and  $\geq 12\%$  from baseline measure after inhalation of short-acting beta<sub>2</sub>-agonist (SABA).

Spirometry should also be used to obtain objective measures of lung function at the following intervals:

- After treatment is initiated and symptoms and PEF have stabilized.
- During periods of progressive or prolonged loss of asthma control.
- At least every 1-2 years; more frequently depending on response to therapy.

<sup>1</sup> National Asthma Education and Prevention Program Expert Panel Report 3, Guidelines for the Diagnosis and Management of Asthma, National Heart, Lung, and Blood Institute, Summary Report 2007

*BREATHE-Asthma is a Health Management Program available to ConnectiCare members with asthma. Enrolled members may receive educational materials and individualized case management services from a Respiratory RN Case Manager. To enroll a member in BREATHE-Asthma, call **1-800-390-3522**. To find out more information about ConnectiCare's Health Management Programs, refer to ConnectiCare's Physician & Provider Manual or to [www.connecticare.com](http://www.connecticare.com).*



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**Key to chart:** Alphabetical listing is used when more than one treatment option is listed within either preferred or alternative therapy. ICS, inhaled corticosteroid, LABA, inhaled long-acting beta<sub>2</sub>-agonist. LTRA, leukotriene receptor antagonist, SABA, inhaled short-acting beta<sub>2</sub>-agonist.