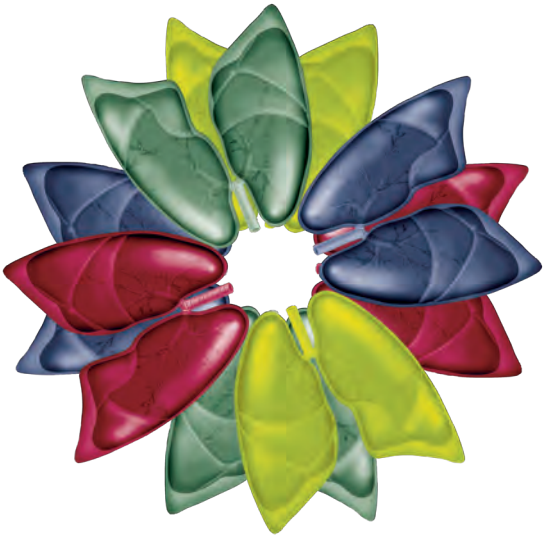
ASTHMA POCKET GUIDE FOR PRIMARY CARE



Annotated from the NAEPP/NHLBI Updated Asthma Guidelines and Developed Through Expert Consensus

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POSITION STATEMENT

Despite advances in therapy, asthma remains a disease which, in many patients, is suboptimally controlled. Research indicates that there is a disparity between patient and provider perceptions of asthma control, leading to many patients not achieving an adequate level of symptom control on a regular basis. The National Heart, Lung, and Blood Institute, through the National Asthma Education and Prevention Program, released updated NAEPP/NHLBI asthma guidelines in 2007.

Because of the overall scope and length of the updated asthma guidelines, their utility for primary care practitioners may be limited. As a result, PRIME®, through an independent educational grant from Genentech and Novartis, convened an expert panel of leaders in the field of asthma to discuss the guidelines for the primary care practitioner and create a condensed document which features key points contained herein. The purpose of this pocket guide is to assist the primary care practitioner in improving the treatment of patients with asthma.

DISCLAIMER: These treatment practice guidelines are not a substitute for any formal guidelines, nor are they an endorsement of any particular approach to asthma care.

EXPERT PANELISTS & AFFILIATIONS

Michael Baxley, MD, MS, MPH
Chief Medical Officer
Senior Marketing Medical Executive
CIGNA HealthCare Florida
Sunrise, FL

Kathryn Blake, PharmD
Senior Research Scientist
Center for Clinical Pediatric Pharmacology
Nemours Children's Clinic
Jacksonville, FL

Craig A. Jones, MD
Director
Vermont Blueprint for Health
Vermont Agency of Administration
Montpelier, VT

H William Kelly, PharmD, BCPS, FCCP
Professor Emeritus of Pediatrics and Pharmacy
University of New Mexico Health Sciences Center
Albuquerque, NM

Daren Knoell, PharmD, FCCP
Associate Professor of Pharmacy Medicine and Medical Pharmacology
Ohio State University
Davis Heart and Lung Research Institute
Columbus, OH

E Rand Sutherland, MD, MPH
Associate Professor of Medicine
Medical Director, Pulmonary Physiology Services
National Jewish Health
University of Colorado Denver Health Sciences Center
Denver, CO

Michael E Wechsler, MD, MMSc
Associate Director
Brigham & Women's Asthma Research Center
Assistant Professor
Harvard Medical School
Boston, MA

ESTABLISHING AN ACCURATE DIAGNOSIS IS ESSENTIAL

To establish a diagnosis of asthma, clinicians should determine that

1. Episodic symptoms of airflow obstruction are present
2. Airflow obstruction is at least partially reversible
3. Alternative diagnoses have been excluded

Recommended methods to establish the diagnosis of asthma include

1. Medical history
2. Physical examination focusing on upper respiratory tract, chest, and skin
3. Spirometry to demonstrate obstruction and assess reversibility
4. Additional diagnostic testing as necessary to exclude alternative diagnoses

Key indicators which suggest a diagnosis of asthma include

1. Wheezing
2. History of cough (particularly nocturnal), recurrent wheeze, recurrent dyspnea, and recurrent chest tightness
3. Worsening of symptoms in the presence of exercise, viral infection, animals with fur, house dust mites, mold, smoke, pollen, changes in weather, strong emotional expression, airborne chemicals or dusts, or menses
4. Worsening of symptoms at night, awakening the patient

Differential Diagnosis of Asthma

- Upper airway disease (such as allergic rhinitis or sinusitis)
- Airway obstruction (large or small)
- Chronic obstructive pulmonary disease
- Congestive heart failure
- Pulmonary embolism
- Laryngeal and/or vocal cord dysfunction
- Cough related to drugs
- Gastroesophageal Reflux Disease (GERD)
- Cystic Fibrosis (CF)

Visit the Following Organizations' Websites for Information About Diagnosis of Asthma

- American Academy of Allergy Asthma and Immunology
  www.aaaai.org
- American College of Allergy Asthma and Immunology
  www.acaai.org
- American Lung Association
  www.lungusa.org
- Asthma and Allergy Foundation of America
  www.aafa.org
- Food Allergy & Anaphylaxis Network
  www.foodallergy.org
- Allergy & Asthma Network, Mothers of Asthmatics
  www.breatherville.org
- Centers for Disease Control and Prevention
  Potentially Effective Interventions for Asthma, Web page
  www.cdc.gov/asthma/interventions/default.htm
- The National Asthma Education Program Information Center
  National Heart, Lung and Blood Institute
  www.nhlbi.nih.gov/guidelines/asthma/index.htm
- National Jewish Health
  www.nationaljewish.org

ASSESSMENT OF SEVERITY DETERMINES INITIAL THERAPY

Initial Assessment of Asthma

Once the diagnosis of asthma has been established, information obtained from the diagnostic evaluation should be used to characterize the patient's asthma in order to guide initial therapy including the following:

1. Identification of precipitating factors
2. Identification of comorbidities
3. Classification of asthma severity

Asthma severity should be classified by use of the following:

1. Assessment of current impairment including presence of symptoms and status of lung function
2. Assessment of future risk of adverse events including exacerbations and risk of death

Classifying Asthma Severity in Youths ≥ 12 Years of Age and Adults

(who are not currently taking long-term control medication)

Components of Severity		Intermittent	Persistent		
			Mild	Moderate	Severe
Impairment : Normal FEV_1/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 x/month	3 – 4 x/ month	> 1 x/week but not nightly	Often 7 x/week
	Short-acting β_2-agonist (SABA) use for symptom control (not prevention of exercise-induced bronchospasm – EIB)	≤ 2 days/week	> 2 days/ week but > 1 x/day	Daily	Several times per day
	Interference with normal activity	None	Minor limitation	Some limitation	Extremely limited
	Lung Function	•Normal FEV_1 between exacerbations •FEV_1 > 80% predicted •FEV_1/FVC normal	•FEV_1 ≥ 80% predicted •FEV_1/FVC normal	•FEV_1 > 60% but < 80% predicted •FEV_1/FVC reduced 5%	•FEV_1 < 60% predicted •FEV_1/FVC reduced > 5%
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_1			

Classifying Asthma Severity in Children 5 – 11 Years of Age

(who are not currently taking long-term control medication)

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	≤ 2 ×/month	3 – 4 ×/ month	> 1 ×/week but not nightly	Often 7 ×/ week
	Short-acting β_2-agonist (SABA) use for symptom control (not prevention of exercise-induced bronchospasm – EIB)	≤ 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	•Normal FEV_1 between exacerbations •FEV_1 > 80% predicted •FEV_1/FVC > 85%	•FEV_1 > 80% predicted •FEV_1/FVC > 80%	•FEV_1 = 60% – 80% predicted •FEV_1/FVC = 75% – 80%	•FEV_1 < 60% predicted •FEV_1/FVC < 75%
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_1			

Classifying Asthma Severity in Children 0 – 4 Years of Age

(who are not currently taking long-term control medication)

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	0	1 – 2 ×/ month	3 – 4 ×/ month	> 1 ×/week
	Short-acting β_2-agonist (SABA) use for symptom control (not prevention of exercise-induced bronchospasm – EIB)	≤ 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
Risk	Exacerbations requiring oral systemic corticosteroids	0 – 1/year	≥ 2 exacerbations in 6 months requiring oral steroids, or ≥ 4 wheezing episodes/ 1 year lasting > 1 day AND risk factors for persistent asthma		
		Consider severity and interval since last exacerbation. Frequency and severity may fluctuate over time.			
		Exacerbations of any severity may occur in patients in any severity category			

MONITORING CONTROL DETERMINES ONGOING THERAPY

Asthma control is achieved by:

1. **Reducing impairment, which includes the following:**
   a. Prevention of chronic and troublesome symptoms
   b. Reducing need for inhaled short-acting bronchodilator to relieve symptoms
   c. Maintenance of near normal lung function
   d. Maintenance of normal activity levels
   e. Patient and family satisfaction
2. **Reducing risk, which includes the following:**
   a. Prevention of recurrent exacerbations
   b. Prevention of progressive loss of lung function
   c. Avoidance of adverse effects of pharmacotherapy for asthma

Components of Control (≥ 12 Years of Age and Adults)		Classification of Asthma Control		
		Well Controlled	Not Well Controlled	Very Poorly Controlled
Impairment	Symptoms	≤ 2 days/week	> 2 days/week	Throughout the day
	Nighttime awakenings	≤ 2 x/month	1 – 3 x/week	≥ 4 x/week
	Interference with normal activity	None	Some limitation	Extremely limited
	Short-acting β_2-agonist use for symptom control (not prevention of EIB)	≤ 2 days/week	> 2 days/week	Several times per day
	FEV_1 or peak flow	> 80% predicted/ personal best	60% – 80% predicted/ personal best	< 60% predicted/ personal best
	Validated questionnaires ATAQ ACQ ACT	 0 ≤ 0.75 ≥ 20	 1 – 2 ≥ 1.5 16 – 19	 3 – 4 N/A ≤ 15
Risk	Exacerbations requiring oral systemic corticosteroids	0 – 1/year	≥ 2/year	
		Consider severity and interval since last exacerbation		
	Progressive loss of lung function	Evaluation requires long-term follow-up care		
	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		• Maintain current step • Regular follow-ups every 1 – 6 months to maintain control • Consider step down if well controlled for at least 3 months	• Step up 1 step • Reevaluate in 2 – 6 weeks • For side effects, consider alternative treatment options	• Consider short course of oral systemic corticosteroids • Step up 1 – 2 steps • Reevaluate in 2 weeks • For side effects, consider alternative treatment options

Components of Control (Children 5 – 11 Years of Age)		Classification of Asthma 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	≤ 1 x/month	≥ 2 x/month	≥ 2 x/week
	Interference with normal activity	None	Some limitation	Extremely limited
	Short-acting β_2-agonist use for symptom control (not prevention of EIB)	≤ 2 days/week	> 2 days/week	Several times per day
	Lung function • FEV_1 or peak flow • FEV_1/FVC	• > 80% predicted/ personal best • > 80% predicted	• 60% – 80% predicted/ personal best • 75% – 80% predicted	• < 60% predicted/ personal best • < 75% predicted
Risk	Exacerbations requiring oral systemic corticosteroids	0 – 1/year	≥ 2/year	
		Consider severity and interval since last exacerbation		
	Reduction in lung growth	Evaluation 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		• Maintain current step • Regular follow-up every 1 – 6 months • Consider step down if well controlled for at least 3 months	• Step up at least 1 step • Reevaluate in 2 – 6 weeks • For side effects, consider alternative treatment options	• Consider short course of oral systemic corticosteroids • Step up 1 – 2 steps • Reevaluate in 2 weeks • For side effects, consider alternative treatment options

Components of Control (Children 0 – 4 Years of Age)		Classification of Asthma Control		
		Well Controlled	Not Well Controlled	Very Poorly Controlled
Impairment	Symptoms	≤ 2 days/week	> 2 days/week	Throughout the day
	Nighttime awakenings	≤ 1 x/month	> 1 x/month	> 1 x/week
	Interference with normal activity	None	Some limitation	Extremely limited
	Short-acting β_2-agonist use for symptom control (not prevention of EIB)	≤ 2 days/week	> 2 days/week	Several times per day
Risk	Exacerbations requiring oral systemic corticosteroids	0 – 1/year	2 – 3/year	> 3/year
	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		• Maintain current treatment • Regular follow-up every 1 – 6 months • Consider step down if well controlled for at least 3 months	• Step up 1 step • Reevaluate in 2 – 6 weeks • If no clear benefit in 4 – 6 weeks, consider alternative diagnoses or adjusting therapy • For side effects, consider alternative treatment options	• Consider short course of oral systemic corticosteroids • Step up 1 – 2 steps • Reevaluate in 2 weeks • If no clear benefit in 4 – 6 weeks, consider alternative diagnoses or adjusting therapy • For side effects, consider alternative treatment options

Periodic assessments and ongoing monitoring of asthma control are recommended to determine if the goals of therapy are being met and if adjustments in therapy are needed. This should include the following:

- Assessment of signs and symptoms of asthma
- Assessment of lung function
- Estimation of quality of life and patient functional status
- Determination of the presence of any exacerbations
- Evaluation and (if necessary) adjustment of pharmacotherapy regimen
- Assessment of patient satisfaction
- Avoidance of triggers/environmental control

Tools which can be used to monitor asthma control include the following:

- Clinician assessment
- Patient self-assessment
- Spirometry
- Action plans

Stepwise Approach for Managing Asthma in Youths ≥ 12 Years of Age and Adults

Intermittent Asthma	Persistent Asthma: Daily Medication Consult with asthma specialist if Step 4 care or higher is required. Consider consultation at Step 3.					
Step 1 *Preferred:* SABA PRN	**Step 2** *Preferred:* Low-dose ICS *Alternative:* LTRA cromolyn, nedocromil, or theophylline	**Step 3** *Preferred:* Low-dose ICS + LABA OR Medium-dose ICS *Alternative:* Low-dose ICS + either LTRA, theophylline, or zileuton	**Step 4** *Preferred:* Medium-dose ICS + Long-acting β_2-agonist (LABA) *Alternative:* Medium-dose ICS + either LTRA, theophylline, or zileuton	**Step 5** *Preferred:* High-dose ICS + LABA AND Consider omalizumab for patients who have allergies	**Step 6** *Preferred:* High-dose ICS + LABA + oral corticosteroid AND Consider omalizumab for patients who have allergies	Step up if needed First, check adherence and environmental control, and comorbid conditions **Assess control** Step down if possible and asthma is well controlled at least 3 months

Each Step: Patient education, environmental control, and management of comorbidities

Step 2 – 4: Consider subcutaneous allergen immunotherapy for patients who have allergic asthma .

Quick-Relief Medication for All Patients

- 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.
- Use of SABA > 2 days a week for symptom relief (not prevention of EIB) generally indicates inadequate control and the need to step up treatment.

Stepwise Approach for Managing Asthma in Children 5 – 11 Years of Age

Intermittent Asthma

Persistent Asthma: Daily Medication
Consult with asthma specialist if Step 4 care or higher is required.
Consider consultation at Step 3.

Step 1
Preferred:
SABA PRN

Step 2
Preferred:
Low-dose ICS
Alternative:
LTRA, cromolyn, nedocromil, or theophylline

Step 3
Preferred:
EITHER: Low-dose ICS + either LABA, LTRA, or theophylline
OR
Medium-dose ICS

Step 4
Preferred:
Medium-dose ICS + LABA
Alternative:
Medium-dose ICS + either LTRA or theophylline

Step 5
Preferred:
High-dose ICS + LABA
Alternative:
High-dose ICS + either LTRA or theophylline

Step 6
Preferred:
High-dose ICS + LABA + oral systemic corticosteroid
Alternative:
High-dose ICS + either LTRA or theophylline + oral systemic corticosteroid

Step up if needed.
First, check adherence, inhaler technique, environmental control and comorbid conditions
Assess control
Step down if possible and asthma is well controlled at least 3 months

Each step: Patient education, environmental control, and management of comorbidities
Step 2 – 4: Consider subcutaneous allergen immunotherapy for patients who have allergic asthma.

Quick-Relief Medication for All Patients
- 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.

Stepwise Approach for Managing Asthma in Children 0 – 4 Years of Age

Intermittent Asthma

Persistent Asthma: Daily Medication
Consult with asthma specialist if Step 3 care or higher is required.
Consider consultation at Step 2.

Step 1
Preferred:
SABA PRN

Step 2
Preferred:
Low-dose ICS
Alternative:
montelukast or cromolyn

Step 3
Preferred:
Medium-dose ICS

Step 4
Preferred:
Medium-dose ICS + either LABA or montelukast

Step 5
Preferred:
High-dose ICS + either LABA or montelukast

Step 6
Preferred:
High-dose ICS + either LABA or montelukast + oral systemic corticosteroid

Step up if needed.
First, check adherence, inhaler technique, environmental control and comorbid conditions
Assess control
Step down if possible and asthma is well controlled at least 3 months

Patient education, environmental control at each step

Quick-Relief Medication for All Patients
- SABA as needed for symptoms. Intensity of treatment depends on severity of symptoms.
- With viral respiratory infection: SABA q 4 – 6 hours up to 24 hours (longer with physician consult). Consider short course of oral systemic corticosteroids if exacerbation is severe or patient has history of previous severe exacerbations.
- Caution: Frequent use of SABA may indicate the need to step up treatment. See text for recommendations on initiating daily long-term-control therapy.

SUCCESSFUL MANAGEMENT DEPENDS ON A COMPREHENSIVE APPROACH

EDUCATION

Document that patients have been provided with information on:

- Basic facts about asthma
- Roles of different medications in the treatment of asthma including the difference between long-term controller medications and short-acting medications for quick relief
- Skills necessary to properly manage their asthma including the use of devices and symptom monitoring tools, as well as understanding specific precipitants to their asthma
- Methods to control environmental triggers for asthma
- When and how to adjust asthma treatment
- When to seek medical care
- Optimization of community resources and not-for-profit organizations (eg, American Lung Association)

ENVIRONMENTAL CONTROL

- Reduce or eliminate exposure to allergens including the following:
  - **a.** Animal dander
  - **b.** House dust mites
  - **c.** Cockroaches
  - **d.** Pollens
  - **e.** Indoor mold/mildew
  - **f.** Perfumes
- Smoke only outside the home
- Discuss ways to reduce exposure to indoor/outdoor pollutants including the following:
  - **a.** Wood-burning stoves and fireplaces
  - **b.** Unvented stoves or heaters
  - **c.** Irritants such as perfumes, cleaning agents, and sprays
  - **d.** Volatile organic compounds such as those from home renovations
  - **e.** Limitation of exposure to outdoor precipitants: pollen, grass, and affected clothing
  - **f.** Proper maintenance and cleaning of equipment used to reduce allergens (eg, vacuum cleaners and air conditioning system filters)

USE OF APPROPRIATE PHARMACOLOGIC THERAPIES

(Long-term/quick relief listed alphabetically)

Long-term control medications should be used to achieve and maintain control of persistent asthma and include the following:

- Inhaled corticosteroids (ICS)
- Cromolyn sodium and nedocromil
- Immunomodulators including anti-IgE therapy
- Leukotriene modifiers including leukotriene receptor antagonists (LTRAs) and a 5-lipoxygenase inhibitor
- Long-acting bronchodilators with anti-inflammatory therapy
- Methylxanthines

Quick-relief medications should be used to treat acute symptoms and exacerbations and include the following:

- Anticholinergics
- Short-acting bronchodilators
- Short-course oral corticosteroid therapy
- Systemic corticosteroids

EFFECTIVE ASTHMA MANAGEMENT INCLUDES MANAGING SPECIAL SITUATIONS

EXERCISE-INDUCED BRONCHOSPASM

Exercise-induced bronchospasm (EIB) is often a marker of inadequate asthma control. Patients with a history of cough, dyspnea, chest pain or tightness, or endurance problems during exercise should be considered as potentially having EIB. Clinicians should understand the concept that an important dimension of asthma control is a patient's ability to participate in any activity he or she chooses without experiencing asthma symptoms.

Management of EIB may be accomplished with the following:

- Long-term controller medications
- Pre-treatment before exercise with inhaled β_2-agonists, LTRAs, or cromolyn
- Warm up period prior to exercise
- Use of masks over the mouth (may attenuate cold-induced EIB)

SURGERY AND ASTHMA

Patients with asthma are at specific risk for complications during and after surgery. To reduce complications the following should be done:

- Review of medication regimen and lung function prior to surgery including out-patient and office-based procedures requiring anesthesia
- Attempts at optimization of lung function preoperatively
- The use of stress dose steroids in patients who have been on systemic corticosteroids during the past 6 months and for selected patients on a chronic high dose of an inhaled corticosteroid (ICS)

PREGNANCY AND ASTHMA

Maintaining adequate control of asthma during pregnancy is important for the health of both mother and baby. Recommendations to achieve adequate asthma control include the following:

- Monitoring of asthma status during prenatal visits
- Use of albuterol as the preferred short-acting bronchodilator
- Use of inhaled corticosteroids, specifically budesonide, as the preferred long-term control medication
- Treatment of comorbid allergic conditions with intranasal corticosteroids, LTRAs, and second generation antihistamines such as loratadine and cetirizine

RACIAL AND ETHNIC DISPARITY IN ASTHMA

Several factors may affect asthma control in racial and ethnic minority populations. These include the following:

- Lack of adherence to prescribed therapy
- Reduced use of preventive medications
- Increased exposure to potential environmental asthma triggers
- Potential biological differences in response to asthma therapy
- Lack of external educational opportunities

Because of this, a heightened awareness of cultural barriers between the clinician and the patient should influence asthma management. Modification of educational and communication strategies should be considered to address these barriers.

EARLY MANAGEMENT OF EXACERBATIONS REDUCES MORBIDITY

Early treatment of asthma exacerbations occurring mainly in a home setting is the best strategy for management. Important elements include the following:

- Patient education including home self-management instructions
- Recognition of early signs of worsening
- Appropriate intensification of therapy when warranted
- Removal or withdrawal from contributing environmental factors
- Prompt communication between patient and clinician

CLASSIFYING THE SEVERITY OF ASTHMA EXACERBATIONS IN THE URGENT OR EMERGENCY CARE SETTING

	Signs & Symptoms	Initial PEF (or FEV_1)	Clinical Course
Mild	Dyspnea only with activity (assess tachypnea in young children)	PEF ≥ 70% predicted or personal best	• Usually cared for at home • Prompt relief with inhaled SABA • Possible short course of oral systemic corticosteroids
Moderate	Dyspnea interferes with or limits usual activity	PEF 40% – 69% predicted or personal best	• Usually requires office or ED visit • Relief from frequent inhaled SABA • Oral systemic corticosteroids; some symptoms last for 1 – 2 days after treatment is begun
Severe	Dyspnea at rest; interferes with conversation	PEF < 40% predicted or personal best	• Usually requires ED visit and likely hospitalization • Partial relief from frequent inhaled SABA • Oral systemic corticosteroids; some symptoms last for > 3 days after treatment is begun • Adjunctive therapies are helpful
Subset: Life Threatening	Too dyspneic to speak; diaphoretic	PEF < 25% predicted or personal best	• Requires ED/hospitalization; possible ICU • Minimal or no relief from frequent inhaled SABA • Intravenous corticosteroids • Adjunctive therapies are helpful

When treatment in the ED is required it includes the following:

- Oxygen to relieve hypoxemia
- Short-acting bronchodilators to relieve airflow obstruction
- Systemic corticosteroids to decrease airway inflammation
- Adjunctive therapy (as indicated) with magnesium sulfate or heliox
- Ongoing monitoring of response to therapy with serial measurements of lung function
- Preventing relapse of the exacerbation or recurrence of symptoms by providing appropriate follow-up and education

When the patient requires hospitalization, and discharge is anticipated the following should be prescribed:

- Continued treatment with short-acting bronchodilators
- A tapered course of systemic oral corticosteroids
- Continued treatment with or consideration of adding an inhaled corticosteroid (ICS)
- Patient education
- A scheduled follow-up appointment with the primary care provider and/or asthma specialist within 1 to 4 weeks

Prevent relapse of the exacerbation or recurrence of symptoms by providing appropriate follow-up and education.

ADHERENCE TO ASTHMA THERAPY IS ESSENTIAL FOR IMPROVED PATIENT OUTCOMES

THE BASICS ABOUT ADHERENCE

Adherence[1] is defined as "*...the extent to which a person's behavior–taking medication, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a health care provider.*"

Adherence to asthma medication regimens tends to be very poor, below that of other chronic diseases, ranging from 30%–70%.

WHY CARE ABOUT ADHERENCE?

Up to 75% of total costs associated with treating asthma may be related to poor asthma control

↓

Improved adherence may lead to better asthma control

↓

Improved adherence may result in decreased costs and better outcomes for asthma patients

POTENTIAL REASONS FOR NON ADHERENCE IN THE PATIENT WITH ASTHMA

Medication-related factors

- Difficulties with inhaler devices
  - Inappropriate use by patients
  - Ineffective education by providers
  - Confusion regarding controller versus rescue inhalers
- Complex medication regimens
- Concern regarding adverse effects
- Cost of medications
- General dislike of medication

Non-medication related factors

- Lack of information or education about the disease process
- Dissatisfaction with healthcare providers
- Fear and anxiety about having a chronic condition
- Inappropriate expectations of asthma therapy
- Lack of supervision, training, or necessary follow-up
- Underestimation of disease severity
- Cultural issues
- Stigmatization
- Forgetfulness or complacency

1. Sabaté E, ed. *Adherence to long-term therapies: evidence for action.* Geneva, World Health Organization, 2003.

STRATEGIES TO IMPROVE ADHERENCE TO ASTHMA THERAPY

- Assess and encourage adherence during all asthma-related visits
- Choose a treatment regimen that achieves outcomes and addresses preferences that are important to both the patient and the caregiver
- Use effective techniques to promote open communication with the patient
- Assess patient's ability to read if written materials are utilized
- Ask the patient about their goals for each asthma-related visit
- Link provider goals (eg, improved asthma control) with patient goals (eg, improved quality of life)
- Ask about and address the patient's concerns regarding therapy
- Assess the patient's and family's perceptions of the severity level of the disease and how well it is controlled
- Assess the patient's and family's level of social support and encourage family involvement
- Assess levels of stress, family disruption, anxiety, and depression associated with asthma and asthma management
- Assess ability to adhere to the written asthma action plans including the daily self-management plan and the plan for management of exacerbations
- Simplify the therapeutic regimen as much as possible
- Assess the patient's ability to afford asthma medications and its potential impact upon therapeutic adherence
- Provide positive reinforcement to the adherent patient

PRIME®

8201 W. McNab Road, Tamarac, FL 33321
Phone: 954.718.6055 Fax: 954.718.6013

primeinc.org