

Asthma Clinical Guidelines ≥12 Years

Adapted from the Global Initiative for Asthma (GINA) 2018 Guidelines for the Diagnosis and Management of Asthma and the National Heart, Lung, and Blood Institutes's (NHLBI) National Asthma Education and Prevention Program (NAEPP) 2007 Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma



INITIAL ASSESSMENT

Symptoms	Medical History	Comorbidities
<ul style="list-style-type: none"> • Recurrent wheezing • Coughing • Chest tightness • Expiratory airflow limitations • Dyspnea 	<ul style="list-style-type: none"> • Allergic rhinitis • Allergies • Atopic dermatitis (eczema) • Family history of asthma or allergy • Pneumonia • Recurrent bronchitis • Premature Birth 	<ul style="list-style-type: none"> • Rhinitis • Sinusitis • GERD • Obesity • OSA • Depression and anxiety

Risk factors that may exacerbate symptoms	Red flags
<ul style="list-style-type: none"> • Exercise • Upper Respiratory Tract Infections • Allergen exposure/sensitization • Changes in weather • Environmental Tobacco Smoke • Tobacco or marijuana use • Irritants (woodsmoke, airborne chemicals, strong smells) • Stress • Menstrual cycles • Strong emotional expressions 	<ul style="list-style-type: none"> • History of steroid use • ED visits • Hospitalization • Nocturnal symptoms • Overuse of SABA

Differential diagnosis	Patients 40+ years
<ul style="list-style-type: none"> • Chronic upper airway cough syndrome • Bronchiectasis • Primary ciliary dyskinesia • Cystic fibrosis • Vocal cord dysfunction • Tuberculosis 	<ul style="list-style-type: none"> • COPD • Bronchiectasis • Cardiac Failure • Interstitial/Diffuse Lung Disease

Features that decrease probability that respiratory symptoms are due to asthma	
<ul style="list-style-type: none"> • Chronic sputum production • Dyspnea associated with dizziness, light headedness or peripheral tingling 	<ul style="list-style-type: none"> • Chest pain • Exercise-induced dyspnea with noisy inspiration • Exercise-induced dyspnea which resolves quickly with rest

Diagnostics, Classification and Symptom Control Assessment ≥12 years

DIAGNOSTICS

Spirometry	Recommended Additional Testing
<ul style="list-style-type: none"> Performed at diagnosis or start of treatment, after 3-6 months of controller treatment to assess the patient's personal best FEV₁, every 1-2 years, more frequently in at risk patients. Lung function does not correlate strongly with asthma symptoms in adults and children; a low FEV₁ is a strong independent predictor of risk of exacerbations, even after adjustment for symptom frequency. 	<ul style="list-style-type: none"> Pulse Oximetry CXR Consider allergy testing

SEVERITY CLASSIFICATION

Components of Severity*		Intermittent	Persistent		
			Mild	Moderate	Severe
Impairment	Daytime symptoms	≤2 days/week	>2 days/week but not daily	Daily	Throughout the day
	Nighttime awakenings	≤2x/month	3-4x/month	>1x/week	7x/week
	SABA ¹ use for symptom control ²	≤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 Normal	FEV ₁ >80% FEV ₁ /FVC Normal	FEV ₁ =60-80% FEV ₁ /FVC=70-75%	FEV ₁ <60% FEV ₁ /FVC<70%
Risk	Exacerbations requiring oral corticosteroids	0-1/yr	≥2 exacerbations in 1 year requiring oral corticosteroids [†]		

* Level of severity is determined by both impairment and risk. Assess impairment domain by patient's/caregiver's recall of the previous 2-4 weeks and spirometry (if ≥5yrs of age). Severity may be assigned to the most severe category in which any feature occurs.

† At present, there are inadequate data to correspond frequency of exacerbations with different levels of asthma severity. In general, more frequent and intense exacerbations (e.g., requiring urgent, unscheduled care, hospitalization, or ICU admission) indicate greater underlying disease severity. For treatment purposes, patients ≥5yrs of age who had ≥2 exacerbations requiring oral systemic corticosteroids 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.

¹ Short-acting inhaled beta₂-agonist.

² Does not include SABA for prevention of exercise-induced bronchospasm.

Asthma Symptom Control Assessment			Level of Asthma Symptom Control		
In the past 4 weeks, has the patient had:	Yes	No	Well controlled	Partly controlled	Uncontrolled
Daytime asthma symptoms for more than a few minutes, more than twice a week?			None of these	1-2 of these	3 or more
Any activity limitation due to asthma? (Runs/plays less than other children, tires easily during walks/playing?) Missed work or school due to asthma?					
Reliever medication needed* more than twice a week?					
Any night waking or night coughing due to asthma?					
Have you been to a quick care or ED for your asthma since your last visit?					
Have you been prescribed an oral corticosteroid (OCS) for your asthma since your last visit?					

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* Excludes reliever taken before exercise

Stepwise Approach and Management ≥12 years

STEPWISE APPROACH TO MANAGEMENT ≥12 YEARS

	Step 1	Step 2	Step 3	Step 4	Step 5
Preferred Controller		Low dose ICS	Consider Consult with an Asthma Specialist Medium dose ICS/LABA	Refer to an Asthma Specialist Medium/high ICS/LABA	Refer to an Asthma Specialist Refer for add-on treatment: LAMA* anti-IgE anti-IL5
Other Controller Options		LTRA	Med/high dose ICS Low dose ICS + LTRA	Add LAMA* High dose ICS + LTRA	Add low dose OCS
Reliever	As needed short-acting beta ₂ -agonist (SABA)				
Severity Classification**	Intermittent	Mild Persistent	Moderate Persistent	Moderate to Severe Persistent	Severe Persistent

KEY:

SABA – short-acting beta₂ agonist

LABA – long-acting beta₂ agonist

LAMA – long-acting muscarinic antagonist

LTRA – leukotriene receptor antagonist

ICS – inhaled corticosteroid

OCS – oral corticosteroid

SMI – soft mist inhaler

*Spiriva (tiotropium bromide respimat SMI) by mist inhaler is an add-on treatment for patients with a history of exacerbations.

**Asthma severity is assessed retrospectively from the level of treatment required to control symptoms and exacerbations. It can be assessed once the patient has been on controller treatment for several months and, if appropriate, treatment stepdown has been attempted to find the patient's minimum effective level of treatment. Asthma severity is not a static feature and may change over months or years.

MANAGEMENT

Assess symptom control over last 4 weeks- System Control Assessment

Tobacco treatment referral for:

- Patient if active tobacco user
- Parents/Caregivers if patient is exposed to environmental tobacco smoke

Influenza vaccine

Allergen avoidance

Pneumonia vaccine (up to date)

Set goals for managing asthma and medications

Assess and treat comorbidities

Self-management education

- Written asthma action plan
- Inhaler education with teach back*
- Assess adherence

Physical activity

Annual visits

* "Inhaler competence in asthma: Common errors, barriers to use and recommended solutions." Respiratory Medicine. October 23, 2012
<https://www.sciencedirect.com/science/article/pii/S0954611112003587>

Corticosteroids ≥12 years

DAILY DOSES OF INHALED CORTICOSTEROIDS

Brand name	Corticosteroid	Low	Medium	High
Asmanex Twisthaler	Mometasone furoate (DPI)	110 mcg or 220 mcg 1 puff once daily	220 mcg or 440 mcg 1 puff once daily	440 mcg 2 puffs once daily
Asmanex	Mometasone furoate (HFA)	90 mcg 2 puffs once daily	200 mcg 2 puffs once daily	200 mcg 2 puffs twice daily
Arnuity Ellipta	Fluticasone furoate (DPI)	100 mcg 1 puff once daily	200 mcg 1 puff once daily	200 mcg 1 puff twice daily
Flovent Diskus	Fluticasone propionate (DPI)	50 mcg 1 puff twice daily	100 mcg 1 puff twice daily	250 mcg or 500 mcg 1 puff twice daily
Flovent	Fluticasone propionate (HFA)	44 mcg 2 puffs twice daily	110 mcg 2 puffs twice daily	220 mcg 2 puffs twice daily
Pulmicort Flexhaler	Budesonide (DPI)	90 mcg 1 puff twice daily	180 mcg 1 puff twice daily	180 mcg 2 puffs twice daily
QVAR	Beclomethasone dipropionate (HFA) or RediHaler (DPI)	40 mcg 2 puffs twice daily	80 mcg 2 puffs twice daily	80 mcg 4 puffs twice daily

For more information, contact MaineHealth Pediatric Service Line Program Manager at 207-662-2439