

بِه نام خدا

GOALS OF ASTHMA TREATMENT

Reduce impairment

Reduce risk

Reduce impairment — Impairment refers to the intensity and frequency of asthma symptoms and the degree to which the patient is limited by these symptoms. Specific goals for reducing impairment include:

Freedom from frequent or troublesome symptoms of asthma (cough, chest tightness, wheezing, or shortness of breath), including symptoms that disturb sleep

Minimal need (≤ 2 times per week) of inhaled short acting beta agonists (SABAs) to relieve symptoms

Optimization of lung function

Maintenance of normal daily activities, including work or school attendance and participation in athletics and exercise

Satisfaction with asthma care on the part of patients and families

Reduce risk — the Specific goals for reducing risk include:

Prevention of recurrent exacerbations and need for emergency department or hospital care

Prevention of reduced lung growth in children, and loss of lung function in adults

Optimization of pharmacotherapy with minimal or no adverse effects

CONTROLLING TRIGGERS AND CONTRIBUTING CONDITIONS

Inhaled allergens

Respiratory irritants

Comorbid conditions

Medications

Complications of influenza

Complications of pneumococcal infection

Dietary sulfites

Categories of asthma severity

Reported symptoms over the previous two to four weeks

Current level of lung function
(FEV₁ and FEV₁/FVC values)

Number of exacerbations requiring oral glucocorticoids per year

Components of severity		Classification of asthma severity (≥12 years of age)			
		Intermittent	Persistent		
			Mild	Moderate	Severe
Impairment	Symptoms	≤2 days/week	>2 days/week but not daily	Daily	Throughout the day
Normal FEV ₁ /FVC:	Nighttime awakenings	≤2x/month	3 to 4x/month	>1x/week but not nightly	Often 7x/week
8 to 19 years 85 percent	Short-acting beta ₂ -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
20 to 39 years 80 percent					
40 to 59 years 75 percent					
60 to 80 years 70 percent	Interference with normal activity	None	Minor limitation	Some limitation	Extremely limited
	Lung function	• Normal FEV ₁ between exacerbations • FEV ₁ >80 percent predicted • FEV ₁ /FVC normal	• FEV ₁ ≥80 percent predicted • FEV ₁ /FVC normal	• FEV ₁ >60 but <80 percent predicted • FEV ₁ /FVC reduced 5 percent	• FEV ₁ <60 percent predicted • FEV ₁ /FVC reduced >5 percent
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 ₁			
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.			

Intermittent (Step 1)

Patients with mild intermittent asthma are best treated with a quick-acting inhaled beta-2-selective adrenergic agonist, taken as needed for relief of symptoms

Mild persistent (Step 2)

For mild persistent asthma, the preferred long-term controller is a low dose inhaled glucocorticoid (GC)

Alternative strategies for treatment of mild persistent asthma include leukotriene receptor antagonists, [theophylline](#), and cromoglycates

Moderate persistent (Step 3)

For moderate persistent asthma, the preferred therapies are either low-doses of an inhaled glucocorticoid plus a long-acting inhaled beta agonist, or medium doses of an inhaled glucocorticoid

Severe persistent (Step 4 or 5)

For severe persistent asthma, the preferred treatments are medium (Step 4) or high (Step 5) doses of an inhaled glucocorticoid, in combination with a long-acting inhaled beta-agonist .

In addition, for patients who are inadequately controlled on high-dose inhaled GCs and LABAs, the anti-IgE therapy [omalizumab](#) may be considered if there is objective evidence (allergy skin tests or in vitro measurements of allergen-specific IgE) of sensitivity to a perennial allergen and if the serum IgE level is within the established target range

Step 6 therapy for the management of severe asthma involves the addition of oral glucocorticoids on a daily or alternate-day basis.

**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:
Cromolyn,
LTRA,
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 + 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,
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.

Steps 2-4: consider subcutaneous allergen immunotherapy for patients who have allergic asthma (see footnotes).

WHEN TO REFER — Both pulmonologists and allergists/immunologists have specialty training in asthma care. Referral for consultation or comanagement is recommended when any of the following circumstances arise:

The patient has experienced a life-threatening asthma exacerbation

The patient has required hospitalization or more than two bursts of oral corticosteroids in a year

The adult and pediatric patient older than five years requires step 4 care or higher or a child under five requires step 3 care or higher

Asthma is not controlled after three to six months of active therapy and appropriate monitoring

The patient appears unresponsive to therapy

The diagnosis of asthma is uncertain

Other conditions are present which complicate management (nasal polyposis, chronic sinusitis, severe rhinitis, allergic bronchopulmonary aspergillosis, COPD, vocal cord dysfunction, etc)

Additional diagnostic tests are needed (skin testing for allergies, bronchoscopy, complete pulmonary function tests)

Patient may be a candidate for allergen immunotherapy