

SECTION 4, MANAGING ASTHMA LONG TERM: OVERVIEW

KEY POINTS: MANAGING ASTHMA LONG TERM

- The goal for therapy is to control asthma by (Evidence A):
 - Reducing impairment
 - ◆ Prevent chronic and troublesome symptoms (e.g., coughing or breathlessness in the daytime, in the night, or after exertion)
 - ◆ Require infrequent use (≤ 2 days a week) of inhaled short-acting beta₂-agonist (SABA) for quick relief of symptoms (not including prevention of exercise-induced bronchospasm (EIB))
 - ◆ Maintain (near) normal pulmonary function
 - ◆ Maintain normal activity levels (including exercise and other physical activity and attendance at work or school)
 - ◆ Meet patients' and families' expectations of and satisfaction with asthma care
 - Reducing risk
 - ◆ Prevent recurrent exacerbations of asthma and minimize the need for emergency department (ED) visits or hospitalizations
 - ◆ Prevent progressive loss of lung function; for children, prevent reduced lung growth
 - ◆ Provide optimal pharmacotherapy with minimal or no adverse effects
- A stepwise approach to pharmacologic therapy is recommended to gain and maintain control of asthma in both the impairment and risk domains (Evidence A):
 - The type, amount, and scheduling of medication is dictated by asthma *severity for initiating* therapy and the level of asthma *control for adjusting* therapy (Evidence A).
 - Step-down therapy is essential to identify the minimum medication necessary to maintain control (Evidence D).
- Monitoring and followup is essential (Evidence B).
 - When initiating therapy, monitor at 2- to 6-week intervals to ensure that asthma control is achieved (Evidence D).
 - Regular followup contacts at 1- to 6-month intervals, depending on level of control, are recommended to ensure that control is maintained and the appropriate adjustments in therapy are made: step up if necessary or step down if possible. Consider 3-month intervals if a step down in therapy is anticipated (Evidence D).

- Because asthma is a chronic inflammatory disorder of the airway, persistent asthma is most effectively controlled with daily long-term control medication directed toward suppression of airway inflammation (Evidence A).
- Therapeutic strategies should be considered in concert with clinician-patient partnership strategies; education of patients is essential for achieving optimal pharmacologic therapy (Evidence A).
- At each step, patients should be advised to avoid or control allergens (Evidence A), irritants, or comorbid conditions that make the patient's asthma worse (Evidence B).
- A written asthma action plan detailing for the individual patient the daily management (medications and environmental control strategies) and how to recognize and handle worsening asthma is recommended for all patients; it is particularly recommended for patients who have moderate or severe asthma, a history of severe exacerbations, or poorly controlled asthma (Evidence B). The written asthma action plan can be either symptom or peak-flow based; evidence shows similar benefits for each (Evidence B).
- Referral to an asthma specialist for consultation or comanagement of the patient is recommended if there are difficulties achieving or maintaining control of asthma; if additional education is needed to improve adherence; if the patient requires step 4 care or higher (step 3 care or higher for children 0–4 years of age); or if the patient has had an exacerbation requiring hospitalization. Consider referral if a patient requires step 3 care (step 2 care for children 0–4 years of age) or if additional testing for the role of allergy is indicated (Evidence D).

KEY DIFFERENCES FROM 1997 AND 2002 EXPERT PANEL REPORTS

- Recommendations for managing asthma in children 0–4 and 5–11 years of age are presented separately from recommendations for managing asthma in youths ≥ 12 years of age and adults.
- Treatment decisions for *initiating* long-term control therapy are based on classifying severity (considering both the impairment and risk domains) and selecting a corresponding step for treatment. Recommendations on when to initiate therapy in children 0–4 years of age have been revised.
- Treatment decisions for *adjusting* therapy and maintaining control are based on assessing the level of asthma control (considering both the impairment and risk domains).
- The distinction between the domains of impairment and risk for assessing asthma control and guiding decisions for therapy emphasizes the need to consider separately asthma's effects on quality of life and functional capacity on an ongoing basis (i.e., in the present) and the risks it presents for adverse events in the future, such as exacerbations and progressive reduction in lung growth or lung function. These domains of asthma may respond differentially to treatment.

- Stepwise approach to managing asthma has been expanded to include six steps of care to simplify the actions within each step. For example, previous guidelines had several progressive actions within step 3, whereas the current guidelines separate the actions into different steps.
- Treatment options within the steps have been revised, especially:
 - For patients not well controlled on low-dose inhaled corticosteroid (ICS), increasing the dose of ICSs to medium dose is recommended before adding adjunctive therapy in the 0–4 years age group; for other age groups (children 5–11 years of age and youths ≥ 12 years of age and adults), increasing the dose of ICS to medium dose or adding adjunctive therapy to a low dose of ICS are considered as equal options.
 - Evidence for the selection of adjunctive therapy is limited in children under 12 years of age; recommendations vary according to the assessment of impairment or risk.
 - Steps 5–6 for youths ≥ 12 years of age and adults include consideration of omalizumab.
- Managing special situations has been expanded to include racial and ethnic disparities.

Introduction

The literature searches and results for all four components of asthma management (See section 3.) provided the foundation for the update of this section: “Managing Asthma Long Term.” The Expert Panel’s recommendations for managing asthma long term integrate the four components of therapy into a stepwise therapeutic approach for managing asthma long term, in which medications are increased as necessary and decreased if possible to achieve and maintain control of asthma. The general stepwise approach is applicable to all patients who have asthma. Adaptations are required, however, to tailor the approach to the needs of different patient groups. For example, it is important to consider the age of the patient, because the course of the disease may change over time, and the relevance of different assessment measures and potential short- and long-term impact of medications may be age related. Thus, the Expert Panel’s recommendations are presented for three different age groups: children 0–4 years of age, children 5–11 years of age, and youths ≥ 12 years of age and adults, based on the following considerations:

- Evidence available demonstrating safety and efficacy for many medications is age dependent (e.g., many clinical trials have enrolled patients ≥ 12 years of age only, and it is unknown if these results are applicable to children 5–11 years of age; furthermore, few trial data are available for children < 5 years of age).
- Issues related to drug delivery are often age dependent (e.g., the ability of a child and/or their caregivers to use nebulizers versus metered dose inhalers (MDIs) versus dry powder inhaler (DPI) devices).
- Approval of medications by the U.S. Food and Drug Administration (FDA) is based on age.
- Lung function measurements, used to classify asthma severity (impairment domain) and control (risk domain), are usually not possible in children < 5 years of age, and

interpretations of these tests may require special considerations for children 5–11 years of age.

- The characterization of various wheezing phenotypes is frequently age dependent, with different patterns among children 0–4 years of age compared to children 5–11 years of age or children 12 years of age or older and adults (e.g., severe episodes of virus-induced wheezing (risk domain) with periods of no symptoms in between episodes (impairment domain) are most frequently seen in preschool children).

Furthermore, situations arise which require special consideration of therapeutic options within the stepwise care: EIB, surgery, pregnancy, and racial and ethnic disparity.

This section, “Managing Asthma Long Term,” will present recommendations for each group separately: managing asthma long term in children (ages 0–4 years and 5–11 years), managing asthma long term in youths ≥ 12 years of age and adults, and managing special situations in asthma.