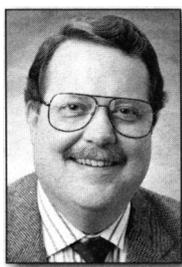


# NHLBI expert panel issues updated asthma guidelines

by Paul V. Williams, M.D., FAAAAI, FAAP



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Updates to the National Asthma Education and Prevention Program's (NAEPP) 1997 guidelines recently were released.

The National Heart, Lung and Blood Institute (NHLBI) convened the NAEPP in 1989, in response to concerns about the growing prevalence, morbidity and mortality of asthma, and

inconsistency in asthma care.

One of the first actions of the NAEPP was to establish an expert panel, whose function was to develop guidelines for the diagnosis and management of asthma. The expert panel's "Report: Guidelines for the Diagnosis and Management of Asthma" was released by the NAEPP in 1991. The second edition of the Expert Panel Report (EPR-2) was released in 1997.

The value of clinical practice guidelines depends on their basis in current evidence. Current research often is focused on a few areas at a time, and not all areas of asthma management are covered by current research. Given this, the NAEPP decided that a more efficient approach to keep the guidelines continuously updated would be to focus on selected topics for intensive review, based on the level of research activity or level of concern for clinical practice.

The NAEPP Science Based Committee, a multidisciplinary group of scientists and clinicians with expertise in asthma management, has had the responsibility of monitoring the scientific literature, selecting topics for review and recommending updates as necessary. In 1999, the NHLBI contracted with an Agency for Healthcare Research and Quality Evidence-based Practice Center, in this case, the Blue Cross Blue Shield Association Technology Evaluation Center, to conduct a systematic review of the evidence. The identified topics were:

1. Long-term management of asthma in children
  - a. Benefits of inhaled corticosteroids (ICS) in children with mild-to-moderate asthma compared to other long-term control medications
  - b. Safety of long-term inhaled corticosteroids in children
2. Effects of early treatment on the progression of asthma
3. Addition of other long-term control medications to inhaled corticosteroids
4. Effects of antibiotics on acute asthma exacerbations
5. Asthma management plans
  - a. Benefits of written asthma management plans
  - b. Advantages of management plans based on peak flow monitoring vs. symptom-based monitoring

After developing the criteria for review, the Evidence-based Practice Center selected 668 full-length journal articles for further review. Of these 668 articles, 87 met the criteria and formed the basis for the evidence review. A meta-analysis was performed for the topic on the benefits of adding long-term inhaled  $\beta_2$ -agonists to ICS for treatment of moderate persistent asthma. The expert panel served as the reviewers for the literature published over the seven-month period between the completion of the systematic review of the evidence by the Evidence-based

Practice Center and the formulation of the updates. Following are the 2002 Expert Panel Report Updates:

• **Topic 1a:** Strong evidence from clinical trials indicates that ICS are superior to other long-term medications, and as-needed  $\beta_2$ -agonists, on a variety of asthma outcomes. Studies comparing treatments in children under 5 years old are not available, so recommendations are based on expert opinion and extrapolation from studies in older children.

**New recommendation:** An ICS is preferred treatment for children with mild persistent asthma. Alternatives (listed alphabetically) include cromolyn, leukotriene receptor antagonists (LTRA), nedocromil and sustained release theophylline. The panel, based on observational studies, also recommends that long-term control therapy be considered in infants and young children who have had more than three episodes of wheezing in the past year that lasted more than one day and interfered with sleep and who have risk factors for the development of asthma (parental history of asthma, physician-diagnosed atopic dermatitis, or two of the following: physician-diagnosed allergic rhinitis, wheezing apart from colds or peripheral blood eosinophilia). Previously recommended indications still apply.

• **Topic 1b:** Strong evidence from clinical trials following children for up to six years shows that the use of ICS at recommended doses does not have frequent, clinically significant or irreversible effects on vertical growth, bone mineral density, ocular toxicity and suppression of the hypothalamic-pituitary-adrenal axis.

**Updated statement:** ICS improve health outcomes for children with mild or moderate persistent asthma, and the potential but small risk of delayed growth is well balanced by their effectiveness.

• **Topic 2:** Currently, evidence is insufficient to decide whether early treatment of asthma can prevent progression of the disease. Recently published large-scale studies of children with asthma between the ages of 5 and 12 years suggest that treatment with ICS provides superior symptom control, but does not apparently modify the underlying disease process. In contrast, observational studies have indicated that a loss of lung function can occur in 3- to 5-year-old children with asthma. Adequate studies of whether treatment can prevent declines in this age group have yet to be done.

• **Topic 3:** Strong evidence from clinical trials has shown consistently that use of long-acting inhaled  $\beta_2$ -agonists added to low-to-medium doses of ICS leads to improvements in outcomes. Adding a LTRA or theophylline to ICS or doubling the dose of ICS also improves outcomes, but the evidence is not as substantial. Few studies included children under age 12, and no studies have been done in children under age 5.

**New recommendations:** Preferred treatment for adults and children over age 5 with moderate persistent asthma is the addition of long-acting  $\beta_2$ -agonists to low-to-medium doses of ICS. It is the opinion of the expert panel that there are two options for children under 5 years of age: the addition of long-acting  $\beta_2$ -agonists to a low dose of ICS or medium-dose ICS as monotherapy.

• **Topic 4:** Evidence from clinical trials does not support the addition of antibiotics to standard asthma therapy for exacerbations whether added

routinely or when the suspicion for a bacterial infection is low.

**No recommended change:** The NAEPP EPR-2 recommendations remain unchanged. Antibiotics are not recommended for the treatment of acute asthma exacerbations, except as needed for comorbid conditions caused by suspected bacterial infections.

• **Topic 5a:** Data are insufficient to either support or refute the benefits of using written asthma action plans compared to medical management alone. Those studies that have been done have several methodological flaws that limit the conclusions that can be drawn. A Cochrane review of 25 studies comparing asthma self-management education interventions in adults did compare those with written plans and those without, and found that those with written action plans had the greatest benefits.

**No recommendation change:** The NAEPP EPR-2 recommendations have not been changed. It is the opinion of the expert panel that use of written action plans as part of an overall effort to educate patients in self-management is recommended, especially in patients with moderate to severe persistent asthma or with a history of severe exacerbations.

• **Topic 5b:** The available evidence is insufficient to make any changes in the current recommendations concerning peak flow-based written asthma management plans compared to symptom-based plans. Equivalent benefits have been demonstrated between the two methods, and patient characteristics may determine which approach is used (e.g., patients with poor perception of airflow obstruction).

**No recommended change:** The NAEPP EPR-2 recommendations are not changed. It is the opinion of the expert panel that peak flow monitoring for patients with moderate or severe persistent asthma should be considered because it may enhance clinician-patient communication and may increase patient and caregiver awareness of disease status and control.

*The executive summary can be found on the NHLBI Web site at [www.nhlbi.nih.gov/guidelines/asthma/index.htm](http://www.nhlbi.nih.gov/guidelines/asthma/index.htm).*

*Dr. Williams is a member of the NAEPP Coordinating Committee and the AAP Section on Allergy and Immunology.*

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