Summary of the NAEPP’s EPR-3: Guidelines for the Diagnosis and Management of Asthma

Consider the Diagnosis of ASTHMA if:
- Patient has RECURRENT episodes of cough, wheeze, shortness of breath, or chest tightness.
- Symptoms occur or worsen at night, awakening the patient.
- Symptoms occur or worsen in the presence of factors known to precipitate asthma.
- Alternative diagnoses have been considered such as GERD (a common co-morbidity), airway anomaly, foreign body, cystic fibrosis, vocal cord dysfunction, TB, or COPD. If diagnosis is in doubt, consider consulting an asthma specialist.

Confirm the Diagnosis of ASTHMA if:
- Spirometry demonstrates obstruction and reversibility by an increase in FEV₁ of ≥12% after bronchodilator (in all adults and children 5 years of age or older).

Assess Asthma Severity: Any of the following indicate PERSISTENT ASTHMA
- Daytime symptoms >2 days per week OR
- Awakens at night from asthma ≥2X per month (age 0-4 years: ≥1X per month) OR
- Limitation of activities, despite pretreatment for EIB OR
- Short-acting beta₂-agonist (SABA) use for symptom control >2 days per week (not prevention of EIB) OR
- Two or more bursts oral corticosteroids in 1 year (age 0-4 years: ≥2 bursts oral corticosteroids in 6 months*) OR
- Age ≥5 years: FEV₁ <80% predicted OR FEV₁/FVC ratio < predicted normal range for age (see below)

*NOTE: For children age 0-4 years who had 4 or more episodes of wheezing during the previous year lasting >1 day, check risk factors for persistent asthma. Risk factors include either (1) one of the following: parental history of asthma, a physician diagnosis of atopic dermatitis, or evidence of sensitization to aeroallergens, or (2) two of the following: evidence of sensitization to foods, ≥4% peripheral blood eosinophilia, or wheezing apart from colds.

Is Asthma Well Controlled?
1. Daytime symptoms ≤2 days per week AND
2. Awakens at night from asthma ≤1X per month (age ≥12 years: ≤2X per month) AND
3. No limitation of activities AND
4. SABA use for symptom control (not prevention of EIB) ≤2 days per week AND
5. ≤1 burst oral corticosteroids per year
6. FEV₁ ≥80% predicted
7. FEV₁/FVC

FEV₁/FVC:
- 5-19 yrs ≥85%
- 20-39 yrs ≥80%
- 40-59 yrs ≥75%
- 60-80 yrs ≥70%

YES

Step up therapy. Reassess in 2-6 weeks. Continue to step up until well controlled.

NO

Consider step down if well controlled for 3 consecutive months. Reassess every 3 to 6 months.

Quick Tips for All Patients with Asthma
- Planned Asthma Visits: Every 1-6 months
- Environmental Control: Identify and avoid exposures such as tobacco smoke, pollens, molds, animal dander, cockroaches, and dust mites (Allergy testing recommended for anyone with persistent asthma who is exposed to perennial indoor allergens)
- Flu Vaccine: Recommend annually
- Spirometry (Not During Exacerbation): At diagnosis and at least every 1-2 years starting at age 5 years
- Asthma Control: Use tools such as ACQ®, ACT™ or ATAQ© to assess asthma control
- Asthma Education: Review correct inhaled medication device technique at every visit
- Asthma Action Plan: At diagnosis; review and update at each visit
- SABA (e.g., inhaled albuterol): 1) for quick relief every 4-6 hours as needed (see step 1), 2) pretreat with 2 puffs for exercise-induced bronchospasm (EIB) 5 minutes before exercise
- Inhaled Corticosteroids (ICS): Preferred therapy for all patients with persistent asthma
- Oral Corticosteroids: Consider burst for acute exacerbation
- Valved Holding Chamber (VHC) or Spacer: Recommend for use with all metered dose inhalers (MDI)
- Mask: Recommend for use with VHCs or spacers and/or nebulizer for age <5 years and anyone unable to use correct mouthpiece technique

Indications for asthma specialist consultation include: Asthma is unresponsive to therapy; asthma is not well controlled within 3-6 months of treatment; life-threatening asthma exacerbation; hospitalization for asthma; required ≥2 bursts oral corticosteroids in 1 year; requires higher level step care (see Stepwise Approach, next page); immunotherapy is being considered.

Produced by the California Asthma Public Health Initiative (CAPHI) in association with CAPHI’s Improving Asthma Control collaborative. Summarized from the NAEPP’s Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma (www.nhlbi.nih.gov/guidelines/asthma/). This summary of NAEPP’s guidelines is designed to assist the clinician in the diagnosis and management of asthma and is not intended to replace the clinician’s judgment or establish a protocol for all patients with a particular condition. Additional copies of the summary and other asthma resources available at www.betterasthmacare.org. Permission to reprint granted if unaltered. Revised: September 2008
# Summary of the NAEPP’s EPR-3: Stepwise Approach for Managing Asthma in Children and Adults

Classifying asthma severity in patients not currently taking long-term control medication is a guide for selection of initial step therapy. Regularly monitoring the level of asthma control is a guide for adjusting therapy.

## Assess Control

**Step up** as indicated and/or address possible poor adherence to medication. Reassess in 2 to 6 weeks.

**Step down** if well controlled for 3 months and reassess in 3-6 months.

*All long-acting beta-agonists (LABAs) and combination agents containing LABAs have a black box warning.*

### Intermittent Asthma

**(All ages)**

**Preferred:**
- SABA every 4-6 hours prn

If used more than 2 days per week (other than for EIB) consider inadequate control and the need to **step up** treatment.

### Persistent Asthma: Daily Medication

**Step 1**

- **Age 0-4 yrs**
  - **Preferred:** Low dose ICS
  - **Alternative:** Cromolyn or Montelukast
  - Consider consulting an asthma specialist

- **Age 5-11 yrs**
  - **Preferred:** Low dose ICS
  - **Alternative:** Cromolyn, LTRA, Nedocromil or Theophylline
  - Consider immunotherapy if patient has allergic asthma
  - Consider consulting an asthma specialist

- **Age ≥12 yrs**
  - **Preferred:** Low dose ICS + LABA
  - **Alternative:** Low dose ICS + either LTRA, Zileuton, or Theophylline
  - Consider immunotherapy if patient has allergic asthma
  - Consider consulting an asthma specialist

**Step 2**

- **Age 0-4 yrs**
  - **Preferred:** Medium dose ICS
  - **Alternative:** Low dose ICS + either LABA or Montelukast
  - Consult an asthma specialist

- **Age 5-11 yrs**
  - **Preferred:** Medium dose ICS + LABA
  - **Alternative:** Medium dose ICS + either LTRA or Theophylline
  - Consider immunotherapy if patient has allergic asthma
  - Consult an asthma specialist

- **Age ≥12 yrs**
  - **Preferred:** Medium dose ICS + LABA
  - **Alternative:** Medium dose ICS + either LTRA, Zileuton, or Theophylline
  - Consider immunotherapy if patient has allergic asthma
  - Consult an asthma specialist

**Step 3**

- **Age 0-4 yrs**
  - **Preferred:** Medium dose ICS
  - **Alternative:** Low dose ICS + either LABA or Montelukast
  -Consult an asthma specialist

- **Age 5-11 yrs**
  - **Preferred:** Medium dose ICS + LABA
  - **Alternative:** Medium dose ICS + either LTRA or Theophylline
  - Consult an asthma specialist

- **Age ≥12 yrs**
  - **Preferred:** Medium dose ICS + LABA
  - **Alternative:** Medium dose ICS + either LTRA or Theophylline
  - Consult an asthma specialist

**Step 4**

- **Age 0-4 yrs**
  - **Preferred:** Medium dose ICS + LABA
  - **Alternative:** Medium dose ICS + either LTRA or Theophylline
  - Consult an asthma specialist

- **Age 5-11 yrs**
  - **Preferred:** High dose ICS + LABA
  - **Alternative:** High dose ICS + either LTRA or Theophylline
  - Consult an asthma specialist

- **Age ≥12 yrs**
  - **Preferred:** High dose ICS + LABA
  - **Alternative:** High dose ICS + either LTRA or Theophylline
  - Consult an asthma specialist

**Step 5**

- **Age 0-4 yrs**
  - **Preferred:** High dose ICS + either LABA or Montelukast
  - **Alternative:** High dose ICS + LTRA or Theophylline
  - Consult an asthma specialist

- **Age 5-11 yrs**
  - **Preferred:** High dose ICS + LABA
  - **Alternative:** High dose ICS + either LTRA or Theophylline
  - Consult an asthma specialist

- **Age ≥12 yrs**
  - **Preferred:** High dose ICS + LABA
  - **Alternative:** High dose ICS + either LTRA or Theophylline
  - Consult an asthma specialist

**Step 6**

- **Age 0-4 yrs**
  - **Preferred:** High dose ICS + LABA
  - **Alternative:** High dose ICS + either LTRA or Theophylline
  - Consult an asthma specialist

- **Age 5-11 yrs**
  - **Preferred:** High dose ICS + LABA
  - **Alternative:** High dose ICS + either LTRA or Theophylline
  - Consult an asthma specialist

- **Age ≥12 yrs**
  - **Preferred:** High dose ICS + LABA
  - **Alternative:** High dose ICS + either LTRA or Theophylline
  - Consult an asthma specialist

## Revised: September 2008