Summary of NAEPP's EPR-3: Recommended Medications for Asthma*

Quick-Relief Medications for Children Ages 5-11	
Short-Acting Beta$_2$-Agonist (SABA)	
Albuterol MDI 90 mcg/puff	2 Puffs every 4-6 hours, as needed for symptoms; 2 puffs 5 minutes before exercise
Levalbuterol HFA 45 mcg/puff	2 Puffs every 4-6 hours, as needed for symptoms; 2 puffs 5 minutes before exercise
Nebulizer Solutions	
Albuterol 0.63 mg/3ml, 1.25 mg/3ml, 2.5 mg/3 ml, 5 mg/ml (0.5%)	1.25-5 mg in 3 cc of saline every 4-8 hours as needed
Levalbuterol 0.31 mg/3ml, 0.63 mg/3ml, 1.25 mg/0.5ml, 1.25 mg/3ml	0.31-0.63 mg in 3 cc saline every 8 hours as needed
Systemic Corticosteroids	
Methylprednisolone 2, 4, 6, 8, 16, 32 mg tablets	Short course "burst"; 1-2 mg/kg/day; maximum 60 mg/day, for 3-10 days
Prednisolone 5 mg tablets, 5 mg/5 cc, 15 mg/5 cc	
Prednisone 1, 2.5, 5, 10, 20, 50 mg tablets; 5 mg/cc, 5 mg/5 cc	
Repository Injection (Methylprednisolone acetate) 40, 80 mg/ml	240 mg/IM once
FOR ASTHMA EXACERBATONS	
Short-Acting Beta$_2$-Agonist (SABA)	
Albuterol MDI 90 mcg/puff	4-8 puffs every 20 minutes for 3 doses, then every 1-4 hours as needed.
Levalbuterol MDI 45 mcg/puff	4-8 puffs every 20 minutes for 3 doses, then every 1-4 hours as needed.
Nebulizer Solutions	
Albuterol 0.63mg/3ml, 1.25 mg/3ml, 2.5 mg/3ml, 5 mg/ml (0.5%)	0.15 mg/kg (minimum dose 2.5 mg) every 20 minutes for 3 doses then 0.15-0.3 mg/kg up to 10 mg every 1-4 hours as needed, or 0.5 mg/kg/hour by continuous nebulization
Levalbuterol 0.31mg/3ml, 0.63mg/3ml, 1.25mg/0.5ml, 1.25mg/3ml	0.075 mg/kg (minimum dose 1.25 mg) every 20 minutes for 3 doses, then 0.075-0.15 mg/kg up to 5 mg every 1-4 hours as needed.
Anticholinergics	
Ipratropium Bromide MDI 18 mcg/puff	4-8 puffs every 20 minutes as needed for up to 3 hours.

KEY: MDI-metered-dose inhaler; HFA-hydrofluroalkane; VHC-valved holding chamber; IM-intramuscular

NOTE: Dosages are provided for those products that have been approved by the U.S. Food and Drug Administration or have sufficient clinical trial safety and efficacy data in the appropriate age ranges to support their use. Check availability and health plan formulary when applicable.

The above list is not all inclusive. Check availability and health plan formulary when applicable.

*** See EPR-3 Full Report for full discussion. See reverse side for therapeutic issues.**

Produced by the California Asthma Public Health Initiative (CAPHI). Summarized from the NAEPP EPR-3: www.nhlbi.nih.gov/guidelines/asthma. This summary of NAEPP's recommended stepwise medications for asthma 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 this summary and other asthma resources available at www.betterasthmacare.org. Permission to reprint granted if unaltered. **April 2010**

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Quick-Relief Medications for Children Ages 5-11

General Therapeutic Issues:

- The most important determinant of appropriate dosing is the clinician's judgment of the patient's response to therapy. The clinician must monitor the patient's response on several clinical parameters and adjust the dose accordingly. The stepwise approach to therapy emphasizes that once control of asthma is achieved, the dose of medication should be carefully titrated to the minimum dose required to maintain control, thus reducing the potential for adverse effect.
- Metered-dose inhaler (MDI) dosages are expressed as the actuator dose (the amount of the drug leaving the actuator and delivered to the patient), which is the labeling required in the United States. This is different from the dosage expressed as the valve dose (the amount of drug leaving the valve, not all of which is available to the patient), which is used in many European countries and in some scientific literature. Dry powder inhaler (DPI) doses are expressed as the amount of drug in the inhaler following activation.
- Some doses may be outside the package labeling, especially in the high-dose range.
- Use of spacer/holding chamber is recommended with the use of an MDI.

Applies to all four SABA's:

- An increasing use or lack of expected effect indicates diminished control of asthma.
- Not recommended for long-term daily treatment. Regular use exceeding 2 days/week for symptom control (not prevention of EIB) indicates the need to step up therapy.
- Differences in potency exist, but all products are essentially comparable on a per puff basis.
- May double usual dose for mild exacerbations.
- Should prime the inhaler by releasing 4 actuations prior to use.
- Periodically clean HFA activator, as drug may block/plug orifice.

Applies to the Systemic Corticosteroids:

- For long-term treatment of severe persistent asthma, administer single dose in a.m. either daily or on alternate days (alternate-day therapy may produce less adrenal suppression). Short courses or "bursts" are effective for establishing control when initiating therapy or during a period of gradual deterioration.
- There is no evidence that tapering following improvement prevents relapse.
- Patients receiving the lower dose (1mg/kg/day) experience fewer behavioral side effects (Kayani and Shannon 2002), and it appears to be equally efficacious (Rachelefsky 2003).
- For patients unable to tolerate the liquid preparations, dexamethasone syrup at 0.4 mg/kg/day may be an alternative. Studies are limited, however, and the longer duration of activity increases the risk of adrenal suppression (Hendeles 2003).

Applies to Systemic Corticosteroid Repository Injection:

- May be used in place of a short burst of oral steroids in patients who are vomiting or if adherence is a problem.

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