Randall Children's Hospital

Co-Management and Referral Guidelines
Early Diagnosis of Asthma/Early Childhood Wheeze
Randall Children's Pulmonology

Phone: **503-413-2050**
Fax: **503-413-2026**

Introduction

Asthma remains the most common chronic disease in childhood.

- At least half of all children with asthma begin having symptoms before 2 years of age.
- These symptoms can be severe and, if untreated, result in unnecessary hospitalizations and emergency visits.

Evaluation and Management

- The asthma predictive index (API) is a reliable way to identify children with a substantially increased risk of asthma. Children are 4–10 times more likely to have asthma if they meet the following criterion:

Asthma Predictive Index	
At least one clinic-diagnosed episode of wheezing	
AND	
Three or more other wheezing episodes	
AND	
Either:	
One Major Criteria	**Two Minor Criteria**
Parent with asthma	Wheezing unrelated to infection
Atopic dermatitis	Food sensitivity
Aero-allergen sensitivity	> 4 percent Eosinophils

- Strong consideration should be given to starting these children on a trial of therapy with low-dose inhaled steroids (such as fluticasone 44 mcg, 2 puffs twice daily, or beclomethasone dipropionate hfa 40 mcg, 2 puffs twice a day, preferred by some insurers) for 3–6 months with careful measurement of linear growth before and during this time. An asthma action plan should be provided including instructions for how and when to use rescue bronchodilators.
- Features that suggest a cause of wheeze other than asthma include failure to respond to well-administered bronchodilators, noisy or labored breathing in between episodes of cough/wheeze, breathing difficulty when swallowing, foreign body aspiration history, etc.

When to refer

Many families are reassured by a specialist evaluation prior to initiating inhaled steroid therapy for their child. We are happy to see these children, as well as any child where the suspicion of asthma is strong (such as chronic cough), or if there is any concern that the child has a wheezing disorder other than asthma.

(continued)

Referral process

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For urgent referrals, call Legacy One Call Consult & Transfer: 1-800-500-9111 to speak to the on-call pediatric pulmonologist.

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Additional Resources

Sample asthma action plan:
http://www.nhlbi.nih.gov/health/resources/lung/asthma-action-plan.htm

Pedersen S.E., Hurd S.S., Lemanske R.F. Jr., et al. Global Initiative for Asthma, Global strategy for the diagnosis and management of asthma in children 5 years and younger. *Pediatric Pulmonology*. 2011 Jan;46(1):1–17. doi: 10.1002/ppul.21321. Epub 2010 Oct 20.
http://www.ncbi.nlm.nih.gov/pubmed/20963782?report=abstract

José A. Castro-Rodríguez, Catharine J. Holberg, Anne L. Wright, et al., A Clinical Index to Define Risk of Asthma in Young Children with Recurrent Wheezing, *American Journal of Respiratory and Critical Care Medicine*, Vol. 162, No. 4 (2000), pp. 1403–1406.
https://www.nescon.medicina.ufmg.br/biblioteca/imagem/0080.pdf

Guilbert T.W., Morgan W.J., Zeiger R.S., et al. Long-term inhaled corticosteroids in preschool children at high risk for asthma. *New England Journal of Medicine*. 2006 May 11;354(19):1985–97.
http://www.ncbi.nlm.nih.gov/pubmed/16687711

Information regarding MDI and nebulizer use in children

Patient education sheets for MDI with spacer use:
https://www.thoracic.org/patients/patient-resources/resources/metered-dose-inhaler-mdi.pdf
http://www.pedsinbrevard.com/wp-content/html/pa/pa_mdaeroch_art.htm

Patient information regarding use of a nebulizer:
http://www.nlm.nih.gov/medlineplus/ency/patientinstructions/000006.htm

Ploin D, Chapuis FR, Stamm D, et al. High-dose albuterol by metered-dose inhaler plus a spacer device versus nebulization in preschool children with recurrent wheezing: a double-blind, randomized equivalence trial. *Pediatrics* 2000;106(2 Pt 1):311–7. ***http://www.ncbi.nlm.nih.gov/pubmed/10920157***

Dolovich MB, Ahrens RC, Hess DR, et al. Device selection and outcomes of aerosol therapy: evidence-based guidelines. *Chest*. 2005; 127(1):335–371. ***http://www.ncbi.nlm.nih.gov/pubmed/15654001***

Castro-Rodriguez, Jose A. Rodrigo, Gustavo J. Beta-agonists through metered-dose inhaler with valved holding chamber versus nebulizer for acute exacerbation of wheezing or asthma in children under 5 years of age: a systematic review with meta-analysis. *Journal of Pediatrics*. 145(2):172–7, 2004 Aug.

Rodriguez, C. Sossa, M. Lozano, J M. Commercial versus home-made spacers in delivering bronchodilator therapy for acute therapy in children. Cochrane Database of Systematic Reviews. (2):CD005536, 2008
http://www.ncbi.nlm.nih.gov/pubmed/18425921

Updated February 2017

Find this and other co-management/referral guidelines online at ***www.legacyhealth.org/randallguidelines***.

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LEGACY EMANUEL