

**Meta-analyses and Systematic Reviews of SLIT for Asthma and Rhinoconjunctivitis**

**Asthma with or without rhinoconjunctivitis**

Author/year	Reviewed Through	Studies (subjects)	Disease Age- range	Allergens	Duration	Results/outcomes (95% C.I)
Calamita 2006 Meta-analysis	2005	25 (1706)	Asthma All ages 10 studies were pediatric only	HDM (8) Pollen (14) Mixture (2) Latex (1)	3 months to 3 years	<ol style="list-style-type: none"> <li>1) Asthma improvement (7 studies): Significant in favor of SLIT, Risk difference -0.27 (-0.33 to -0.21)</li> <li>2) Asthma symptoms (9 studies) SMD -0.38 (-0.79 to 0.03)</li> <li>3) Allergic symptoms including asthma (10 studies). SMD -1.18 (-1.93 to -0.43)</li> <li>4) Symptoms plus medication (7 studies). SMD -0.79 (-1.34 to -0.29)</li> <li>5) Medication (10 studies) SMD -0.82 (-1.25 to -0.39)</li> </ol>
Penagos 2008 Meta-analysis	May 2006	9 (441)	Allergic asthma 3-18 years	HDM (6) Pollens (2)	3-32 months	<ol style="list-style-type: none"> <li>1) Asthma Symptoms SMD -1.14 (-2.10 to -0.18)</li> <li>2) Asthma Medication SMD -1.63 (-2.83 to -0.44)</li> </ol>
Kim 2013 Systematic review	May 2012	18 (1583)	Asthma and rhinoconjunctivitis 4-18 years	HDM (9) Grass (4)	6 months to 3 years	<ol style="list-style-type: none"> <li>1) Asthma control (9 studies) Strength of Evidence (SE) high for SLIT</li> <li>2) Rhinitis symptoms (12 studies) S.E. moderate for SLIT</li> <li>3) Conjunctivitis symptoms (5 studies) S.E. moderate for SLIT.</li> <li>4) Medication scores (13 studies) S.E. Moderate for SLIT.</li> </ol>
Li 2013 Systematic review	December 2012	63 (5131)	Asthma or Rhinoconjunctivitis 4 to 74 years	HDM (16) Grass mix (12) Other pollens (22) Molds (2) Dander (1) Multiple (5)	3 months to 5 years	<ol style="list-style-type: none"> <li>1) Asthma control (13 studies) Strength of evidence (S.E.) high for SLIT</li> <li>2) Rhinitis symptoms (36 studies) S.E. moderate for SLIT</li> <li>3) Conjunctivitis symptoms (13 studies) S.E. moderate for SLIT</li> <li>4) Medication scores (41 studies) S. E. moderate for SLIT</li> </ol>
Eifan 2013 Systematic review	December 2012	20 (1217)	Asthma with or without rhinitis 5 to 75 years	HDM only	6 to 36 months	<ol style="list-style-type: none"> <li>1) Asthma symptoms favored SLIT in 12/20 trials.</li> <li>2) Rhinitis symptoms favored SLIT in 10/17 trials</li> <li>3) Medication reduction favored SLIT in 7/17 trials</li> <li>4) The primary outcome favored SLIT in 14/20 trials.</li> </ol>

### Rhinoconjunctivitis

Radulovic 2011 Meta-analysis	August 2009	49 (4589)	Allergic rhinitis with or without rhinoconjunctivitis and asthma. Adults and Children	Grass (23) Other pollen (25) HDM (8) Dander (1)	< 6 months to > 1 year	1) Symptoms SMD -0.49 (-0.64 to -0.34) favoring SLIT 2) Medication: SMD -0.32 (-0.43 to -0.21) favoring SLIT
Calderon 2011 Meta-analysis	January 2010	42 (3958)	Allergic conjunctivitis Adults and children	Grass (19) Trees (10) HDM (6) Weeds (6) Dander (1)	3 to 36 months	1) Total ocular symptoms (36 studies) SMD -0.41 (-0.53 to -0.28) Adults SMD -0.48 (-0.63 to -0.32) Children SMD -0.27 (-0.46 to -0.07)
Dretzke 2013 meta-analysis	April 2011	5 studies added to Radulovic 2011	Seasonal allergic rhinitis Adults and Children	Not given	Not given	1) Symptoms scores SMD -.33 (-0.42 to - 0.25) favored SLIT 2) Medication scores SMD -0.27 (-0.37 to - 0.17) favored SLIT

### References:

1. Calamita Z, Saconato H, Pela' AB, Atallah AN. Efficacy of sublingual immunotherapy in asthma: systematic review of randomized-clinical trials using the Cochrane Collaboration method. *Allergy* 2006;61:1162-1172.
2. Penagos M, Passalacqua G, Compalati E, Baena-Cagnani CE, Orozco S, Pedroza A, Canonica GW. Metaanalysis of the efficacy of sublingual immunotherapy in the treatment of allergic asthma in pediatric patients, 3 to 18 years of age. *Chest* 2008;133;
3. Kim JM, Lin SY, Suarez-Cuervo C, Chelladurai Y, Ramanathan M, Segal JB, Erekosima N. Allergen-specific immunotherapy for pediatric asthma and rhinoconjunctivitis: A systematic review. *Pediatrics* 2013;131:1155-1167
4. Lin SY, Erekosima N, Kim JM, Ramanathan M, Suarez-Cuervo C, Chelladurai Y, et al. Sublingual immunotherapy for the treatment of allergic rhinoconjunctivitis and asthma: A systematic review. *JAMA* 2013;309:1278-1288.
5. Eifan AO, Calderon MA, Durham SR. Allergen immunotherapy for house dust mite: clinical efficacy and immunological mechanisms in allergic rhinitis and asthma. *Expert Opin Biol Ther* 2013;13:1543-1556.
6. Radulovic S, Wilson D, Calderon M, Durham S. Systematic reviews of sublingual immunotherapy (SLIT) *Allergy* 2011;66:740-752.
7. Calderon MA, Penagos M, Sheikh A, Canonica GW, Durham sR. Sublingual immunotherapy for allergic conjunctivitis: Cochrane systematic review and meta-analysis. *Clin Exp Allergy* 2011;41:1263-1272.
8. Dretzke J, Meadows A, Novielli N, Huissoon A, Fry-Smith A, Meads C. Subcutaneous and sublingual immunotherapy for seasonal allergic rhinitis: a systematic review and indirect comparison. *J Allergy Clin Immunol* 2013;131:1361-1366.