# Risk Factors for Testing or Immunotherapy

The American Academy of Otolaryngic Allergy (AAOA) recognizes the importance of allergy skin testing and immunotherapy in the clinical practice of allergy. Although felt to be a safe practice in most patients, certain populations need to be given special consideration as they have been identified as being at a higher risk for complications during skin testing and immunotherapy. This is not intended to be an all-inclusive list.

## Pregnancy

Allergy immunotherapy can be continued during pregnancy. Escalation and skin testing should be avoided.

The most recent update on allergen immunotherapy states that allergen immunotherapy can be continued but is usually not initiated in the pregnant patient. Allergen immunotherapy is usually not initiated during pregnancy because of concerns about the potential for systemic reactions and the resulting adverse effects on the mother and fetus. For this reason, if the patient becomes pregnant during escalation and the dose is unlikely to be therapeutic, discontinuation of immunotherapy should be considered.[1]

## Asthma

Asthma should be well controlled prior to undergoing skin testing or before the initiation or continuation of immunotherapy. In asthma patients, consider evaluating lung function prior to administration of immunotherapy.

Immunotherapy is effective in the management of allergic asthma; however, uncontrolled asthma has been repeatedly identified as a high-risk factor for systemic reactions during skin testing and allergen immunotherapy.

The most recent update on allergen immunotherapy states that allergen immunotherapy in asthmatic patients should not be initiated unless the patient's asthma is stable with pharmacotherapy. It is also recommended that allergy injections should be withheld if the patient presents with an acute asthma exacerbation. Before the administration of an allergy injection, the asthmatic patient should be evaluated for the presence of asthma symptoms. One might consider an objective measure of airway function.[1, 2]

## Beta Blockers

The AAOA recognizes that exposure to beta-adrenergic blocking agents is a risk factor for more serious and treatment resistant anaphylaxis, making the use of beta blockers a relative contraindication to inhalant skin testing and immunotherapy.

The balance of possible risks and benefits is not the same for patients with the potential for life-threatening stinging insect reactions, who are also taking a beta-blocker. In these patients, the benefits of venom immunotherapy may outweigh any risk associated with concomitant beta-adrenergic blocker administration. The individualized risks/benefits of immunotherapy should be carefully considered in these patients.

Beta blockade can enhance mediator stimulus in the setting of IgE-mediated anaphylactic reactions. Therefore, concomitant treatment with beta-adrenergic blockers may result in more protracted and difficult-to-treat anaphylaxis. Studies investigating patients taking ophthalmic and cardio-selective beta-blockers have found unusually severe anaphylactic reactions and for this reason, the absence of increased risk in this population cannot be assumed.[1, 3, 4, 5, 6]

## Other Risk Factors

Other predictors of allergic reactions include prior allergic reactions, immunotherapy escalation, first treatment vial, and technical (dosing/wrong vial) error.[7, 8]


1 Cox L, Nelson H, Lockey, R. Allergen immunotherapy: a practice parameter third update. *J Allergy Clin Immunol* 2011; 127(suppl): S1-55

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3 Hepner MJ, et al. Risk of systemic reactions in patients taking beta-blocker drugs receiving allergen immunotherapy injections. *J Allergy CLin Immunol* 1990; 86:407

4 Lang DM. Do beta-blockers really enhance the risk of anaphylaxis during immunotherapy? *Curr Allerg Asthma Rep* 2008; 8:37

5 Odeh M, Oliven A, Bassan H. Timolol eyedrop-induced fatal bronchospasm in an asthmatic patient. *J Fam Pract* 1991; 32:97-8, NR

6 Lieberman P, et al. The diagnosis and management of anaphylaxis practice parameter: 2010 Update. *J Allergy Clin Immunol* 2010;126(3): 477-523

7 Roy SR. et al. Increased frequency of large local reactions among systemic reactors during subcutaneous allergen immunotherapy. *Ann Allergy Asthma Immunol* 2007; 99:82.

8 Bernstein DI, et al. Twelve-year survey of fatal reactions to allergen injections and skin testing: 1990-2001. *J Allergy Clin Immunol* 2004; 113:1129