# In Vitro

The American Academy of Otolaryngic Allergy (AAOA) supports the use of in vitro testing as a diagnostic option.

Similar to skin testing techniques, in vitro testing aims to confirm the suspicion of IgE–mediated disease by confirming the presence of allergen–specific IgE in the allergic patient. Serologic evaluations for allergic disease include RAST, mRAST, CAP, and more recently molecular allergy/component testing. In Vitro testing is especially helpful in patients who are not candidates for skin prick testing (SPT).[1]

In vitro testing can be considered an alternate to skin prick testing. Compared to skin prick testing, in vitro testing correlation varies with individual antigens and ranges from less than 50% to greater than 90%. Negative in vitro test results; however, need to be correlated clinically as negative results may not exclude clinical disease.[1] In some situations, skin prick testing is not as accurate as in vitro testing.[2]

The American Academy of Otolaryngic Allergy recommends the use of in vitro testing in the following subsets of patients.

- Severe or poorly controlled asthmatics
- Reactions, severe to anaphylactic, to food or venom
- Widespread dermatologic conditions
- Uncooperative patient
- Use of (or unable to discontinue) medications that may mask the cutaneous response or may make anaphylaxis more difficult to treat.

Molecular allergy/component-resolved testing includes single molecular allergen/component testing, allergen specific panels covering a single allergen, or micro-array semi-quantitative testing panels.

Molecular allergy technology still requires more extensive FDA review before it can become integrated to current allergy practice standards. Its ability to distinguish true sensitization from cross–reactive sensitization in poly–sensitized patients, to better determine the risk of systemic reaction in food allergy, and to improve the indications for immunotherapy in specific clinical contexts will position its use relative to conventional serologic specific IgE testing.[3]

The American Academy of Otolaryngic Allergy recommends further consideration of molecular allergy as an additional diagnostic means in allergy diagnosis.[3]

1 Bernstein, L. et al. *Allergy Diagnostic Testing: An updated practice parameter.* Annals of Allergy, Asthma, and Immunology March 2008; 100:S44.

2 Gabriele De Bos, MD, et al. *Discordance Between Aero Allergen Specific Serum IgE and Skin Testing in Children Younger Than Four years.* Ann Allergy, Asthma, Immunol 110 (2013) 438-435.

3 Canonica, WG, A WAO–ARIA–*GA²LEN consensus document on molecular–based allergy diagnostics,* World Allergy Organization Journal 2013, 6:17–**http://www.waojournal.org/content/6/1/17**

*Note: American Academy of Otolaryngic Allergy's (AAOA) Clinical Care Statements attempt to assist otolaryngic allergists by sharing summaries of recommended therapies and practices from current medical literature. They do not attempt to define a quality of care for legal malpractice proceedings. They should not be taken as recommending for or against a particular company's products. The Statements are not meant for patients to use in treating themselves or making decisions about their care. Advances constantly occur in medicine, and some advances will doubtless occur faster than these Statements can be updated. Otolaryngic allergists will want to keep abreast of the most recent medical literature in deciding the best course for treating their patients.*



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