

Immunotherapy: Achieving efficacious dosing.
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The current updated Practice Parameter on Immunotherapy has set dosing ranges for most allergen extracts. These ranges can be met if some basic guidelines are followed in regards to skin testing, cross reactivity, and utilizing strongest concentrates available for stock solutions.

Table X₁

Antigen	Labeled potency or concentration	Probable effective dose range
Dust mites: <i>D farinae</i> and <i>D pteronyssinus</i>	3,000, 5,000, 10,000, and 30,000 AU/mL	500-2,000 AU
Cat	5,000-10,000 BAU/mL	1,000-4,000 BAU
Grass, standardized	10,000-100,000 BAU/mL	1,000-4,000 BAU
Short ragweed	1:10 to 1:20 wt/vol 100,000 AU/mL	6-12 mg Amb a 1 1,000-4,000 AU Concentration of Amb a 1 is on the label of wt/vol extracts in FDA units
Non standardized extract dog	1:10 to 1:100 wt/vol	15 mg of Can f 1
Nonstandardized extracts	1:10 to 1:40 wt/vol or 10,000-40,000 PNU/mL	Highest tolerated dose.

These dosing levels may seem daunting to many practitioners who are accustomed to having numerous allergens in a patient therapy vial. Based on skin testing results, many patients are poly sensitized versus mono sensitized and achieving dosing levels alluded to in the current practice parameters becomes a challenging undertaking.

Historically, therapy consisted of allergens a patient tested positive to and were symptomatic. Depending on the skin test results, this could be numerous allergens. Recently published studies have shown an excellent correlation between high doses of allergen extracts and symptom improvement.² In order to achieve doses deemed therapeutically effective, patient formulations should be prepared using fewer allergens and with the strongest concentrates available.

A previous article on skin testing alluded to the importance of using both proper strength extracts and testing devices to improve overall skin testing capabilities to provide a more accurate diagnosis to the allergens necessary for therapy.³ Doing so aides in defining and reducing the allergens necessary to provide efficacious dosing.

Utilizing cross reactivity can also help the clinician prepare a patient's therapy vial by using fewer allergens than the patient is apparently allergic. An example of this is using short ragweed to cover numerous ragweed species. Ragweed species have been found to be highly cross reactive and an excellent article explaining cross reactivity was recently published.⁴

Achieving efficacious dose levels suggested in the immunotherapy practice parameters can be accomplished by using accurate skin test data, cross reactivity models and the strongest allergenic concentrates. Following these guidelines to better therapeutic dosing can lead to alleviation of symptoms and improved quality of care.

A recent letter to JCAAI members raises the issue of standards of care. "Sheehan, according to the BNA, will look to information from hospital's reporting quality data to receive annual payment updates, information from the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), state reporting, mandated reporting of errors and near misses, mandated apologies required by some state laws, quality improvement organizations, P4P contracts in the private sector and whistle-blowers. Based upon this kind of information, we believe it would be prudent for allergists to be familiar with allergy's evidence-based practice parameters."

"While compliance with the parameters is not mandated, perhaps a note in the patient's chart recognizing the existence of a clinical situation which could be covered by a practice guideline, but, which in the opinion of the physician, does not call for the specific treatment recommended by the guideline, would be a good idea. It would also be a good idea to note the patient's understanding of this approach. As we have said many times, our practice parameters are not mandates but rather guidelines which you need to use appropriately for the appropriate patients. JCAAI's only recommendation is that you document reasons for a course of treatment outside the guidelines and the patient's understanding of these reasons. Actions like this will be very effective in preventing claims that you provided sub-standard care."⁵

In conclusion, diligence in interpreting patient skin test results and following basic rules of cross reactivity can assist the practitioner in selecting the allergens most relevant for therapy. Utilizing the strongest concentrates available and keeping the number of allergens in the final patient vial to a minimum helps achieve dosing levels recommended in the current practice parameters.

1. American Academy Allergy, Asthma, Immunology, American College Allergy, Asthma, Immunology. Allergen immunotherapy: A practice parameter second update. J. Allergy Clin Immunol, September 2007 Sup, pg S55
2. Nanda A, O'Connor M, Anand M, Dreskin S, Nelson HS. Dose dependence and time course of the immunological response to administration of standardized cat allergen extract. J Allergy Clin Immunol 2004;114:1339-44
3. Garner LM. Increasing diagnostic skin testing capabilities: controlling the variables and improving the overall results. AAAAI, Allied health section, articles of interest 2007.
4. Weber RW. Cross-reactivity of pollen allergens: impact on allergen immunotherapy. Ann Allergy Asthma Immuno. 2007;99:203-212
5. Letter to membership, New Kind of Legal Risk. JCAAI, Nov 2007