



Efficacy of immunotherapy depends on reaching and maintaining an optimal dose of immunotherapy in a safe and efficacious manner. The goal of optimal therapy is to affect and maintain an immunologic response to reduce allergy reactivity. The starting dose, as determined by quantitative testing, should be used to begin immunotherapy, but the optimal dose for maintenance therapy would be 5-20 mcg per dose, which is about 1000-2000 BAU per injection and 1000-4000 in more recent practice guidelines.¹ However clinically, the patient may note improvement of symptoms at a “symptom-relieving dose” which may be much lower than the effective dose necessary to achieve a long-term clinical benefit. Patients should still be advanced to the maximal tolerated dose or effective dose to obtain clinical immunologic response and overall symptom reduction.

Clinically, all patients may not tolerate dosages at that range and should still be escalated to the highest-tolerated dose. Dosages at this level are more likely to provide immunologic response without significant adverse reaction to obtain appropriate clinical results.

The efficacy of immunotherapy depends on achieving an optimal therapeutic dose of each of the constituents in the allergen immunotherapy extract.

The maintenance dose of allergen immunotherapy must be adequate. Low maintenance doses are generally not effective (eg, dilutions of 1:1,000,000, 1:100,000, and 1:10,000 vol/vol). A consideration when mixing extract is the need to deliver an optimal therapeutically effective dose of each of the constituents in the allergen immunotherapy extract. Failures to do so will reduce the efficacy of immunotherapy. This might occur because of a dilution effect; that is, as one mixes multiple extracts, the concentration of each in the final mixture will be decreased.

The maintenance concentrate should be formulated to deliver a dose considered to be therapeutically effective for each of its constituent components. The maintenance concentrate vial is the highest-concentration allergy immunotherapy vial (eg, 1:1 vol/vol vial). The projected effective dose is called the maintenance goal. Some subjects unable to tolerate the projected effective dose will experience clinical benefits at a lower dose. The maintenance dose is the dose that provides therapeutic efficacy without significant adverse local or systemic reactions and might not always reach the initially calculated projected effective dose. This reinforces that allergy immunotherapy must be individualized.

¹ Cox L, *Allergen Immunotherapy: A practice parameter third update*. AAAAI task force report; *J Allergy Clin Immunology*, Vol 127, number 1: S1-S55

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.