



# ALLERGY UPDATE

## ALLERGY & ASTHMA ASSOCIATES

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## 100 YEARS OF ALLERGY SHOTS

The year 2011 marks the 100th anniversary of the first reported use of allergy shots to rid patients of troublesome environmental allergy symptoms.

In 1911 English physicians Leonard Noon and Richard Freeman published a report in the medical journal *Lancet* discussing injecting patients who had grass pollen allergies with dilute solutions of grass extracts. After the shots, these patients had fewer springtime nasal symptoms.

Drs. Noon and Freeman patterned their approach on new animal and human research in the early 1900's regarding toxins and the development of antitoxins.

One hundred years later, allergy shots—also called allergen immunotherapy or vaccinations—remain the only treatment available which “cures” allergies over time. Allergy shots reduce patient sensitivity to allergic substances (allergens) so that patients experience less sneezing, congestion, runny noses and dripping down their throats.

In controlled research studies, allergy shots have proven effective for combating allergies to tree, grass and weed pollens; dust mites; mold spores; cat, dog, and other small animal dander; and insect venoms such as those from bees, wasps, and fire ants. They are not effective for food allergies and chemical sensitivities, although there is ongoing research to allow such treatment.

Allergy shots induce immunological tolerance to allergens. This occurs by producing blocking antibodies as well as molecules which skew the immune system away from an allergenic antibody response (TH2) to a cellular immune response (TH1) to foreign substances. After a brief initial increase, harmful allergic antibodies (IgE) are reduced by shot treatment.

Patients with proven IgE-mediated allergies, which are demonstrated by positive skin or blood tests, are candidates for allergy shots. Patients who do not respond to or cannot tolerate medications often need allergy shots, as do those with severe allergies. Recent studies have shown that young people with nasal allergies were less likely to develop asthma if they received allergy shots.

At the beginning, allergy shots are administered once or twice weekly, starting with very dilute mixtures to which the patient is sensitive. One or two injections into the arm using a tiny needle are given; this procedure is almost painless because the needles are so thin. With each shot greater volumes are given at increasing concentrations of the mixture until it reaches its highest concentration, or maintenance level.

After this point, the shot frequency is reduced to every other week and, eventually, to just monthly. The average duration of shots is four to five years, although some highly sensitive patients need to continue monthly on a long-term basis.

It can take four to six months for patients to begin to notice improvement. Although the process is slow, the tolerance induced by shots lasts for years after completion

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The physicians of Allergy & Asthma Associates are all Board-Certified.

(from left): David Chudwin, M.D., Irma Oliff, M.D., J.K. Lawson M.D., Kathy Sonenthal, M.D. and Salmon Goldberg, M.D.

## TESTING FOR FOOD ALLERGIES

Detecting food allergies is important for several reasons. More than 100 people in the U.S. die annually from several allergic reactions (anaphylaxis) related to foods, most commonly peanuts, nuts, fish or shellfish. Food tests help identify the causes of such severe reactions.

Second, while about one-third of people think they have a food allergy, research shows that true food allergies caused by allergic antibodies (IgE) occur in only about two percent of adults and four percent of children. Allergy testing helps distinguish between true food allergies and food intolerance—such as lactose or gluten sensitivity.

Finally, food testing can detect hidden food allergies, which can affect behavior, mood, headaches, gastrointestinal symptoms, eczema and fatigue.

Several methods for testing food allergies are available; each has its own advantages and disadvantages.

For years, scratch tests have been used on the skin to look for IgE-mediated food reactions. A drop of a dilute solution of the food is pricked into the top layer of skin using a plastic prong. If the patient is allergic to the food, an itchy, red wheal usually develops within 20 minutes.

### INSURANCE PROBLEMS?

Our practice accepts most insurance plans. However, if you have lost your insurance, have no insurance, or have a very high-deductible policy, we will consider treating patients on a reduced-cost basis. Call one of our offices, preferably the one in your area, for more information.

**We accept most health insurance plans, including many PPOs, and are Medicare participants.**

The advantages of scratch tests include that many foods can be tested at once, the test is relatively inexpensive and easy to perform, and the results are available within minutes. The negative predictive value of scratch tests is extremely high. If a person has a negative scratch test to a particular food, there is a more than 95 percent chance no symptoms will appear when the person ingests the food.

However, there are also some disadvantages to food scratch tests. A patient needs to be off anti-histamine medications in order to be tested, which can be a problem for itchy patients with eczema or hives. In addition, false positive reactions are possible with skin tests, which are only weakly positive. Thus, one can have a small 1+ reaction to a food and be able to eat it without any problems; these weakly positive foods should be avoided only if they precipitate symptoms. Finally, patients should not receive skin tests for foods to which they experienced a known anaphylactic reaction because scratch tests, on rare occasions, can precipitate a systemic allergic reaction in highly sensitive individuals.

A blood test, called RAST, is a second method for determining IgE-mediated food allergies. The advantages of the RAST test are that it can be done in highly allergic patients with no risk of reaction, anti-histamines do not need to be stopped, and the test can be done for certain foods for which scratch test materials are not readily available.

Among the disadvantages of RAST tests are that they are more expensive than scratch tests to perform so fewer foods can be screened, and they are less sensitive than skin testing, yielding more false negative results. This means that

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## FOOD ALLERGIES

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patients with a negative RAST test may still present a positive scratch test.

The final method of food testing is one of several available types of food challenges. One type, open food challenges, take place when a patient eats a particular food, noting any reactions, such as nausea, bloating, diarrhea, heartburn, hives, eczema, or itching. Sometimes this is performed after an elimination diet in which certain foods are avoided and then added back one by one.

Blind challenges frequently are used for research studies. Blind food challenges involve providing patients with a food not known to them. Foods may be masked in gelatin capsules or in liquids such as juices. Then the person is observed for symptoms.

It is more difficult to test for food intolerances. A blood test is available to check for celiac disease caused by intolerance to gluten, a protein found in grains such as

wheat, barley, and rye. When lactose intolerance is suspected, patients can try lactose-free milk (e.g. Lactaid 100 or Dean's Easy 2%) to observe if the symptoms improve. Elimination diets are used for people who may be sensitive to yeast and molds, food dyes, or preservatives.

Highly allergic individuals should carry an adrenaline self-injector – such as an Epi-pen or Twin-ject.

### CALL NOW FOR MORE INFORMATION OR APPOINTMENT

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## ORAL ALLERGY SYNDROME

One common symptom of food allergy is itching of the mouth and throat. In some patients, these symptoms can be the first signs of a severe allergic reaction. They can go on to develop hives, itching, diarrhea and cramping, wheezing, and swelling of the tongue and throat. These severe reactions can lead to anaphylactic shock if not treated with epinephrine (adrenaline) and anti-histamines.

However, there is another form of food hypersensitivity which consists only of itching of the lips and throat and does not progress to any of the other symptoms of anaphylactic reactions. This is called Oral Allergy Syndrome. OAS is caused by cross-reactivity between pollen allergens and certain foods. It can occur without prior exposure or sensitization to the food because of the pre-existing pollen allergy.

Symptoms of OAS include burning, itching, swelling and redness of the lips, tongue and throat.

Patients who are allergic to tree pollens can have OAS after eating certain fruits. For example, birch tree pollen sensitivity is associated with OAS due to cherry, pear, and apple. A small number of birch sensitive patients also get symptoms after kiwi, potato, carrot and hazelnut.

Some patients with OAS can eat cooked foods without any symptoms while they do react to raw foods. This happens sometimes with carrots (raw versus cooked carrots) and apples (uncooked apples versus apple pie), among others.

Patients with ragweed sensitivity can react with OAS symptoms when they eat bananas or melons. This is due to cross-reactivity between ragweed allergens and these particular foods.

Less commonly, sensitivity to celery, carrot, fennel and parsley can occur in patients who are allergic to mugwort.

Patients with OAS should generally avoid the foods which cause their symptoms but can be reassured that their symptoms are not the prelude to anaphylactic reactions.

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and in many people for the rest of their lives. Skin testing is repeated every two to three years to guide the decision of how long to continue.

Adverse reactions to shots can include redness, itching and swelling at the site of the injection. Very rarely patients have systemic reactions with flushing, hives, wheezing, and shortness of breath, stomach upset, or low blood pressure. Because of this, staff asks patients to stay in the office for 20 to 30 minutes after their injection. The more severe reactions are most likely to erupt during this timeframe.

While some small risks do exist, allergy shots are a highly effective treatment. We see an 80 to 90 percent success rate with properly selected patients.

Over the last 100 years allergy shots have become an established treatment. By using these vaccinations to establish tolerance to allergens, our body's own immune system fights allergic illness.