

# ALLERGY EVALUATION AND MANAGEMENT

Allergy is when the immune system is hypersensitive to certain substances (allergens). A reaction is triggered when upon inhalation, ingestion, injection, or general contact with certain allergens. Our immune system predictably reacts in two ways to explain symptoms of allergic disease: IgE- mediated and non-Ig-E mediated.

**Ig-E Mediated Allergy:** Individuals who develop sensitivity to certain allergens develop allergy-type antibodies (IgE). The intensity of the allergic reaction is directly proportional to the level of antibodies in the blood. When one is exposed to the allergen, it binds to the Ig-E and a cascade of events follows including the release of histamine in the blood and tissues. Symptoms shortly follow such as sneezing, watery eyes, nasal congestion and drainage, possibly headaches and gastrointestinal and/or skin reactions as well. The most severe form of this type of allergy is anaphylaxis which can be life threatening.

**Non-Ig-E Mediated Allergy:** Other things in the environment can cause allergic responses that do not depend on Ig-E. These include smoke, chemicals, cold moist weather, psychological and/or physical stress, and occupational allergies. Symptoms can mimic the more serious type, but medications poorly treat the non-Ig-E mediated type.

In order to diagnose the exact cause of symptoms thorough evaluation is required. The evaluation involves obtaining a medical history, an ear, nose, and throat exam, possibly sinus CT scans, and usually allergy testing. Allergy testing is done via skin tests and/or blood tests.

## Allergy Treatment

Contemporary allergy management includes three methods: medication therapy (antihistamines, nasal sprays, etc.), avoidance therapy (limiting your exposure to what you are allergic), and desensitizing immunotherapy or IT (also known as: allergy injections).

With regards to immunotherapy (IT), it is available in two forms of administration: injections subcutaneously in a physician's office weekly OR orally (sublingual) at home twice a week. The medical literature is inconsistent as to which method is superior. Not all patients are candidates for home therapy nor do all patients improve with home therapy. Your doctor will discuss the options, benefits, and risks with you.

# Allergy Testing

**Skin Prick Testing:** The preferred screening method for allergies involves creating several pricks in the skin along with a droplet of various allergens that are commonly found in this area. The tests are read after 20 minutes. If one screens positive, additional quantitative testing is necessary as below.

**Intradermal Dilutional Testing (IDT):** IDT is a particular technique of skin testing that is very sensitive and specific for allergy. It is more labor intensive and time consuming than prick testing. Very small amounts of allergen (extracts from pollens, dust, mold, etc.) are injected under the skin of the upper arm. There will be up to 30 different allergens tested. It is not a particularly painful test, but if you are apprehensive about the injections, we can prescribe an anesthetic cream to apply to your arm an hour prior to testing. The testing takes approximately 3 hours. Not everyone is a candidate for skin testing. Individuals younger than 10 years of age, individuals taking Beta blocker medications, and those with certain skin conditions are not eligible for the tests. Also, those with brittle or uncontrolled asthma should consider alternative methods of testing.

**Modified RAST (mRAST):** mRAST testing can be performed on your blood. The test measures the amount of Ig-E specific to each allergen. It is not a perfect test. In fact, many people with significant allergy symptoms can have low to normal values noted on the test. Confirmatory skin testing may still be necessary. To perform mRAST we simply draw a blood sample in the office and send it to a lab for analysis. It takes about 2-3 weeks to get the results back.

## **Allergy Skin Testing (Intradermal and Skin Prick Testing)**

Allergy skin testing is a battery of skin prick and intradermal skin tests performed in the office. A sample of a test antigen is pricked into or injected just under the skin to form a wheal. A positive reaction is similar to a mosquito bite, with itching and swelling. The test is used to identify whether an individual is sensitive (allergic) to specific antigens such as pollen, mold, dust mites, animals, etc. The degree of reactivity will determine the treatment recommended which may involve avoidance measures to decrease exposure of known allergens, prescription medication to decrease the body's responsiveness during exposures, and/or desensitizing immunotherapy over the course of 3 or more years.

Severe reactions are uncommon but skin testing does carry some degree of risk. Experienced staff performs the test under a physician's supervision. Generalized reactions may occur such as itching, hives, nasal stuffiness, sneezing, wheezing, and shortness of breath. Extremely rare cases of shock and death have been reported in the medical literature. Emergency medications are always immediately available in the testing area. Rarely, hospitalization is required if a true anaphylactic reaction were to occur. This would initially result in your being transported to St. Thomas Hospital emergency room. This of course would result in additional medical costs incurred by you and your insurance company according to your policy which you should carefully review before your testing is even scheduled.

You will be asked to sign a consent form stating that you understand the risks of skin end-point titration testing, the reasons you are undergoing the test, and the option of not being tested. This covers understanding and consent to treatment by Nashville ENT and Allergy and its staff in the event a severe reaction were to occur during or after the tests. Lastly, you confirm that are not taking a Beta Blocker medication since it would interfere with life-saving measures should a severe reaction occur. If you have asthma, then you are responsible for bringing your already prescribed inhalers. If you are pregnant, taking a beta blocker, or have taken an anti-histamine in the past seven days, then you understand you should not undergo skin testing at this time.

## **Allergy Drops**

The doctor may advise testing to determine the specific allergen that is causing discomfort. In some cases subcutaneous immunotherapy (allergy shots) or sublingual immunotherapy (allergy drops) may be recommended. Immunotherapy is a method of treating allergies by desensitizing individuals to allergens over time, in many cases with the goal that they be cured of their allergies.

Allergy drops are placed under the tongue at home daily instead of weekly trips back to our office for allergy injections (shots).