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WHAT ARE ALLERGIES

What is an allergy?

An allergy is present when a person's immune system attacks a substance (called an allergen) that most people's immune systems would ignore.

How does it occur?

In classical allergy T-cells respond to an allergen and direct other cells to respond as well. One of these other cell types (called B-cells) produce an antibody called IgE, that then associates with Mast cells that line the respiratory tract (including nose, sinuses and lungs), skin and gastrointestinal tract. Allergies occur when the nose, lungs, ears, sinuses, and/or throat come into contact with allergy-causing substances.

What are allergens?

The allergy-causing substances are called allergens. The most common allergens are pollens, molds, dust, and animal dander. Some allergens like ragweed are present only during certain seasons. Other allergens like dust mite or mold are present year-round. When the lining tissues of the nose and sinuses come into contact with allergens, several chemicals are released from cells in these tissues. Histamine causes the nose lining to swell, itch, and produce mucus. Most allergens are proteins and they trigger allergic reactions when they enter the body or come in contact with body surfaces. At this point they bind to the IgE on Mast cells triggering the release of histamine, leukotrienes and other substances that recruit inflammatory cells like the Eosinophil into sites of allergen exposure. Histamine, leukotrienes and inflammatory cells (Eosinophils) cause most of the symptoms that we associate with allergies. Some allergens are chemicals like penicillin that alter a persons own proteins enough to trigger the immune attack or allergic reaction.

What are the symptoms?

Symptoms from allergies depend on the part of the body exposed and sensitized. Some common symptoms of hay fever are itchy, runny nose, sneezing, nasal and head congestion, fatigue and lethargy, itchy throat, red irritated eyes and/or postnasal drip.

How is it diagnosed?

Your medical history is usually the basis for the diagnosis of allergies. Knowledge of a family history of allergic problems is also helpful. However, it may take some detective work to figure out exactly what you are allergic to. Tests for specific allergies may be performed. The best test is the skin scratch test with intradermals. In these tests, tiny amounts of suspected allergens are placed on or under your skin. These allergy tests can identify which of many possible allergens are causing your symptoms. In some cases blood tests may be done to look for antibodies to suspected allergens.

How is it treated?

Treatment of allergies are based on three important principles

- 1) **Avoidance** - The first principle of allergy treatment is to avoid the allergy-causing substance. Air conditioners and special filters can minimize the amount of pollen and mold that circulates indoors. Try not to use an attic fan if you are allergic to pollen. Putting plastic covers on mattresses may help you avoid dust and mold. Pillows may also be covered.
- 2) **Medications** - When environmental measures such as the ones described above are inadequate to control symptoms, medications are usually effective.
- 3) **Allergy Injections** - If your symptoms are severe in spite of medications, we may consider allergy injections (immunotherapy). Allergy injections will desensitize you to the substances that cause your allergies. A mixture of the allergens identified from your allergy tests is prepared and you will then receive weekly injections of this mixture. Usually after 4 to 6 months of allergy injections do people begin to have relief from their allergies. However, you will probably need to continue the injections for several years.