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Food Allergy Newsletter I

Diagnosis of a Food Allergy is not Easy

A food allergy occurs when a person with particular genetic predisposition produces specific immunoglobulin E (an allergy antibody) to the protein of a certain food. When those antibodies react with a certain food, histamine and other chemicals are released from the body and cause allergic symptoms. Even when you only eat a small amount of allergy-causing food, a reaction can be triggered. Although all foods can cause an allergy, peanuts, tree nuts, eggs, soy, milk, wheat, fish, and shellfish account for ninety percent of all food allergy reactions.

Food allergy reactions can affect several body systems such as the gastrointestinal tract (abdominal pain, diarrhea, nausea, vomiting), skin (hives, eczema), respiratory system (swelling of the throat or mouth, wheezing, difficulty breathing), and the cardiovascular system (drop in blood pressure, feeling of impending doom, loss of consciousness). These symptoms can appear within minutes or up to several hours after a person has eaten the food to which he or she is allergic.

Adverse reactions to foods are either immune-mediated or non-immune-mediated, depending on whether the specific immune system is primarily involved in the cause of the reaction. Not all immune-mediated adverse reactions to foods are due to food allergy. Celiac disease is an autoimmune disease, and eosinophilic esophagitis is not a pure IgE-mediated food allergy. The symptoms of those diseases are quite different from a food allergy. The correct diagnosis must be confirmed through patient history, blood tests, small intestine biopsy, or even genetic testing. A skin test is not very useful.

Reactions to foods that are not related to immune responses are generally considered food intolerance. Types of food intolerance include toxin-induced (poisons), metabolic, pharmacologic, or other undefined reactions. Almost all reactions to food additives are food intolerance and are chemical, not allergic, reactions.

Commonly used food allergy tests are the blood radio allergosorbent test (RAST) and the enzyme-linked immunoabsorbent assay (CAP) as well as skin prick testing. Both the blood tests and skin prick testing determine the presence of a specific IgE antibody directed to particular foods. Even if the specific IgE is detected, a definite diagnosis cannot be simply based on positive-specific IgE results, as up to fifty percent of patients with positive IgE tests to certain foods do not in fact have an allergic reactions to that food. The upside to these results is that negative tests are very reassuring that the food can be ingested safely without experiencing an IgE-mediated food allergy.

Sometimes, even when taking all these factors into account, the diagnosis still cannot be firmly established. Therefore, a food challenge will be necessary. You will be asked to eat gradually increasing amounts of the suspected food under the physician's supervision. While food challenges can offer definite answers, they also can carry the of a serious reaction during a challenge. Diagnosing a food allergy is not an easy task. In addition to a skin test, blood tests, biopsy, and even a food challenge, your detailed medical and dietary histories are crucial for a final diagnosis.

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Peanut Allergy

Peanut and tree nut allergies affect about one percent of the population. Peanuts are the leading cause of severe allergic reactions, followed by shellfish, fish, tree nuts, and eggs. Studies have shown that one-third of people with a peanut allergy have experienced a severe allergic reaction. The first allergic reaction to peanut or tree nuts develops in most children between fourteen and twenty-four months of age. Peanut or tree nut allergies were once considered lifelong, yet new research has determined that up to fifteen to twenty percent of sufferers will actually outgrow the allergy by school age.

The peanut is in the legume family. If you are allergic to peanuts, it does not necessarily follow that you will be allergic to other legumes and be required to avoid them also. Tree nuts include almonds, Brazil nuts, cashews, hazelnuts, macadamia nuts, pecans, pine nuts, pistachio nuts, and walnuts. Although the peanut is not considered a tree nut, it is recommended that peanut-allergic patients avoid all tree nuts, and vice versa, as an extra precaution.

Refined peanuts are different from peanuts, peanut butter, and peanut flour when it comes to an allergy. This is because most peanut oil undergoes a refining process, in which it is purified, bleached, and deodorized. During a refining process, the proteins triggering an allergy are removed from the oil. This makes the highly refined oil allergen-free. The vast majority of peanuts that are used in the food service and by consumers in the U.S. are processed and are considered highly refined. Unrefined, "gourmet", "aromatic", "crude oil," or cold pressed oils are the oils that may still contain the proteins that cause the allergy. The use of these specialties is limited; however, it should be recognized that not all available peanut oil is highly refined.

Allergy shots have not been successful for patients with peanut or tree nut allergies. Until a cure is found, the only "cure" for the peanut or tree nut allergies is to stay away from all peanut and tree nut products. Read labels of every food you eat.

Seafood Allergy

According to a nationwide survey, about 2.3 percent of the U.S. population has a seafood allergy. In the United States population, 1 person out of every 50 people has a shellfish allergy whereas 1 person out of every 250 people has a fish allergy. A seafood allergy usually develops in late childhood into adulthood and is usually long-lasting. A seafood allergy can cause mild

symptoms, such as hives or lip and tongue swelling, or more severe, even life-threatening symptoms, such as hypotension, dizziness, nausea, wheezing, dyspnea, or even loss of consciousness.

Among shellfish, the crustacean group including shrimp, crab, crayfish, and lobster is most likely to cause an allergic reaction. Allergies to the mollusk group including clams, oysters, abalone, mussels, scallops, squid, octopus, and escargot are less common. Another seafood group of finned fish including salmon, cod, snapper, mackerel, tuna, grouper, flounder, halibut, trout, and sardines can also cause food allergies.

Researchers estimate that a person allergic to one type of fish has a fifty percent chance of being allergic to at least one other species of fish. Furthermore, if they are allergic to shellfish, they have a seventy-five percent chance of an allergy to another type of shellfish. Often, shellfish-allergic people can tolerate mollusks. In general, people suffering an allergy to one seafood group are able to tolerate a different seafood group. There appears to be no cross-reaction between finned fish and shellfish.

Raw fish tends to be more allergenic than cooked fish. Cooking with intense heat can partially or completely destroy the triggering seafood allergen. This process may explain why some patients who are allergic to fresh fish are able to tolerate canned salmon or tuna. People with extreme sensitivity though can suffer a severe allergic reaction from even trace amounts of seafood or mere exposure to fumes of cooking seafood. An allergy to iodine or radiographic contrast media (used in some radiographic procedures) and an allergy to shellfish are not related. If you have an allergy to shellfish, you do not need to worry about cross reactions with radio contrast material or iodine, and vice versa.

The only "cure" for shellfish or fish allergies is to avoid eating the offending fish. Read the labels of every food you eat and avoid seafood restaurants if you can since even if you order a non-seafood item off the menu, cross-contamination is possible. Also, shellfish protein can become airborne in the steam released during cooking so you should avoid areas used for cooking seafood.

Finally, the principal treatment of an acute severe allergic reaction is epinephrine. People with all food allergies should carry self-injection devices like the Epi-Pen with them at all times. Seafood-allergic reactions may be potentially life-threatening and should be taken very seriously. Therefore, sufferers should get an appropriate diagnosis and learn how to prevent and treat reactions to ensure safety.

Egg and Wheat Allergy

Egg allergy is one of the most common food allergies found in infants and children. In general, the reaction of an egg allergy is not as severe as that of peanut, nut, shellfish, or fish, however, severe anaphylactic reactions can occur. Most children outgrow an egg allergy before 5 years of age, but some people can suffer an egg allergy for a lifetime. The primary food allergens present in eggs are the proteins (ovomucoid, ovalbumin and conalbumin) in the egg white.

While cooking can alter the protein of a raw egg, it may not be sufficient to prevent an allergic reaction. Some mildly egg-allergic children can eat well-cooked eggs (in cake, for example) without experiencing any food allergy symptoms, but not raw or lightly cooked eggs. Other children can have severe allergic reactions to even well-cooked eggs. Those who are able to eat lightly cooked egg (e.g., scrambled egg) without reaction are unlikely to be allergic. In general, patients with egg allergies should keep on an egg-avoidance diet until they reach school age.

Influenza vaccines are grown on egg embryos and may contain a small amount of egg protein. Persons with a history of egg allergy who have experienced only hives after exposure to egg should receive influenza vaccine. But if after eating eggs or egg containing foods, the person experience hypotension, wheezing, dyspnea, nausea, vomiting which require epinephrine treatment, the benefits and risks of vaccination should be assessed by your allergist. If people experience severe allergic reaction to influenza vaccine before, they should not receive influenza in the future.

Another type food allergy is wheat allergy. True wheat allergy is not as common as other food allergies. There are four specific groups of proteins (albumin, globulin, gliadin, gluten) which can cause wheat allergy. The majority of wheat allergies involve albumin and globulin. Allergic reactions to gliadin and gluten are very rare. Most children with wheat allergy will eventually outgrow it.

Milk Allergy

Approximately two million, or eight percent, of kids in the United States are affected by food allergies. Cow's milk allergies can affect people of any age, but it is more common among infants. About two to three percent of infants have a cow's milk allergy and they typically outgrow it.

Casein and whey, which are the main proteins in cow's

milk, can cause allergic reactions in babies with genetic predisposition. When those babies are exposed to cow's milk, they could develop IgE antibodies to the casein, whey, or both, which would trigger allergic reactions. An allergic reaction can occur immediately or up to several days after milk ingestion. Symptoms may include hives, eczema, facial swelling, vomiting, diarrhea, or wheezing. Severe reactions occur rarely, but can result in anaphylaxis.

Lactose intolerance is a different form of a cow's milk allergy and is rare in infants. It is more common among older kids and adults. Lactose intolerance does not involve our immune system. It is due to the lack of the specific enzyme needed to digest the sugar lactose. Small amounts of cow's milk are usually tolerated. Except for skin rash and wheezing, other symptoms are quite similar to those of a cow's milk allergy, such as diarrhea, vomiting, and abdominal pain.

If your baby has a cow's milk allergy, goat's milk is not a good alternative as it contains some proteins similar those of cow's milk. You may be advised to switch to a soy protein-based formula. Because it has no milk sugar (lactose), it is also used by people who are lactose intolerant. Unfortunately, around twenty percent of cow's milk-allergic children are also allergic to soy milk.

If your infant cannot tolerate soy, you may have to switch to a hypoallergenic formula. Extensively hydrolyzed formulas have cow's milk proteins that are broken down into small particles so that they are less allergenic than the whole proteins in regular formulas. Most infants who have a milk allergy can tolerate these formulas, but in some cases, they still can provoke allergic reactions. In that case, amino acid-based infant formulas, containing protein in its simplest form, are recommended. Partially hydrolyzed formulas, which are not considering truly hypoallergenic, are not recommended for a baby with a cow's milk allergy.

Breast milk is the best form of nutrition for neonates and infants. The American Academy of Pediatrics recommended that mothers should continue breast feeding their infants for at least six months if possible. There is no conclusive evidence that breast feeding can prevent allergies from developing later in a child's life. It does, however, delay the development of food allergies by postponing your infant's exposure to those foods that can potentially produce allergies.

Atopy & Postponing Allergy Development

What is Atopy?

Patients with atopy are genetically predisposed to produce specific IgE antibodies to allergens and trigger inflammation leading to different allergic symptoms. People with atopy also have a tendency to develop closely linked allergic disorders: atopic dermatitis, hay fever, and asthma. Atopy frequently runs within families. Therefore, infants or children who have a family history of asthma, eczema, or hay fever have a high risk of developing allergic disorders.

Postponing Allergies in Infants

In general, newborn infants may be more likely to become allergic to foods than older infants. The approach for preventing or delaying a food allergy is to delay exposure to potential food allergens in the early age. Mothers should breast feed their infants for at least six months if possible since breast milk is more unlikely to produce an allergic reaction and can strengthen the child's immune system and decrease respiratory infection. Infants not being breast fed should be fed with pre-digested, protein hydrolysate formulas rather than cow's milk or soy-based formulas.

Infants should not be fed solid foods until they are six months old. When infants are six to twelve months old, vegetables, rice, meat, and fruit can be introduced to their diets. After the child is one year-old, milk, wheat, corn, citrus, and soy may be added. At two years of age, the child may have eggs. Finally, at age three, fish and peanuts may be introduced.

Similar to food allergy prevention, reducing contact with inhalant allergens, particularly dust mites and animal dander, at an early in life may delay the onset of hay fever or asthma symptoms. The steps to reducing dust mites and animal dander include using zippered, plastic covers on pillows and mattresses, and washing bedding in hot water every seven to ten days. Indoor relative humidity should be kept below fifty percent and, optimally, carpets, upholstered furniture, or other similar objects should be removed from the infant's bedroom. Also, it is best to avoid placing very young children in group day cares to decrease their exposure to respiratory infections which could consequently trigger asthma.

Maternal smoking during pregnancy is also associated with increased wheezing during infancy. Exposing children to secondhand smoke in the home can trigger asthma. Therefore, it is extremely important that infants should not be exposed to tobacco smoke before or after they are born.

Allergic disorders cannot be cured. By delaying exposure to allergens, we may be able to postpone, but not prevent, the development of allergic disorders in children at their early age.

