

Food Allergy: Playing Detective

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Tracking down the cause of adverse reactions to foods or trying to prevent them requires a combination of resourcefulness and an understanding of how food allergic reactions present, so that they can be distinguished from non-allergic events. Recognize that there are some unusual patterns of allergic reactions associated with foods which may be difficult to detect unless one is aware of these presentations. Some knowledge of labeling regulations concerning foods and additives is important. Even when parents and patients exercise great diligence, accidents may still happen with foods, and, in those cases, detective work is necessary.

Food allergy is only one of the ways in which a person can have an adverse reaction to a food. Some non-allergic food reactions will be discussed briefly, e.g., sugar (fructose and sobitol) induced diarrhea, to distinguish them from true food allergies. Food allergies can be either immediate-type (IgE** mediated food allergies) or delayed and usually non-IgE mediated. The non-IgE mediated reactions are usually diagnosed by the history as there are no good tests to identify them. They usually result in gastrointestinal symptoms e.g., vomiting, bloating, diarrhea, and weight loss or poor weight gain in children. Typical examples are cow's milk or soy milk protein intolerance, or delayed reactions to seafood. Large amounts of these foods are required to cause the reaction. This discussion will focus mainly on immediate-type or IgE mediated food allergies, which can lead to severe, even fatal, allergic reactions. The following is a general approach to identify causes of an allergic reaction, which may be due to a food:

1. Identify the food allergy patient e.g., strong family background of allergies; infant with eczema or asthma who is therefore more prone to food allergies; extremely strong dislike of certain foods; vomiting, diarrhea, eczema or hives after certain foods or after breast feeding (if mother is eating an allergenic food).
2. Identify food allergies; history is very important; allergy testing (also important to confirm the diagnosis, and to see if a food allergy has disappeared with time); oral challenge, if necessary.
3. Understand the general features of IgE mediated food allergy i.e., the allergic reaction is very reproducible; usually occurs within minutes and up to 2-4 hours of eating that food and lasts less than one day; usually results in itching, hives, swelling, rash, vomiting, diarrhea, or respiratory symptoms; and only minute amounts of food may be required.
4. Individual patients tend to have their own pattern of allergic reaction to a particular food and this needs to be kept in mind when trying to identify a food reaction.
5. In someone with a known food allergy, further allergic reactions are most frequently due to accidental ingestion of that food and not the development of new food allergies (except in the case of children under age three where milk, egg and peanut allergy may frequently coexist).

Most immediate food allergic reactions are caused only by a small number of foods. In children, these foods are milk, eggs, peanuts, wheat and soy. In older children and adults, the most common foods are peanuts, tree nuts, seeds, fish and crustaceans. Raw fruit and vegetable allergies are common in persons with hay fever. Kiwi allergy seems to be a growing problem. However, while wheat, corn, chocolate, tomato and citrus fruits are frequently mentioned as common causes of food allergies, anaphylactic reactions to these are extremely rare and true allergies to these (except for wheat) are uncommon.

6. Certain food allergies can present in unusual patterns e.g.:
 - a. Oral allergy syndrome, this is, fruit and vegetable allergies found in people with hay fever, causing allergic reactions only if they are eaten raw. Eating them cooked or processed usually does not cause these allergic reactions;
 - b. Food dependent, exercise induced anaphylaxis; Allergy to a food e.g., celery, wheat, shrimp which does not cause a reaction on eating the food unless the person exercises afterwards.
 - c. Latex allergy, associate with banana, avocado, kiwi, and other food allergies;
 - d. Allergic reaction to bee pollen, certain herbal remedies associated with hay fever e.g., Chamomile tea or bee pollen may cause allergies in ragweed allergic people.
 - e. Food groups. This may or not be important. It is uncommon to have multiple significant allergies to legumes e.g., peanut allergic people are not usually allergic to peas, soy, beans. Cross-reaction between crustaceans is very common, so someone allergic to shrimp will usually be allergic to lobster. Cross reactions between hooved animals vary with cow and goats milk being highly cross reactive but these are only occasionally cross reactive to mare's milk and beef.
7. Associated factors which can cause hives or make preexisting allergic reactions worse:
 - a. Drugs e.g., aspirin can make hives worse. A rash while on antibiotics might be due to a virus rather than the drug.
 - b. Exercise
 - c. Physical urticaria e.g., physical pressure, exercise, heat, sweating
 - d. Hormonal cycles
 - e. Contact urticaria e.g., animals;
 - f. Occupational allergy e.g., latex, psyllium (a bulk laxative)
8. Know what is unlikely to be a food allergy:
 - a. Chronic or recurrent hives without apparent pattern;
 - b. Chronic asthma, chronic nasal stuffiness and chronic ear infections;
 - c. Behaviour changes, irritability and overactivity in the absence of typical associated allergic features
 - d. Diarrhea due to fruit juices and lactose intolerance
 - e. Rashes around the mouth due to foods irritating the skin e.g, acidic, salty, spicy or concentrated foods such as fruit juices, soft drinks, ketchup especially in children with eczema
9. Understanding food labeling requirements:
 - a. Some components of flavourings, spice and seasoning mixtures do not have to be listed e.g., milk proteins, wheat if present in small amounts;
 - b. Some prepackaged products do not require ingredient listing
 - c. Difference in Canadian and U.s. labeling requirements
 - d. How erroneous labeling can occur.

10. Understanding how food contamination can occur at home, other eating facility, at retail and manufacturing levels.

11. Food allergy: Playing Detective

Go through the following checklist:

- a. Is reaction likely to be allergic? (see 3 above). Could it be coincidence?
- b. Known food allergy?
- c. Similarity to previous reactions.
- d. Contents of food.
- e. Food labels/food guides; declared, product change.
- f. Are food terms on the label familiar?
- g. Associated factors e.g., viral infections, drugs, etc.
- h. On-site contamination:
 - Kitchen: cooking utensils, baking pans, cutting board, cutting and serving utensils, common usage products (e.g., frying oil), cleaning procedure, presence of allergenic food
 - Dining: cutlery, serving utensils, tablecloth, spices, garnishes, previously contaminated food (e.g., jam)
 - Allergen in house: toys, hands, floor, bedding, utensils, cookie jars, kissing
- i. Retail contamination:
 - Unlabelled additive
 - Bulk food – packaged, unpackaged
 - Utensils, cutting board, etc.
- j. Manufacturing contamination / mislabeling;
 - Potential for contamination multiple food lines, similar food products, common equipment
 - Packaging error – mixed lots of packaging
 - Reworked materials e.g., leftover nut containing chocolate or ice cream recycled or reworked into supposedly nut free products;
 - Contamination of raw materials.

** IgE – a class of antibody normally present in very low levels in humans, but found in larger quantities in people with allergies and certain infections, and is normally responsible for immediate allergic reactions such as hay fever, anaphylactic food allergies or allergic asthma.

For more information and/or to support us through membership:

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