FOOD ALLERGIES IN CHILDREN AND PREVENTIVE MEASURES

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Abstract

The human body reacts to so many foreign particles known as allergy. Allergies are the body's reaction to normally harmless substances. Allergy symptoms range from mild to life-threatening. Allergies are the body's reaction to a foreign protein; usually, these proteins (allergens) are harmless. Food allergy is an immune system reaction that happens soon after eating a certain food. Even a tiny amount of the allergy-causing food can trigger symptoms such as digestive problems, hives or swollen airways. An allergic reaction can happen anywhere in the body. This includes the skin, eyes, lining of the stomach, nose, sinuses, throat, and lungs. Allergic reactions can cause; itchy skin, red watery eyes, dry skin, hives, itchy nose, vomiting, dizziness. Foods most commonly connected to food allergies include; fish, shellfish, tree nuts. To prevent food allergy in children one must ensure the daily management of food allergies in individual children by avoiding food that causes allergy, prepare for food allergy emergencies and provide professional development on food allergies for staff members.

Introduction

Allergies are the body's reaction to normally harmless substances. Allergy symptoms range from mild to life-threatening. Allergies are the body's reaction to a foreign protein. Usually, these proteins (allergens) are harmless. However, if one has an allergy to a particular protein, the body's defense system (immune system) overreacts to its presence in the body (Cleveland clinic, 2024). Immune system produces substances known as antibodies, when one has allergies, the immune system makes antibodies that identify a particular allergen as harmful, even though it is not. When someone comes in contact with the allergen, the immune system's reaction can inflame the skin, sinuses, airways or digestive system.

Allergies, also known as allergic diseases, are various conditions caused by hypersensitivity of the immune system to typically harmless substances in the environment.

These diseases include hay fever, food allergies, atopic dermatitis, allergic asthma, and anaphylaxis.

Food Allergies in Children

Food allergies occur when the immune system overreacts to specific proteins found in food. They are different from food intolerances, such as gluten intolerance. Food allergies can cause sudden and severe reactions. In some cases, they may be life threatening (Soliman, 2024). Food allergy is an immune system reaction that happens soon after eating a certain food. Even a tiny amount of the allergy-causing food can trigger symptoms such as digestive problems, hives or swollen airways. In some people, a food allergy can cause severe symptoms or even a life threatening reaction known as anaphylaxis.

Food allergy affects an estimated 8percent of children under age five and up to four percent of adults (Sichere and Sampson, 2014). While there's no cure, some children outgrow their food allergies as they get older. It is easy to confuse a food allergy with a much more common reaction known as food intolerance (Mayo Clinic, 2024). Strict avoidance of the food allergen is the only way to prevent a reaction. However, because it is not always easy or possible to avoid certain foods, staff in schools, out-of-school time, and early care and education programs (ECE) should develop plans for preventing an allergic reaction and responding to a food allergy emergency, including anaphylaxis. Early and quick recognition and treatment can prevent serious health problems or death. The following foods or food groups account for most serious allergic reactions in the United States: milk, eggs, fish, crustacean shellfish, wheat, soy, peanuts, and tree nuts.

The symptoms and severity of allergic reactions to food can be different between individuals and can also be different for one person over time. Anaphylaxis is a sudden and

severe allergic reaction that may cause death. According to CDC (2024), not all allergic reactions will develop into anaphylaxis and more than 40 percent (2 in 5) of children with food allergies have been treated in the emergency department (Centers for Disease Control and Prevention (CDC), 2024).

While bothersome, food intolerance is a less serious condition that does not involve the immune system. According to Food and Drug Agency, the nine (9) under listed foods are most commonly connected to food allergies include: Cow milk, Eggs, Tree nuts (almond, walnuts, pecans), Peanuts, Shellfish (crabs, shrimps, lobster), Wheat, Soy (soybeans, soymilk). Fish, Sesame

1. **Cow Milk:** An allergy to cow milk is one of the most common childhood allergies, affecting 2 – 3% of children (Caffarelli *et al*., 2010). Around 90% of children will outgrow the condition. Allergic reactions to cow milk may occur within minutes of consuming milk or up to several hours later. The only treatment for cow's milk allergy is to avoid it although, they includes foods and drinks that contains cow's milk such as; Milk, Milk powder, Cheese, Butter/Margarine, Yogurt, Ice cream, Cream.
2. **Eggs:** an egg allergy is the second most common cause of food allergy in children. However, 68% of children allergic to eggs outgrow their allergy by the age of 16 years. (Wang, 2019). Children are trends to be allergic to egg whites but not the yolks and vice versa. This is because the protein in egg whites and egg yolks differ slightly. Like other allergies, the treatment for egg allergy is an egg –free di*et al*so speaking with health care professional before giving egg-containing foods to children is very important, as the consequences of ingesting eggs when allergic to them can be severe.

3. **Tree Nuts:** According to William (2020), a tree nut allergy is an allergy to some of the nuts and seeds that come from tree, it is a common food allergy that may affect up to 3% of children worldwide (by Byrne *et al* (2010). A tree nut allergy is usually a lifelong condition and less than 10% of people out grow it. A study by Byrne *et al* (2010), suggests that tree nut allergy is also responsible for 1 in 2 anaphylaxis – related death. However, a study in 2021 by World Allergy Organization suggests that many children allergic to one type of nut may also tolerate other types. As such, the authors suggest other strategies for managing nut allergies, such as oral immunotherapy (which is a process of teaching the body to become tolerant). This should only be done under a physician's supervision. Some examples includes; Almond, Cashews, Pine nuts, Walnuts, Pecans.

4. **Peanuts:** Like a tree nut allergy, peanut allergies are very common and can cause severe and potentially fatal allergic reactions. The two conditions are considered distinct because peanut is a LEGUME. It is estimated that over 6.1 million people in the developed countries have a peanut allergy according to FARE (Food Allergy Research and Education 2014). According to Foong *et al* (2021), 20% of children who develop a peanut allergy may find it resolves as they move into their teenage years. The root cause of peanut allergies is unknown. However, people with a family history of peanut allergies may be more at risk. However, research by Abrams *et al* (2020), suggests that introducing peanuts early may be protective. Like other allergies, treatments includes avoiding all peanuts and peanut containing products. Also, the FDA has approved the oral immunotherapy medication called Palforzia for the treatment of peanut allergies in people age 4 – 17 years (Lauren *et al.*, 2022).

5. **Shellfish:** A shellfish allergy is caused by body attacking proteins from the crustacean and mollusk families of fish known as shellfish. Examples of shell fish include; Shrimp, Prawns, Crayfish, Lobster, Squid, Scallops.

   Symptoms of a shellfish allergy come on quickly, even inhaling the vapors from cooking shellfish an allergic reaction in those who are allergic. Sometimes, a seafood allergy is hard to distinguish from an adverse reaction to a contaminant of seafood such as bacteria, virus or parasites. This is because the symptoms can be similar, as both can cause digestive issues like vomiting, diarrhea, and stomach pain.

6. **Wheat:** wheat allergy is an allergic response to one the proteins found in wheat, its more common in children, but they will often outgrow it by age 10years (Glampaolo *et al*, 2019). Those with a wheat allergy only need to avoid wheat and can tolerate gluten from grains that do not contain wheat.

7. **Soy:** soy allergies are triggered by a protein in soybeans or soy-bean containing products. According to Messina *et al* (2020), soy affect up to 0.5% of children and are most commonly seen in infants and children under 3 years old, around 70% of children eventually outgrow the allergy. Symptoms range from itchy, tingly mouth and runny nose to a rash and asthma or difficulty in breathing. Common food triggers of soy allergy include soybeans and soy products like soymilk or soy sauce (American college of Allergy, Asthma and Immunology 2021). Since soy is found in many products/ foods, it is important to read food labels and only treatment is avoidance of soy.

8. **Fish:** Unlike other allergies that are usually present in childhood, up to 40% of children with fish allergies report not experiencing symptoms until adulthood. (American College of Allergy, Asthma & Immunology, 2022). The main symptoms of food allergy are vomiting

and diarrhea. Interesting shellfish and fish with fins don't carry the same proteins, so children who are allergic to shellfish may not be allergic to fish.

9. **Sesame:** In 2021, the food and drug agency declared sesame as the ninth major allergies may occur in up to 17% of children who also have Ige – meditated allergic reactions to peanuts and tree nuts (Kristin *et al*, 2020). Sesame can be found in a wide range of food such as; Asian cuisine, baked goods, and dipping sauces, as of January, 2023 sesame must be labelled on all food containing sesame it is important to check packaging dates because products shelved before the above date may contain sesame but not have it on the label.

Symptoms of a food allergy

American college of Allergy, Asthma and Immunology 2021, listed the following symptoms of food allergy:

1. Feeling dizzy or lightheaded
2. Red itchy dry skin or a raised rash (hives)
3. Swelling of the lips, face and eyes (angioedema)
4. Coughing, wheezing, breathlessness, noisy breathing or a hoarse voice
5. Sneezing or an itchy, runny or blocked nose
6. Feeling sick or being sick
7. Tummy pain
8. Diarrhea
9. Watery eye

Severe Symptoms of a Food Allergy in Children

According to National Health Service (2023), Anaphylaxis is a severe allergic reaction; anaphylaxis is a life threatening allergic reaction that occurs immediately upon exposure to the allergen trigger. It affects the entire body. Symptoms can include:

- Trouble breathing, shortness of breath, or wheezing
- Feeling as if the throat is closing
- Hoarseness or trouble talking
- Suffocation by swelling of the face, lips, tongue, and throat
- Cool, moist, or pale blue skin
- Feeling faint, lightheaded, or confused
- Nausea, vomiting
- Fast and weak heartbeat
- Feeling dizzy, with a sudden drop in blood pressure
- Loss of consciousness
- Diarrhea
- Seizure
- Constricted airways in the lungs.

Symptoms of anaphylaxis may start out relatively mild but, if not treated promptly, it can become life threatening in a short amount of time.

Prevention of Food Allergy Reactions at School

According to UCDAVIS health (2023) the following are ways to prevent food allergy reactions at school.

Provide Information about your Child's Food Allergy

Prepare a complete list of foods your child is allergic to and give it to your child's school administration and teacher. Include the possible symptoms of a reaction and medications. Make sure your child's teacher can recognize an allergic reaction. Develop a written plan with your child's physician in case there's an emergency. This information should be shared with school staff and cafeteria workers.

Help Reduce Food Allergens in the Classroom

Parents can institute an "only-from-home" policy, in which the child knows to eat only food from their home. You can also provide teachers safe snacks to have on hand when other children get a special treat. Nuts and seeds are often hidden ingredients in cupcakes or cookies that come from stores or other people's homes. Even if nuts are not mentioned on a label, ingredients may be processed on machinery that previously handled nuts, leaving residues that can cause a reaction.

Teach Your Child How To Manage Their Food Allergy

It's important for parents to educate their child about their food allergies. Teach your child to recognize what is safe to eat. Practice ways to be assertive in discussing their problem, refusing foods they shouldn't eat and asking for help if they feel an allergic reaction coming on.

- Know what ingredients are in the foods at the restaurant where you plan to eat. When possible, get a menu from the restaurant ahead of time and review the menu items.
- Never assume you know the ingredients in an item. Always ask, even if you have been to the restaurant many times before.
- Let your server know from the start about your child’s food allergy. Ask how the dish is prepared and what's in it before you order. If your server do not know this information or seems unsure of it, ask to speak to the manager or the chef.

- Do not use buffet-style or family-style service. There may be cross contamination of foods from using the same serving utensils for different dishes.
- Do not let your child eat fried foods. The same oil may be used to fry several different foods.

Centers for Disease Control and Prevention, (2024) outlines the following guideline for prevention of allergies in children

If a child has food allergy, avoiding the ingestion of the allergen is the only effective way to prevent allergic reactions. Other steps may include;

1. Red food labels carefully
2. Watch out for cross-contamination
3. Early introduction of allergic food in children's food
4. Ensure the daily management of food allergies in individual children.
5. Prepare for food allergy emergencies.
6. Provide professional development on food allergies for staff members.
7. Educate children and family members about food allergies.
8. Create and maintain a healthy and safe educational environment.

Conclusion

Allergies are the body's reaction to normally harmless substances. Allergy symptoms range from mild to life-threatening. When one has allergies, the immune system makes antibodies that identify a particular allergen as harmful, even though it is not. When someone comes in contact with the allergen, the immune system's reaction can inflame the skin, sinuses, airways or digestive system. Food allergy is an immune system reaction that happens soon after eating a certain food. Even a tiny amount of the allergy-causing food can trigger symptoms such as

digestive problems, hives or swollen airways. Foods most commonly connected to food allergies include: fish, shellfish, tree nuts, peanuts, milk and eggs etc. Prevention of food allergy reactions at school; provide information about your child's food allergy; also, teach your child how to manage their food allergy.

Recommendations

Parent should also try to find out if their child suffers any allergic reaction; also they should try to avoid any food substance that produces allergy and also communicated their child allergic status to their teacher.

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