

Chapter 11

Food Allergies

Food Allergies

- Affect:
 - ✓ \approx 6-8 % of children
 - ✓ \approx 2% of adults
- Food Allergy is: an abnormal response or reaction to a certain food.
- This reaction is triggered by the immune system.
- Consuming the suspected food causes the body:
 - To produce antibodies called immunoglobulin E [IgE] to fight the allergen.

Types of Reactions to Allergens

Allergies bring more than the misery of a stuffy nose, watery eyes, and sneezing.

Reactions can be:

1) Light with symptoms such as [urticaria, stomach upset].

➤ Urticaria commonly referred to as hives.

- Swollen, pale red bumps or plaques (wheals) that appear suddenly on the skin,
- Cause itching, but may also burn or sting,
- Can appear anywhere on the body, including the face, lips, tongue, throat, or ears, arms etc.

Urticaria on the Arm



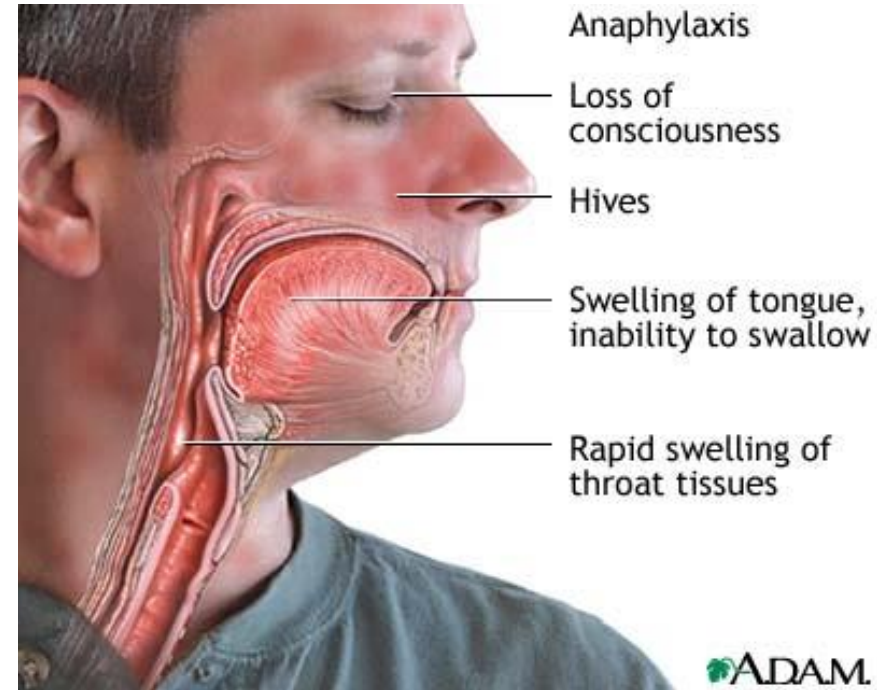
Types of Reactions to Allergens Cont'd.

2) Severe (acute): referred to as anaphylaxis or anaphylactic shock.

- Anaphylaxis is a sudden, severe allergic reaction that occurs when a person is exposed to an allergen
 - It is a life-threatening reaction that causes a sudden release of chemicals, including histamines, from cells in the blood and other body's tissues.
 - These chemicals
 - ✓ Dilate the blood vessels, and
 - ✓ Lower blood pressure.
 - ✓ Cause the blood vessels to leak fluid:
 - Leading to hives and swelling, especially around the face and throat.
 - These chemicals also act on the lungs, causing an asthmatic reaction causing the lung's airways to constrict, thus making breathing very difficult.

Symptoms of Anaphylaxis Include

- Swelling of tongue, throat & airways which can cause:
 - Difficulty breathing, speaking, and swallowing.
- Blood pressure drops,
- Unconsciousness,
- Even death.



Anaphylaxis is a Medical Emergency.

- Occurs shortly after exposure,
 - Usually within minutes
 - The most severe cases may be fatal just 10 minutes after exposure.
- Can occur if a person does exercise after consumption of an allergen.

Allergy Emergency Treatment

- If allergy is severe
 - ✓ an antihistamine should be handy
- Antihistamines come in different forms, including:
 - Tablets,
 - Capsules,
 - Liquids,
 - Nasal sprays,
 - Eye drops, and
 - Injection epinephrine kit.
- ❖ If administered on time, an injection of epinephrine (adrenaline) may reverse the condition.

How does Epinephrine Work?

- During a life-threatening allergic reaction, Epinephrine:
 - Constricts blood vessels to increase blood pressure,
 - Relaxes smooth muscles in the lungs to reduce wheezing and improve breathing,
 - Stimulates the heart (increases heart rate), and
 - Works to reduce hives and swelling that may occur around the face and lips.

Allergy Diagnosis

Is usually made by:

- A skin test, or
- Lab tests, and
- A detailed diet history.

The Most Common Causes of Food Allergy Include:

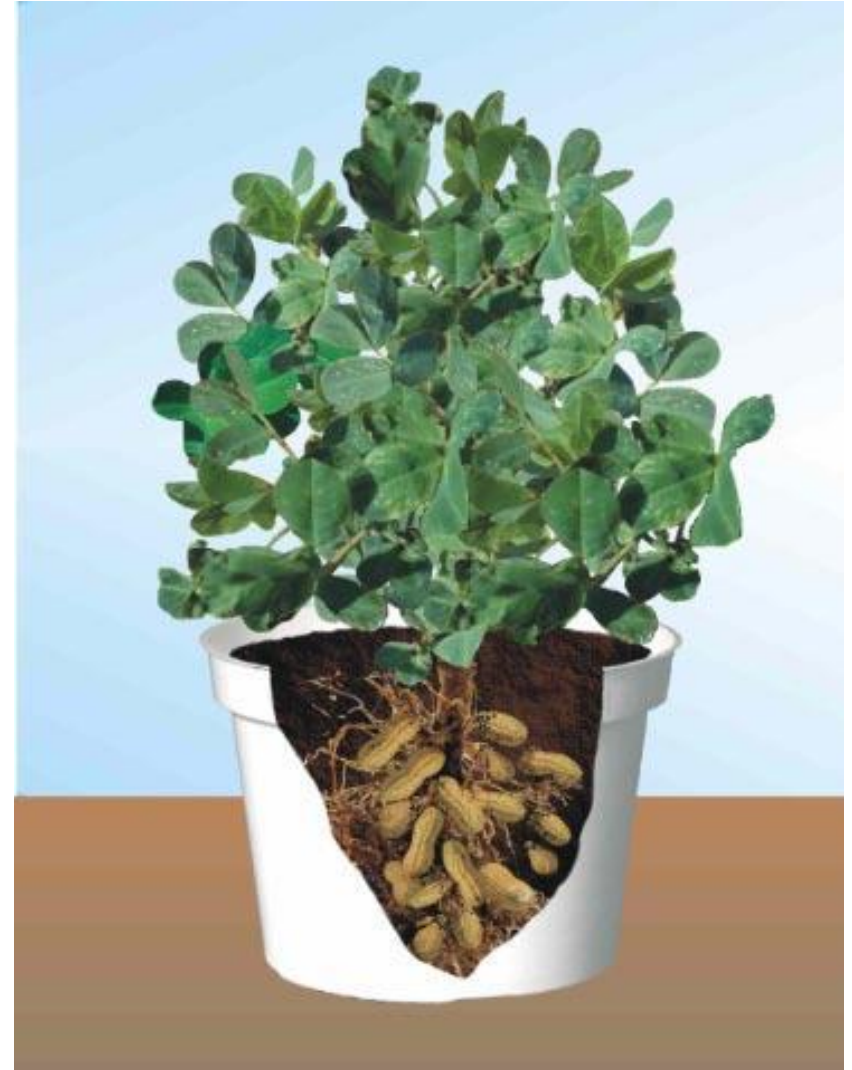
1. Peanuts.
2. Tree nuts, particularly almond, walnut, hazel nuts, Brazil nuts, and cashews.
3. Fish: All types of fish.
4. Shellfish, especially shrimps and lobster.
5. Dairy products.
6. Eggs.
7. Wheat.

Reading food labels is essential

Peanut Allergy

Avoid:

- Peanuts,
- All products containing peanuts,
- Peanut oil,
- Peanut butter,
- Peanut flour.





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Pistachios



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Chestnuts

Tree Nut.



csf014782 fotosearch.com

Walnuts



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Hazelnuts

Tree Nut Allergy

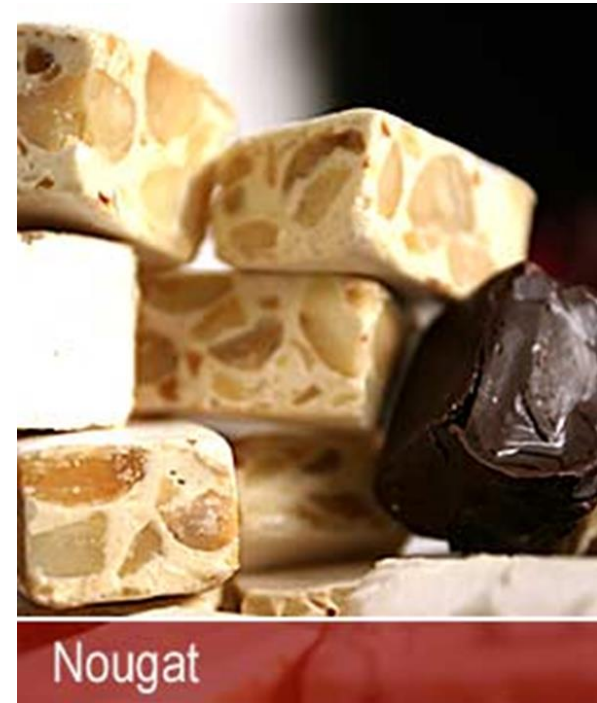
- Is one of the most common food allergies in adults.
- Tree nuts include:
 - Almonds,
 - Brazil nut,
 - Cashews,
 - Chestnuts,
 - Hazel nuts,
 - Macadamia nuts,
 - Walnuts,
 - Pecans,
 - Pine nuts,
 - Pistachio nuts.

Avoid

- All tree nuts and their products such as:
 - Nut pastes,
 - Nut butters,
 - Nut oils,
 - Any product that might contain them such as nougat and chocolates.



Nougat: a candy made of: sugar or honey + nuts, and egg white, might contain butter.



Fish Allergy

Avoid

- All fish species,
- Products that contain fish such as:
 - Worcestershire sauce,
 - Roe (fish eggs),
 - Caesar salad,
 - Caviar: processed salted roe,
 - Surimi which is made from fish muscle and used to make imitation seafood [shellfish] such as:
 - Imitation crab leg, crab cakes,
 - Imitation lobster products.

Surimi: A term meaning “reformed fish flesh” into various shapes.



Avoid Shellfish that causes Allergy



Shrimp



Crab



Lobster



Crawfish



Clams



Oyster



Scallop

A Milk Free Diet should Exclude

- Milk in all forms: (powder, solids, malted, condensed, evaporated, whole, low-fat, non-fat, skimmed, and goat's milk)
- Lactose,
- Yogurt,
- Buttermilk, butter milk solids such as kishek
- Cheeses of all kinds, Casein Curds
- Rennet casein (also called milk protein),
- Cream (sweet or sour), sour cream solids
- Half & half [A mixture of half milk and half cream].

A Milk Free Diet should Exclude Cont'd.

- Butter, Butter fat (clarified butter [ghee]) ,
- Artificial butter flavor,
- Most Margarine because they may contain an artificial butter flavor,
- Caseinates such as ammonium caseinate, calcium caseinate, potassium caseinate, or sodium caseinate: used in food products and pharmaceuticals.
- Hydrolysates listed as: casein, milk protein, whey, or whey protein hydrolysates.

A Milk Free Diet should Exclude Cont'd.

- Lactalbumin or lactalbumin phosphate [whey protein].
- Lactoglobulin: major whey protein.
- Whey in all forms: including sweet, de-lactosed, and protein concentrate.
- Custard, Puddings, Ice cream, etc.
- Nougat: made of beaten egg whites and honey, and might contain butter.

Alternatives to Milk and Milk Products

- Fortified beverages such as: soymilk, potato milk or rice milk:
 - ✓ These alternatives can be used as substitutes for milk in milk containing product [recipes].
- Alternative sources of riboflavin, pantothenic acid and phosphorus are:
 - ✓ Legumes,
 - ✓ Nuts,
 - ✓ Whole grains.
- Hypoallergenic formulas for infants having milk protein allergy.

Hypoallergenic Formulas for Infants with Milk Protein Allergy



Egg Allergy

- Eggs should be completely avoided even if the diagnosis is:
 - Allergy to egg whites, or
 - Allergy to egg yolks.

Because:

- ✓ It is difficult to separate them from each other completely.

Egg Free Diet

- Avoid:
 - Eggs (white, yolk, powdered, solids),
 - Egg substitutes: which are made of egg whites + added vitamins and other nutrients to make up for those lost by eliminating the egg yolks,
 - Eggnog,
 - Mayonnaise,
 - Meringue.

Meringue, is a type of dessert, often associated with French, Swiss, and Italian cuisine, made of whipped egg whites and sugar, and occasionally an acid such as cream of tartar or a small amount of vinegar.



Egg Free Diet Cont'd.

Avoid all egg proteins which might be in any product.

- Albumin: water soluble protein in the egg white.
- Ovalbumin: predominant protein in egg white.
- Globulin: water soluble protein in egg whites.
- Ovomucin: is a trypsin inhibitor found in raw egg white; it is a protein.
- Ovovitellin: a protein in the egg yolk.
- Livetin: one of the proteins in the egg yolk.

Read food labels !!!!!

Wheat Allergy

- Wheat allergy is an allergic reaction to foods containing wheat.
- Body produces antibodies to proteins found in wheat.
- Allergic reactions can be caused by eating wheat, but also, in some cases, by inhaling wheat flour.
- The primary treatment is to avoid wheat, but that is not easy because:
- Wheat is found in many foods, including some you might not suspect, such as soy sauce, ice cream and hot dogs.

❖ Labels. !!!!

Wheat Proteins

Ozborn (1907) has first classified the wheat flour proteins into 4 main fractions according to their characteristics:

- Non-gluten:
 - 1) Albumins-dissolve in water and coagulate on heat,
 - 2) Globulins-dissolve in neutral salt solution,
- Gluten:
 - 1) Glidains/Prolamins- dissolve in 75% alcohol, and
 - 2) Glutenins/Glutelins-do not dissolve in alcohol, but dissolve in diluted acid or diluted base.