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## Food Allergies

### Peanut, Egg, and Milk

#### What defines a food allergy?

A *food allergy* is an abnormal reaction to food that is caused by the immune system. Normally, the immune system protects us from disease. But sometimes it can cause us problems. That's what happens with a food allergy. The immune system mistakenly "thinks" the food is dangerous. It creates antibodies that cause an unpleasant and maybe dangerous reaction.

A food allergy is different from a *food intolerance*. That's because there is a different underlying cause. The immune system does not cause a food intolerance. Something else, like a missing enzyme, is the cause. For example, a person could have a milk allergy or a milk intolerance. A milk allergy is caused by an abnormal immune response. Milk intolerance is caused by a lack of the enzyme called lactase.

#### Peanut, egg, and milk allergies

Allergies to peanuts, eggs, and milk are fairly common. Some people with allergies to these foods have severe, even life-threatening, reactions. Others have mild reactions. Peanut allergies usually last a lifetime. Egg and milk allergies often do not. Children tend to outgrow them.

If you were allergic to one of these foods, wouldn't it be nice to know if you:

- Might have a severe reaction?
- Can eat the food raw, cooked, or neither?
- Will get over it?

Now there is testing that can help answer these questions for peanut, egg, and milk allergies. It's called *food component testing*.

#### How does food component testing work?

This testing is done on a sample of your blood. It cannot be done as part of a skin test. The food component test looks for IgE antibodies to specific proteins in the food. These proteins can all cause an allergic reaction. Some of them cause only a mild or moderate reaction. Others cause a severe reaction. Knowing which protein you react to can give you an idea of how severe your reaction will be. It might also give you an idea if your allergy will persist for life and whether you have to stay completely away from the food.



#### Symptoms of a food allergy

Symptoms usually occur within a few minutes to an hour after eating the food. Symptoms are similar for all types of food allergies. They include:

- Itching or tingling in the lips or tongue
- Hives
- Swelling of the lips or tongue
- Rough, red, itchy skin
- Stomach pain, vomiting, diarrhea
- Asthma (wheezing, difficulty breathing)
- Feeling faint (lightheadedness)
- Anaphylaxis

### How does food component testing help?

Information from the test will help you know how to live better with the allergy. Here are some examples.

#### Peanut allergy<sup>1-3</sup>

Peanut component testing can tell you if you are likely to have a severe reaction to peanuts. For example, if the test says you are sensitive to the peanut component Ara h 1, 2, or 3 protein, you are at risk for a severe, maybe even life-threatening, reaction. This is true even if you've only had mild reactions in the past. This means you should completely stay away from peanuts. You should not eat peanuts or foods that contain peanuts. You should also stay away from foods that might be contaminated with peanuts. This can happen when a food without peanuts is prepared in the same place as a food with peanuts. You should also carry an epinephrine injector and know how to use it. It may save your life if you have a severe reaction.

If the test says you are sensitive only to Ara h 8, you have a low risk of a severe reaction. You might even be able to eat peanuts. An oral food challenge could tell you if it's safe to eat peanuts. Be sure to clear it with your allergist before eating peanuts in any form.

#### Egg allergy<sup>4</sup>

Egg component testing can tell you if you are allergic to raw egg, cooked egg, or both. If the test says you have a high level of antibodies to *ovalbumin*, you are at high risk of a reaction to raw or slightly cooked eggs. So you should not eat an omelet or scrambled, fried, or poached eggs.

If the test says you have a low level of antibodies to ovalbumin, you are at low risk of a reaction to raw or slightly cooked eggs.

If the test says you have a high level of antibodies to *ovomucoid*, you are at high risk of a reaction to both raw (slightly cooked) and cooked (baked) eggs. This means you shouldn't eat eggs or anything made with eggs. You should stay away from eggs completely.

If the test says you have a low level of antibodies to ovomucoid, you might be able to eat baked eggs and baked goods that contain eggs. This could include quiche, soufflé, cakes, and muffins. An oral food challenge can tell you if this is safe. Be sure to clear it with your allergist before eating baked eggs.

Anaphylaxis is a very serious reaction that starts within seconds or minutes after eating the food. A person with anaphylaxis should get help right away. Symptoms include:

- Hives, itchiness
- Swelling of the face, eyes, or tongue
- Stomach pain, vomiting, diarrhea
- Asthma (wheezing, difficulty breathing)
- Feeling faint (lightheadedness)
- Anxiety
- Difficulty swallowing
- Nasal congestion
- Cough
- Slurred speech
- Chest discomfort or tightness, palpitations
- Unconsciousness

### Milk allergy<sup>5-7</sup>

There are several important proteins in milk. These include casein,  $\alpha$ -lactalbumin, and  $\beta$ -lactoglobulin. The most important one is casein. This is because more people are allergic to casein. It's also because IgE antibodies to casein are better at detecting milk allergies.

If the test says you have a high level of antibodies to *casein* or  *$\beta$ -lactoglobulin*, you are at high risk of having a reaction to heated milk. You should stay away from cooked or processed foods that include milk or casein.

If the test says you have a low level of antibodies to casein, you are at low risk of a reaction to extensively heated milk. You might be able to eat baked goods such as waffles and muffins that contain milk. An oral food challenge can tell you if this is safe. Be sure to clear it with your allergist before eating heated milk.

### References

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