

## *Webinar 4 Handout:* **ALLERGIES**

These days it seems like everyone has a food allergy (or at least claims to). Maybe it's because of the marketing power of "allergen-free" products, maybe it's the trendy thing to have, or maybe it's just an easy way to avoid eating a food you don't like (sorry kids, you probably *aren't* allergic to Brussels sprouts!) Despite all the allergen hooplah, there actually are people out there who are seriously allergic to certain foods, and eating these foods can have severe and even life-threatening consequences. A true allergic reaction isn't something to take lightly and people who have food allergies need to be prepared for any food situation that may come their way. Knowing what foods are fair game, what foods are off limits, and where certain ingredients might show up is the best way to prevent having an allergic reaction. So how do you know if you have a true allergy, or if you're just feeling sick after eating cheese because you simply ate too much of it?

### **What is a Food Allergy?**

A true **food allergy** is when the immune system mistakenly targets a normally harmless substance in a food that you've eaten, usually a protein, and attacks it. Your body views the protein as harmful, setting off a chain reaction within your body. During an allergic response, the immune system produces an abnormally large amount of the antibody immunoglobulin E (IgE) so it can fight off the protein allergen that it has marked as an invader. IgE causes a release of histamine, a protein that triggers the symptoms that we commonly think of when we think of allergic reactions. Symptoms can occur within minutes and range from mild to severe and even life threatening. Possible symptoms include hives, redness, itchy mouth, runny nose, nausea, vomiting, diarrhea, stomach pain, sneezing, obstructive swelling, trouble swallowing, shortness of breath, turning blue, loss of consciousness, chest pain, weak pulse, and anaphylaxis (a severe, potentially fatal reaction).

### **Common Food Allergies**

Although there are more than 160 different foods that can cause an allergic reaction, there are eight big food categories that are the most common food allergies in the United States. The big eight account for 90% of serious allergic reactions in the United States.

The top eight allergens are **eggs, fish, milk, peanuts, shellfish, soy, wheat and tree nuts** (walnuts, almonds, hazelnuts, cashews, Brazil nuts, and pistachios).

## What is a Food Intolerance?

A **food intolerance** is not the same as an allergy. A food intolerance occurs when your body is unable to digest a certain component of food, such as lactose, a sugar found in milk. Unlike a food allergy, intolerances do not involve the immune system. Symptoms can be unpleasant, including abdominal cramping or diarrhea, but they are not life threatening. While a food intolerance can be extremely irritating, it's not deadly. More often than not, an intolerance reflects the body's inability to properly break down and digest the food component. The side effect may be cramping, gas, nausea or diarrhea. Food intolerances are more common than allergies and difficult to diagnose.

## Common Food Intolerances

- **Lactose Intolerance:** Lactose is the sugar in milk. Lactose intolerance occurs when a person doesn't make enough (or any) lactase, the enzyme that breaks down lactose. This is usually due to genes. Normally, lactase breaks down lactose into smaller sugars in the small intestine so that it can be absorbed. If lactase enzymes are missing or if there aren't enough of them, the lactose sugars are left unabsorbed and continue down the GI tract into the large intestine (colon). The sugars end up getting broken down in the large intestine by bacteria, which attracts fluid and forms gas, leading to bloating, abdominal pain, and diarrhea. Most Americans have some degree of lactose intolerance, meaning they can eat a little dairy, but too much triggers symptoms.
- **Intolerances to Food Additives:** Some people react to certain ingredients that are added to food to enhance taste, add color, or protect against the growth of microbes. Compounds such as monosodium glutamate (MSG) and sulfites are tied to reactions that can be confused with a food allergy. An intolerance can arise from overexposure to a certain additive, can be connected to an existing condition, or could be a reaction to a specific part of a compound. For example, MSG intolerances can arise from consuming too much of it, and are also commonly seen in people who have severe asthma. A person might also have a reaction specifically from the amino acid glutamate in MSG. Reactions to intolerances will show up in varying ways in different individuals. Symptoms may range from headaches to chest pain to stomach aches and even numbness in certain body parts.
- **Non-Celiac Gluten Intolerance/Sensitivity:** Gluten is a protein found in wheat, barley, and rye. As you will read below, there are a few different conditions related to gluten, one of which is gluten intolerance. Gluten intolerance is identified when people experience abnormal and negative symptoms such as pain, bloating, or diarrhea after eating gluten but

they don't meet the criteria to be diagnosed with true celiac disease or a food allergy. Research on this topic is fairly new and we're just beginning to explore the whole spectrum of possible reactions to gluten.

**This chart breaks down the basics:**

	<b>Food Allergy</b>	<b>Food Intolerance</b>
<b>What is going on in your body?</b>	Body mistakenly targets a food substance as harmful and attacks it	Body is unable to digest a certain component of food
<b>Immune Response</b>	Yes	No
<b>Onset</b>	Within minutes	Active or gradual
<b>Symptoms Severity</b>	Mild, severe or life threatening	Unpleasant but not life threatening
<b>Symptoms</b>	Hives, redness, itchy mouth, runny nose, nausea, vomiting, diarrhea, stomach pain, sneezing, obstructive swelling, trouble swallowing, shortness of breath, turning blue, loss of consciousness, chest pain, weak pulse, and anaphylaxis (a severe, potentially fatal reaction)	Abdominal cramping, gas, nausea or diarrhea
<b>Trigger</b>	Small amount of food, happens every time you ingest it	May only happen when you eat a lot of the food, may only happen if you eat it often
<b>Common types</b>	Peanuts, Tree nuts, Milk, Egg, Wheat, Soy, Fish, Shellfish	Lactose intolerance, intolerance to food additives, non-celiac gluten intolerance

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## Who Has Food Allergies?

Food allergies are often confused with food intolerances or other non-allergic food reactions. Surveys indicate that almost 80% of people who are asked if they have a food allergy respond that they do when they actually don't. People may think they have an allergy because they react negatively to a food. For example, people who have recurrent gastrointestinal problems when they drink milk may say they have a milk allergy. But really they may be lactose intolerant. Food poisoning, which is caused by microbes such as bacteria in a food, stir up very similar symptoms to food allergies including cramping. Ulcers (holes in the stomach or small intestine caused by acid, bacteria, medication, or other factors) also bring about some of these symptoms.

Allergies are more common in children and people with a family history. They usually develop early in life and can even be outgrown later on in adulthood. However, it's also possible for adults to develop particular allergies. Each year millions of Americans have allergic reactions to food but it's hard to determine the exact percentages because not everyone gets tested, and many methods for data collection involve self reporting which is not always accurate. Food allergies affect about 2-4% of adults and 4-6% of children in the US, but prevalence is on the rise. The CDC reports that the prevalence of food allergies increased about 50% between 1997 and 2011, but there is no clear answer as to why.

## Milk Allergies vs. Lactose Intolerance

Milk allergies are often confused with lactose intolerance but they are actually very different. An allergic reaction to milk can be caused by one of the two main proteins in milk: **casein**, which is found in the solid part (curd) of milk, and **whey**, which is found in the liquid part of milk that remains after milk curdles. Milk allergy involves the immune system - casein and whey are perceived as a threat to the immune system, triggering a response and a release of histamines. Symptoms include wheezing, hives, vomiting, diarrhea, cramps, watery eyes, and itchy skin.

Lactose intolerance doesn't involve the immune system, only the digestive system, and it requires a different treatment than a true milk allergy. Lactose is the sugar in milk and lactose intolerance occurs when lactase, the enzyme that breaks down lactose, is missing in the small intestine (as discussed above). Common signs and symptoms of lactose intolerance include digestive problems such as bloating, gas, or diarrhea after drinking milk or products containing milk, like cheese or ice cream.

This chart breaks down the basics:

	<b>Milk Allergy</b>	<b>Lactose Intolerance</b>
<b>What is going on in your body?</b>	Allergic response to casein or whey protein in milk	Missing the enzyme to break down lactose sugar in milk
<b>Immune Response</b>	Yes	No
<b>Symptoms</b>	Wheezing, hives, vomiting, diarrhea, cramps, watery eyes, and itchy skin	Digestive problems like bloating, gas, or diarrhea

## Gluten

Two decades ago, unless you were a baker, you never heard about gluten. Now it's in the spotlight and you hear about it on menus, in food products and there are even whole dedicated sections at the market! Researchers are discovering new conditions that cause reactions to gluten. Gluten is one of the proteins found in grains such as wheat, barley, rye, and triticale (a cross between wheat and rye). Gliadins and glutenins are the two components of gluten that can cause a reaction. There are many different reactions to gluten and wheat. People can have celiac disease, wheat allergies, or gluten sensitivities.

- **Celiac disease**, also known as gluten-sensitive enteropathy, is an inflammatory small intestinal disorder. It's an *autoimmune disease* of the small intestine, NOT an allergy or an intolerance. It's a genetic, life-long condition. With celiac disease, gluten does not get completely digested and it causes an inflammatory response, leading to the destruction of the intestine. Celiac disease affects about 1% of the general population. A completely gluten and wheat-free diet is the only known treatment for celiac disease.
- **Wheat allergies** are when someone is allergic to a wheat protein, which may or may not include the specific protein gluten. This is an example of a true food allergy as mentioned above in common allergies. Most people outgrow this allergy by the age of 5. An FDA survey found that about 0.4% of adults in the United States have a wheat allergy. People with wheat allergies should avoid all foods containing wheat but do not necessarily need to follow a gluten-free diet. They can often tolerate grains such as amaranth, buckwheat, corn, oats, millet, rice, sorghum, quinoa and even barley and rye.

- Non-Celiac gluten intolerance/sensitivity** occurs when people test negatively for celiac disease and wheat allergies but experience negative symptoms after eating foods with gluten. Neither an allergic or autoimmune response can be identified - it's an innate immune response, NOT a true allergy. Other wheat proteins may trigger responses, not just gluten. Celiac disease and wheat allergies are well understood, but gluten sensitivities and other syndromes just started gaining interest and being studied more in depth in the last several years. The prevalence is unknown but anecdotal evidence suggests anywhere between 0.5% to 6% may be effected. There is no diagnosis yet. People with gluten sensitivities can prevent reactions and malnutrition by eating a gluten-free diet.

**This chart breaks down the basics:**

	<b>Celiac Disease</b>	<b>Wheat Allergy</b>	<b>Non-celiac gluten intolerance/sensitivity</b>
<b>What is going on in your body?</b>	Gluten protein is not completely digested causing an inflammatory response that destroys the intestine	Body has an allergic reaction, generally to one of the following: albumin, globulin, gliadin and /or gluten	Gluten or other wheat proteins trigger negative symptoms. Individual tests negatively for celiac or wheat allergy
<b>Type</b>	Autoimmune disease	Allergy	Intolerance
<b>Prevalence</b>	1%	0.4%	Unknown; possibly 0.5% to 6%

*Note: If you truly believe that your client is dealing with celiac disease, due to a genetic history or review of symptoms, send him/her for allergy testing. Do not modify gluten in his/her diet beforehand, as a gluten restricted diet may show false results.*

Why all of the sudden hype? If you're eating the typical American diet, it's likely that you're eating lots of wheat and therefore lots of gluten. As a society we eat way too many grain-based products, and wheat and gluten are also used as ingredients in many processed foods. Researchers believe that this overconsumption might be linked to the rise in gluten sensitivities. There have also been

suggestions that the actual amount of gluten in modern wheat might be higher than in the past due to cross-breeding, however the evidence here is minimal. Just remember that replacing regular grocery items with gluten free items does not improve the quality of one's diet, and does not have nutritional benefits.

Regardless, most people don't need to consider following a completely gluten-free diet. Whole grains containing gluten are an excellent source of nutrients including B vitamins that are important for metabolism and fiber which helps us feel full, controls blood sugar, and plays a crucial role in proper digestion. So if you're a fan of grains that contain gluten and you have no medical reason to avoid them, then there's no reason you should. A healthy, balanced and proportioned diet focused on lean protein, veggies and fruit, healthy fat and the least processed grains (think ancient grains!) will be naturally very low in gluten. You can feel free to keep your favorite whole grain bread in your diet (you should be eating small portions anyway!) if you don't have celiac or a sensitivity. Just make sure to cut out the processed foods from your diet like packaged crackers and highly processed grains, or other highly processed foods where gluten or wheat may be hiding.

If you think your client has a food allergy, refer to an allergist or immunologist for a proper diagnosis. This can be done through skin and blood tests. You can also use an elimination diet, which I recommend for most people (see the Elimination Diet handout). The elimination diet is a great way to discover certain foods and food additives that may be causing allergic reactions. You will eliminate any suspect foods that you think are causing reactions for four weeks. If symptoms improve, slowly add these foods back into your diet one at a time, every 3 to 4 days, to see which foods start triggering symptoms. This method is a lot safer than an oral food challenge in which you have to actually EAT the food you think you are allergic to in various doses while a professional monitors for a reaction.

### **How to Deal with Allergies**

If you suspect that your client has an allergy, the first step is getting tested. Once an allergy has been confirmed, discuss meal plans, food choices, and how to best avoid the food that your client is allergic to without sacrificing nutrients. With a food allergy, that food must be strictly avoided to avoid having an immune response to it. If it turns out to be a food intolerance and not an allergy, your client may be able to handle eating the food in small amounts, although it is still not recommended.



Learn about ingredients in foods and other products - sometimes allergens like milk or gluten can be in products that you would never even suspect! For example, traces of milk can be found in crackers, and gluten can be found in salad dressings, soups, sauces, and even play dough! Advise clients to read labels on ALL products that go into or onto your body carefully. When you have an allergy, exposure to the allergen through products like chapstick or shampoo can cause a reaction too. Advise clients to always ask about ingredients when eating at a restaurant or when eating foods prepared by others, and know go-to options when there isn't much control over choices (think in an airport and when traveling).

If the allergy is extreme, advise your client to talk with coworkers, friends and family members about it to keep the workplace, home, and social environment safe and allergen-free. If a child has an allergy, talk with daycare and school to make sure they are aware of the child's allergies and how to respond if he/she has a reaction. With severe allergies, people should carry an autoinjectable epinephrine pen to use in the case of an anaphylactic reaction. With children, make sure they know how to use it but discuss the policy for these devices with the school. For milder reactions, antihistamines may help relieve symptoms.

Allergies can be life-threatening, so if you don't feel comfortable working with these clients it is appropriate to refer out to a specialist.

Knowing the difference between allergies and intolerances and the biological systems involved in the response will help you understand which foods may need to be absolutely avoided, and which ones need to be limited or monitored. Clients can monitor tolerance of suspicious foods using a food journal. Many times symptoms occur from stress, sleep deprivation, environment or other factors. Keeping a record of all food will help you narrow down food related issues, so get to the bottom of your client's symptoms through record keeping. Make sure that if you are concerned that there is an underlying medical issue that you refer out to the advice of an allergist or physician skilled in treatment and management of food allergies and intolerances. In this case, a team approach may be the best way to manage the issues.