



Allergies and Intolerance

The way in which celiac disease, gluten intolerance and wheat allergy are defined means a great deal to the person with the gastrointestinal condition, as well as to that person's family. Fortunately, medical research has allowed us to define these entities. However, a medical professional who does not know how to diagnose celiac disease may provide an incorrect diagnosis of gluten intolerance or wheat allergy. Understanding the differences between these conditions can help to clarify an individual's diagnosis.

First, it is important to recognize that celiac disease, gluten intolerance and wheat allergy are all food intolerances. There are several classifications of food intolerances: food allergy, autoimmune-mediated, congenital digestive disorders, and metabolic diseases. Metabolic diseases, like fructose intolerance, affect 1 in 10,000 people. For our purposes, we will discuss the first three groups of food intolerances, which are far more common.

Food Allergy

Food allergies affect 5% of the population. In 20% of those cases, people with food allergies have an IgE mediated immune reaction to the trigger food. There is a blood test that can detect IgE mediated food allergies, and it's called the RAST test. Unfortunately, most people have food allergies that cannot be detected by this test. Some of these allergies are IgG mediated, which means that a celiac panel with a high anti-gliadin IgG only could indicate food allergies, given that

the individual is not IgA deficient. These types of allergies are diagnosed with a food elimination diet.

Trigger foods produce an immune response towards the particular food protein – the immune system has determined that the offending food is dangerous to the body when in fact it isn't. The symptoms that are caused by the immune response are time-limited and do not cause lasting harm to the body's tissues. (The exception is the immediate response to peanuts or other foods that produce an anaphylaxis response—where the individual can stop breathing and the allergy is life-threatening.)

Food allergies can be temporary; many children outgrow them by the age of five.

Gluten Intolerance

Gluten intolerance is an adverse food-induced reaction that does not involve the immune system. This is a reaction in the digestive tract that causes gastrointestinal symptoms. Another

example of a food intolerance of this type is lactose intolerance. Lactose intolerance is a condition that is more prominent in certain ethnic groups, and it occurs when the individual does not produce the enzyme needed to digest the sugar in milk. Symptoms that occur in lactose intolerance appear when the food protein has reached the digestive tract, and the condition produces gas, bloating and abdominal pain.

Intolerances like these are typically diagnosed with breath tests, and other diagnostic means. Because this is not an immune-mediated condition, antibody tests (measuring an immune response) would produce a negative test result.

Autoimmune-Mediated

Autoimmune disorders occur when the immune system acts to destroy the body's own tissues. The tissue damage created by an autoimmune disorder can lead to medical complications and an increased risk for other disorders.

The development of an autoimmune disorder is affected by genetics (there are two established genetic factors for celiac

disease: DQ2 and DQ8) and factors in the environment.

Celiac disease is the only autoimmune disorder where the trigger is known; remove the trigger and the autoimmune response does not occur. This means that a person with celiac disease who is following the gluten-free diet has as healthy an immune system as any average person walking down the street.

If an individual feels they may not have received a correct diagnosis, and is on a gluten-free diet, the HLA gene test for celiac disease could be helpful. This is a blood test that should be performed by a qualified laboratory, like Prometheus or Mayo Clinic. An individual has a 65% chance of not having the genes for celiac disease. If the genes are not present, a symptomatic individual could have an allergy or intolerance. If the genes are present, it is possible the individual has celiac disease.

For more information contact the University of Chicago Celiac Disease Center at 773.702.7593 or www.CeliacDisease.net.

Type of Condition	Immune System Involvement?	Genetic Risk	Permanent Tissue Damage?
Food Allergy	Yes	Yes	No
Intolerance	No	Yes*	No
Celiac Disease	Yes	Yes	Yes

*No gene has been identified in the medical literature as being responsible for the development of gluten intolerance.