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# Celiac Disease, Non-Celiac Gluten Sensitivity Or Wheat Allergy: *What is the Difference?*

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Celiac disease (CD), non-celiac gluten sensitivity (NCGS) and wheat allergy are medical conditions and, generally speaking, types of food hypersensitivities. There are many possible gastrointestinal symptoms of celiac disease and non-celiac gluten sensitivity, including cramping, diarrhea and constipation. Symptoms may also occur in other parts of the body in the form of bone or joint pain, headaches, or fatigue, to name a few. Symptoms of an allergy to wheat can include itching, hives, or anaphylaxis, a life-threatening reaction. Treatment for CD and NCGS is to remove gluten from the diet. Gluten is a protein naturally found in wheat, rye and barley, as well as in hybrids and products made from these grains. Treatment for a person with a wheat allergy is removal of all forms of wheat from the diet. People with CD, NCGS, or wheat allergy are fortunate because they don't need complicated medical treatments to get well, but they must avoid the food or foods that are problematic. Let's take a closer look at each of these types of reactions to food.

**Celiac disease** (CD) is a genetic, autoimmune disorder that occurs in reaction to the ingestion of gluten in genetically susceptible individuals. The reaction to gluten causes villous atrophy or flattening of the cells lining the small intestine, which can lead to malabsorption of nutrients with wide-reaching symptoms. There are over 300 identified symptoms of CD which can include those listed above as well as anemia, behavioral changes, stunted growth or infertility. Dermatitis herpetiformis is celiac disease that manifests as a skin rash. The rate of CD is higher among relatives of those who are diagnosed, but anyone with the genetic predisposition can develop celiac disease at any age. Currently it is estimated that about 1% of the population has celiac disease, although 83% of those people are still undiagnosed. While research continues to work towards pharmaceutical or other treatments, at this time the only treatment for celiac disease is to maintain a gluten-free diet for life.

**Non-Celiac Gluten Sensitivity** (NCGS), also called gluten sensitivity (GS), is not well defined. It is not an immunoglobulin E (IgE) (as with wheat allergy, see below) nor autoimmune reaction (as with CD, see above). There are no tests or biomarkers to identify GS. In early 2012 GS was classified by an international group of recognized celiac experts as a distinct condition from celiac disease (CD), yet it is still not well understood. Reactions can begin up to 48 hours after ingesting gluten and last for much longer. To diagnose GS, it is first necessary to rule out CD, wheat allergy or other possible causes of symptoms. Then, if improvement is seen when following a gluten-free diet, gluten sensitivity may be diagnosed. Limited studies estimate that GS may affect 2 to 6% of the population. Adherence to a gluten-free diet is the only treatment for GS at this time.

Starting the gluten-free diet without complete testing is not recommended and makes diagnosis difficult.

It is necessary to be consuming gluten in order for diagnostic tests to provide valid results.

The first step to diagnosing celiac disease or non-celiac gluten sensitivity is a panel of blood tests.

Wheat allergy is generally diagnosed through RAST or skin prick testing.

Non-celiac gluten sensitivity is diagnosed by first ruling out celiac disease, wheat allergy and other conditions which could be causing symptoms. Then, if improvement is seen on a gluten-free diet, NCGS may be diagnosed.

**Wheat allergy** is an immune reaction to any of the hundreds of proteins in wheat. When a person has a wheat allergy, one type of white blood cells, called T-cells, send out immunoglobulin E (IgE) antibodies to “attack” the wheat. At the same time, local tissues in the body send out natural chemical messengers to alert the rest of the body that there is a problem. This reaction happens very fast (within minutes to a few hours) and can involve a range of symptoms from nausea, abdominal pain, itching, swelling of the lips and tongue, to trouble breathing, or anaphylaxis (a life-threatening reaction). A person with a wheat allergy must avoid eating any form of wheat, but does not have trouble tolerating gluten from non-wheat sources. (It is possible for a person to be both allergic to wheat and have CD or GS.) In the United States, wheat is one of the eight most common foods to which people are allergic. Children who are allergic to wheat may out-grow the allergy, but adults with an allergy to wheat usually have it for life. The only treatment is a wheat-free diet.

## Do I have celiac disease, non-celiac gluten sensitivity, or wheat allergy?

- ◇ Diagnosis is key to knowing the answer to this question and being able to follow the diet that is right for you. This is also the most important reason not to start a gluten-free diet before being tested and getting a diagnosis.
- ◇ Diagnosis for celiac disease involves blood screening followed by small intestine biopsy, and reduction or elimination of symptoms when on a gluten-free diet. A patient must be consuming their regular gluten-containing diet for accurate initial diagnosis, which is usually made by a gastroenterologist.
- ◇ Non-celiac gluten sensitivity is a differential diagnosis, which involves testing for and ruling out celiac disease, wheat allergy, and other disorders which could be associated with your symptoms. After the above testing, if the removal of gluten from the diet improves symptoms, this may be diagnostic for GS. Diagnosis can be made by a gastroenterologist or primary care physician.
- ◇ Diagnosis of IgE food allergies, such as a wheat allergy, is generally done through RAST or skin prick testing and a double-blind placebo test using the allergen. This is usually completed by an allergist.

Celiac disease, non-celiac gluten sensitivity and wheat allergy are medical conditions and types of food hypersensitivities that can be treated with the appropriate diet, either elimination of gluten or wheat. Working closely with your doctor and registered dietitian will help you get an accurate diagnosis and create a diet that supports your health and wellness.

### References:

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Other helpful information is available at [www.GLUTEN.org](http://www.GLUTEN.org).

Advances in celiac disease are fast-paced. If this document is more than 2 years old, please visit our website for updated documents.

This information should not be used to diagnose or treat gluten-related disorders or other medical conditions. For questions about these conditions consult your healthcare team when considering this information.

Please consider your local GIG Branch as another resource.

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The Mission of the Gluten Intolerance Group is to empower the gluten-free community through consumer support, advocacy and education.

To make a donation or become a volunteer to GIG, visit our website or call the office at 253-833-6655.