

What is Gluten?

Gluten is found in the proteins of certain grains such as rye, barley and other grains that are processed in the same mill².

What foods contain gluten?

Foods that naturally contain gluten are wheat, rye and barley. Additional foods may have been cross contaminated with wheat and thus should be avoided (unless stated gluten-free) are oats, malt, brewer's yeast, modified food starch, dextrin, and starch.

Gluten-free grains:

Quinoa	Millet
Gluten-free oats	Sorghum
Teff	Corn
Rice	

Treatment for all types of reactions to gluten is to maintain a strict gluten-free diet.



References:

1. Elli L, Roncoroni L, Bardella MT. Non-celiac gluten sensitivity: Time for sifting the grain. World J Gastroenterol. 2015;21(27):8221-8226. doi:10.3748/wjg.v21.i27.8221
2. Elli L, Branchi F, Tomba C, et al. Diagnosis of gluten related disorders: Celiac disease, wheat allergy and non-celiac gluten sensitivity. World J Gastroenterol. 2015;21(23):7110-7119. doi:10.3748/wjg.v21.i23.7110
3. Igbinedion SO, Ansari J, Vasikaran A, et al. Non-celiac gluten sensitivity: All wheat attack is not celiac. World J Gastroenterol. 2017;23(40):7201-7210. doi:10.3748/wjg.v23.i40.7201

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WHAT IS THE STORY WITH



GLUTEN?

THE MAIN TYPES OF REACTIONS TO GLUTEN IN ADULTS

Wheat or Gluten Allergy

Celiac Disease

Non-Celiac Gluten Sensitivity
(NCGS) or Gluten sensitivity

Wheat / Gluten Allergy

Wheat allergy (WA) affects 4% of the U.S. population¹. In adults, it is identified as occupational bakers asthma and rhinitis (inflammation or irritation in the nose). This allergic reaction is common in bakers who react to wheat flour by breathing it².



Common symptoms

Most common symptoms are diarrhea and bloating; other symptoms are skin problems and inflammation².

Test to confirm this diagnosis

Skin prick test (SPT) or IgE test can be performed; however, the results are not be reliable because the wheat extracts may lack the allergenic proteins². Another test that can be done in conjunction with SPT or IgE is an oral food challenge; This should be performed in a clinical setting (due to the high risk)². The patient will eat the triggering food and if symptoms arise and support the laboratory test then it concludes the wheat allergy².

Celiac Disease

Celiac disease is an autoimmune disease affecting about 0.5-1% of the U.S. population¹. The consumption of gluten in predispose individuals with the genetic triggers (HLA DQ2 or DQ8) can lead to damage in the small intestine and deteriorate the villi leading to malabsorption².



Common symptoms

Common symptoms are: diarrhea, weight loss, malnutrition (iron, vitamin B12, calcium), and less often are: skin rashes, infertility, and chronic fatigue^{1,2}. Additional, symptoms may arise due to malnutrition; or other times no symptoms are immediately noticeable.

Test to confirm this diagnosis

If the patient is consuming gluten the recommended test is the anti-transglutaminase IgA antibody (TTG) test². However, if they have been maintaining a gluten free diet and are not willing to eat gluten then genetic testing for HLA (DQ2/8) is recommended². Another type of test is a bowel biopsy to confirm damage in the small intestine.

Non-Celiac Gluten Sensitivity (NCGS) or Gluten sensitivity

Gluten sensitivity affects 0.6-6% of the U.S. population. This is not an allergic reaction or an autoimmune condition; however symptoms can be similar to CD³. In these patients, gluten and gliadin appear to be toxic and cause intestinal damage and/or change the cell structure¹.



Common symptoms

Symptoms appear after the consumption of gluten and disappear when it is avoided¹. The most common symptoms are bloating, abdominal pain, and alternating bowel's as diarrhea or constipation¹. Other related symptoms that are common with epigastric pain are as follows: nausea, aerophagia (belching, flatulence), acid reflux, and mouth sores¹. Furthermore, brain symptoms may show up as: tiredness, lack of well-being, headaches, anxiety, foggy mind, arm/leg numbness and depression¹.

Test to confirm this diagnosis

First step, for NCGS is to rule out CD and wheat allergy¹. If those test are negative, the next test recommended is an elimination diet of a strict gluten-free dietary regimen; followed by slowly re-introducing low gluten containing foods¹. If symptoms do appear, during the introduction phase this would conclude a gluten sensitivity.