



# Celiac, Non-Celiac Gluten-Sensitivity, Gluten-Free Diets

## Overview

Celiac disease is a common autoimmune condition that affects about 1% of people. It affects the lining of the small intestine (the duodenum) and presents in people who have the genes for celiac disease and who eat foods that contain gluten. Gluten is a protein that is found in wheat, barley, and rye. When people with celiac disease eat gluten, they develop irritation in the gut that can cause problems with digestion and not absorb nutrients well. The only effective treatment for celiac disease is completely avoiding all gluten in food (a strict gluten-free diet).

A separate problem is Non-Celiac Gluten Sensitivity (also known as Non-Celiac Wheat Intolerance) where people can develop digestive symptoms after eating foods that may contain gluten. They do not have any blood tests or tissue tests that indicate celiac disease. They do not have classic allergic symptoms to wheat (i.e. skin reactions or trouble breathing). Some people with Non-Celiac Gluten Sensitivity will feel better by avoiding gluten (or wheat) containing foods.

## Symptoms

Celiac disease can have many different intestinal symptoms, including diarrhea, belly pain, and bloating (feeling of fullness). Additionally, it can cause weight loss, low blood count (anemia), low iron levels (iron deficiency), fatigue (feeling tired), weak bones (osteopenia or osteoporosis), and neurologic symptoms like headaches or trouble with balance (ataxia).

People with Non-Celiac Gluten sensitivity can have similar symptoms including diarrhea, bloating, abdominal pain, and fatigue that worsens when eating foods that contain gluten. However, these patients are less likely to have nutrient deficiencies found on blood testing or weak bones or neurologic symptoms.

## Diagnosis

In adults, celiac disease is diagnosed by a combination of clinical history, blood tests, and an endoscopy with intestinal biopsy. Patients who have signs and symptoms of celiac disease should see their doctor to have the blood test for celiac disease. There are certain antibodies that the body makes as a reaction to gluten that can be detected in the blood. Some of the common blood tests include Tissue Transglutaminase (tTG) IgA and IgG, Deamidated Gliadin Peptide (DGP) IgA and IgG, and anti-Endomysial antibody IgA.

If this bloodwork is abnormal in someone who has symptoms of celiac disease, the next step is to see a gastroenterologist (GI doctor) to have an esophagogastroduodenoscopy (EGD), also called an upper endoscopy, to check the small intestine with a camera scope and take biopsies of the small intestine to confirm the diagnosis. This test is usually performed with medications to ensure comfort while the doctor does the endoscopy.

It is important to actually eat gluten regularly while testing for celiac disease (this is the equivalent of 2 slices of wheat bread a day for 2-6 weeks). If a gluten-free diet was started before celiac disease is confirmed, the test could come back with a "false negative," meaning that someone could have celiac disease, but the test does not show it.

There is no test to check for Non-Celiac Gluten Sensitivity; it is diagnosed by a doctor who considers the signs and symptoms, negative celiac disease testing, and improvement after a gluten-free diet.

## Treatment

The only effective treatment for celiac disease is a lifelong strict gluten-free diet. This means that people with celiac disease will have to avoid any foods that contain wheat, barley, or rye and consider hidden sources of gluten outside of what you eat (lip balm, some medications, etc.). A gluten-free diet is best started under the supervision of a registered dietician. Once the diet is started, patients will start to feel better within several weeks to months and their blood tests should normalize after six months. If any nutrient deficiencies were found on blood tests, vitamins may be needed. Would it be helpful to give a gluten free diet handout or refer them to a site?

Other therapies are being investigated for celiac disease, but none have been shown to be as helpful as the gluten-free diet. This is an active area of research, and more therapies may be available in the future.

Similarly, people with Non-Celiac Gluten Sensitivity feel better after avoiding foods that may contain gluten. Interestingly, research has shown that it may not just be gluten, but also certain sugars (carbohydrates) called FODMAPs. FODMAPs may be found in the same foods that contain gluten and actually be the culprit for causing symptoms in people with Non-Celiac Gluten Sensitivity.

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