

Gluten Free

What are the components of a gluten-free diet?

A gluten-free diet contains no wheat, rye or barley, or any foods made from these grains, such as most pasta, cereal and many processed foods. People with celiac disease can use potato, rice, soy, amaranth, quinoa, buckwheat, or bean flour instead of wheat flour. Pure oats can be tolerated by a majority of people with celiac disease, but should initially be avoided and perhaps carefully introduced later with close monitoring. Gluten-free bread, pasta and other products are becoming increasingly more available from specialty food companies as well as from regular stores.

Hidden sources of gluten include additives such as modified food starch, preservatives and stabilizers or thickeners. Checking labels for the "gluten-free" notice is important. Gluten may be used in some medications and a person with celiac disease should check with the pharmacist to learn which medicines contain gluten.

"Plain" fish, meats, rice, fruits, and vegetables contain no gluten, so people with celiac disease can eat as much of these foods as they wish. Distilled alcoholic beverages and wine are gluten free. However, beers, ales and lagers are made from gluten containing grains and are not distilled so should be avoided.

The gluten-free diet is very challenging and requires a completely new approach to eating. Advice and support from the doctor, dietitian and celiac support groups are helpful for most persons with this disease.

Celiac Disease Key Points

- Celiac disease is an autoimmune digestive disease that damages the small intestine and interferes with nutrient absorption.
- People with celiac disease cannot tolerate gluten, a protein in wheat, rye, barley, and possibly oats.
- A person with celiac disease may or may not have symptoms, which often include diarrhea, abdominal pain and bloating, fatigue, and anemia.
- Celiac disease is treated by eliminating all gluten from the diet. The gluten-free diet is a life-long requirement.
- Without treatment, people with celiac disease can develop complications like malnutrition, anemia, osteoporosis, infertility, seizures, and cancer.
- Diagnosis involves blood tests and a biopsy of the small intestine obtained during an upper endoscopy.
- Celiac disease is an inherited condition; therefore family members of a person with celiac disease may wish to be tested.
- A dietitian in conjunction with a gastroenterologist can give detailed guidance and information about food selection, label reading and other strategies to help manage the disease.

What is celiac disease?

Celiac disease (also called celiac sprue or gluten-sensitive enteropathy) is a digestive disease that damages the small intestine and interferes with absorption of nutrients from food. People who have celiac disease cannot tolerate a protein called gluten, found in wheat, rye and barley.

When people with celiac disease eat foods containing gluten, their immune systems respond by damaging the small intestine. This injury occurs to tiny fingerlike protrusions, called villi, which line the small intestine, and are critical in allowing absorption of nutrients and preventing malnutrition.

Because the body's own immune system causes the damage, celiac disease is considered an autoimmune disorder. However, it is also classified as a disease of malabsorption because nutrients are not absorbed, as well as a genetic disease, meaning it runs in families.

Celiac disease is relatively common in the U.S. occurring in approximately 1 in 133 persons, and affecting nearly 2 million people in this country. Among people with first degree relatives (parent, sibling or child) with celiac disease, as many as 1 in 22 people may have the disease. It is most common in Caucasians of northern European ancestry, however it has been increasingly recognized in other areas of the world such as Asia, South America and Africa.

What are the symptoms of celiac disease?

Celiac disease affects people in different ways. Young children most often show growth failure, weight loss, diarrhea, constipation or abdominal distension. The most common symptoms in adults include weight loss, chronic diarrhea, abdominal cramping, bloating and gas, muscle wasting, weakness, and fatigue.

Less commonly, people with celiac disease have joint pain, osteoporosis or osteopenia (low bone mass before osteoporosis), anemia (from impaired iron absorption), leg numbness (from nerve damage), muscle cramps (from impaired calcium absorption), aphthous ulcers (sores in the mouth from vitamin deficiency), seizures, infertility, or behavioral changes.

In a limited number of people with celiac disease, a gluten related skin disorder, called dermatitis herpetiformis, appears as small itchy blisters on the skin surface, typically on body pressure points such as the elbows, knees, and feet.

A significant proportion of people with celiac disease have little or no symptoms, however those persons are still at risk for complications of celiac disease, including malnutrition.

What causes such varied symptoms?

All of the clinical manifestations of celiac disease are caused by the inability of the damaged small intestine to absorb nutrients normally. The wide variation in symptoms is attributable to a number of factors only some of which are known and include the age at which a child or individual begins eating gluten products and the amount of gluten containing foods a person ingests. The amount of intestinal damage is also a significant factor.

How is the diagnosis of celiac disease made?

The symptoms of celiac disease can be easily confused with those of other diseases such as irritable bowel syndrome, chronic fatigue syndrome, inflammatory bowel disease, or intestinal infections. As a result, celiac disease is often under diagnosed or misdiagnosed. In addition, it is being increasingly recognized that some people have wheat allergies or sensitivity (non-celiac gluten sensitivity) with symptoms when wheat or wheat products are ingested, but without actual celiac disease. While non-celiac gluten sensitivity is not well characterized, people with it do not seem to have risk of malnutrition, other autoimmune disorders, hereditary risk or other complications of celiac disease. A gastroenterologist can help diagnose celiac disease and differentiate it from the other diseases above.

In recent years, autoantibodies, or proteins that react against the body's own tissues, have been discovered in the blood of persons with celiac disease. These antibodies serve as markers for celiac disease and blood tests for these antibodies can be done to help diagnose celiac disease. The levels of these antibodies are abnormal in individuals with celiac disease who are ingesting foods containing gluten. Therefore, if someone has started a gluten free diet, these tests may not be accurate. The best test is an IgA TTG (Immunoglobulin A anti-tissue transglutaminase). Other blood tests might include a total IgA, IgG TTG (Immunoglobulin G anti-tissue transglutaminase) or IgG DGP (Immunoglobulin G deaminated gliadin peptide). If the blood tests and the person's symptoms suggest celiac disease, the gastroenterologist will perform an upper endoscopy with biopsy of the small intestine. This involves placing an endoscope (long thin flexible tube) through the mouth and

stomach into the small intestine, from which a tiny sample of the intestinal lining can be taken. The intestinal biopsy showing a damaged, flat surface is often called the "gold standard" for diagnosing celiac disease.

Screening for celiac disease in relatives of affected people is not often done in the United States. However, family members of people with celiac disease who wish to be tested may have blood tests done to check for autoantibodies. Approximately 5 percent of first degree relatives (parents, siblings, children) of an affected person will also have the disease.

An adjunctive technology in the diagnosis of celiac disease is small bowel capsule endoscopy. This procedure involves the ingestion of a camera encapsulated in a 1-inch pill which can take more than 50,000 digital images of the small bowel. Although not needed for the diagnosis in most cases, it may be useful when patients are unable to have upper endoscopy or in cases of complicated celiac disease. Capsule endoscopy pictures may show a deeply scalloped or furrowed lining of the small bowel or crevices. These pictures can also show complications of celiac disease involving the small intestine such as ulcerations and cancer.

What is the treatment of celiac disease?

The only treatment for celiac disease is life-long adherence to a gluten-free diet. When gluten is removed from the diet, symptoms improve, the small intestine begins to repair the existing damage and further damage is prevented. Improvements begin within a few days of starting the diet and an adult's intestine is usually healed within 2 years. Reintroduction of gluten into the diet, even in small quantities, may damage the small intestine again. People with newly diagnosed celiac disease should be tested and treated for nutrient deficiencies including: iron, folic acid, vitamin D and vitamin B12. In addition, because of possible Vitamin D deficiency, a bone density scan should be obtained to evaluate for bone loss.

When first diagnosed with the disease, a person often consults with a dietitian (health care professional who specializes in food and nutrition) who can help the person learn how to identify foods which contain gluten. Dietitians may help people with celiac disease plan meals and make informed decisions when grocery shopping.

Some people have unresponsive celiac disease, which means that they show no improvement on a strict gluten free diet. This may mean that there are small amounts of hidden gluten still present in the diet. In rare cases, the intestinal injury is so severe that it cannot heal. Persons with this condition may need to receive nutrition intravenously (directly into the bloodstream through a vein). Other medications, such as steroids, may help heal the damaged mucosa in people who do not respond to dietary changes. Patients with unresponsive celiac disease should be referred to a gastroenterologist for further evaluation and management.

What are the complications associated with celiac disease?

Damage to the small intestine and the resulting nutrient absorption put people with celiac disease at risk for malnutrition and anemia. Other less common associated risks include: Osteoporosis, a condition in which bones become brittle and are at risk for fracture; menstrual and reproductive issues including miscarriage and infertility; short stature, which can occur when childhood celiac disease prevents nutrient absorption; seizures; and cancers such as lymphoma and adenocarcinoma of the small intestine.

In addition, people with celiac disease may often have other autoimmune diseases such as thyroid disease, systemic lupus erythematosus (SLE), Type I diabetes, inflammatory bowel disease, rheumatoid arthritis, Sjogren's syndrome, or collagen vascular diseases. These diseases may require additional testing.

Source: The American Society for Gastrointestinal Endoscopy (ASGE)

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