



Russell O. Schub, D.O., FACP
Board Certified Gastroenterologist

Dr. Russell O. Schub, P.A.
8875 Centre Park Drive
Suite D
Columbia, MD 21045

Tel 410-730-1000
Fax 410-730-2266
www.drschub.com

Understanding Celiac Disease, Gluten Sensitivity, and Wheat Allergy

Celiac Disease

Celiac disease is a condition affecting both adults and children in which the body's immune system responds abnormally to a protein called gluten, which is found in wheat, rye, barley, and many prepared foods. Individuals with celiac disease who eat gluten experience an immune reaction which can cause damage to the lining of the small intestine. This in turn can lead to difficulty absorbing essential nutrients such as iron and Vitamin D. Treatment of the disease consists of avoiding gluten, which can stop and reverse the damage to the intestinal lining. There is no other known cure for celiac disease. Celiac disease is **not** a food allergy but an autoimmune disease.

The cause of celiac disease is unknown. It tends to occur more prominently in individuals from Europe, North and South America, Australia, North Africa, the Middle East and South Asia. It is found rarely in other parts of Asia or sub-Saharan Africa. In the United States one out of every 133 people has celiac disease. There is a genetic component to the disease - it occurs in 5-15% of the children and siblings of individuals already diagnosed with the disorder. It is recommended that first degree family members be tested even if they do not have symptoms.

The symptoms of celiac disease are variable, and in some cases, may be absent. Even if an individual has no symptoms he or she may still have the disease and it could be causing problems with nutrient absorption. Possible symptoms of celiac disease include diarrhea, weight loss, abdominal pain, abdominal bloating, and increased intestinal gas. Other conditions that tend to occur more commonly in people with celiac disease include weakening of the bones (osteopenia or osteoporosis), low blood counts from absence of iron (iron deficiency anemia), diabetes, thyroid disease, Down syndrome, liver disease, and a skin disease known as dermatitis herpetiformis which causes blistering and itchy skin. Celiac disease can occur at any point in an individual's life.

For screening purposes, blood tests checking for antibodies to gluten are available. It is important not to begin a gluten free diet prior to the testing as this can affect the results. If the blood test is positive then an upper endoscopy is usually recommended, during which a digestive doctor will insert a flexible scope with a camera through the mouth and examine the intestinal lining and remove a sample for analysis. This procedure is painless and is done at an outpatient center.

Treatment of celiac disease consists of 100% elimination of gluten from the diet. Oftentimes, individuals with celiac disease find they feel more energetic once they begin following a gluten free diet even if they were not symptomatic prior to the diagnosis. General guidelines include avoidance of foods containing wheat, rye,

barley, malt, brewer's yeast and sometimes oats. It is important to read food labels and learn possible hidden sources of gluten. If you have been diagnosed with celiac disease it is recommended that you work with a dietitian to ensure you are eating a well balanced diet. Gluten free foods are now widely available both in stores and online. If celiac disease is left untreated it can increase the risk of developing certain gastrointestinal cancers.

Gluten Sensitivity

Gluten sensitivity refers to the distress which occurs in some individuals when eating products containing gluten. These individuals then experience improvement when following a gluten free diet. Unlike celiac disease, gluten sensitivity is not an autoimmune disorder. It does not cause damage to the small intestine, or elevated antibody levels in the blood. It is also not an allergic reaction. Gluten sensitivity can cause symptoms that are similar to celiac disease, such as abdominal discomfort and bloating. Currently there is no objective diagnostic test for gluten sensitivity. The diagnosis is often one of exclusion, in which other disorders are systematically ruled out. An elimination diet is also used, followed by the reintroduction of gluten containing foods to assess if health improves with the absence of gluten from the diet.

Wheat Allergy

A wheat allergy is an allergic reaction to foods containing wheat. Allergies are an immune response to a normally harmless substance. When an individual with a wheat allergy ingests wheat their body produces an antibody which attacks the substance. As part of this process histamine is released, which triggers an inflammatory response. Allergic reactions can range in severity from anaphylactic shock and difficulty breathing to itching, swelling, rash, nasal congestion, diarrhea, and abdominal cramping. A wheat allergy is different from celiac disease in that in celiac disease one particular protein in wheat, i.e., gluten (also found in barley and rye), causes an abnormal immune response with leads to damage of the small intestine. Individuals with wheat allergies usually do not need to avoid other grains. Children with a wheat allergy often outgrow the allergy, while children with celiac disease do not outgrow the disease. Wheat allergies are generally treated by avoidance of wheat. Medications may also be used to manage the allergic reaction if wheat is ingested by mistake.

Resources:

Celiac Disease Foundation. <http://www.celiac.org/>.

Sapone et al.: Divergence of gut permeability and mucosal immune gene expression in two gluten-associated conditions: celiac disease and gluten sensitivity. *BMC Medicine* 2011, 9:23.

Schuppan, D. & Dieterich, W. Pathogenesis, epidemiology, and clinical manifestations of celiac disease in adults. In: UpToDate, Basow, DS (Ed), UpToDate, Waltham, MA, 2011.

Sicherer, SH. Food allergens: Overview of clinical features and cross-reactivity. In: UpToDate, Basow, DS (Ed), UpToDate, Waltham, MA, 2011.