

## FACTS ABOUT



# Gluten and Health: The Connection Between Gut Health, Food Sensitivities and Allergies

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Recently, wheat, and the proteins it contains especially gluten, have received intense attention from the media and consumers. There are several reasons for this. First, the incidence of celiac disease and awareness of it are increasing. Second, gluten sensitivity has been newly identified as a concern affecting a small percentage of people. Third, a rise in the incidence of asthma and all allergies, including those to wheat, has been suggested. The reasons for the changes in incidence are not clear, but they have become the subject of much research and many theories. It appears that a complex interaction of genetic, gastrointestinal, environmental and dietary issues may be contributing to the observed increases. Outlined below are some of the key factors involved with reactions to wheat, gluten and other wheat proteins, and the potential health effects that might result.

### *Good Digestion, Gut Health, and Food Allergies*

- Good digestion or gut health is the ability to eat and break down food with no discomfort at any point in the process from chewing and swallowing all the way through elimination (e.g., bowel movement). Food intolerances, sensitivities and allergies can cause or be symptoms of faulty digestive health. Symptoms may include stomach ulcers, heartburn (reflux), bloating, diarrhea, excessive gas, cramping or other intestinal pain, and constipation. Left unresolved, some of these conditions can lead to bacterial overgrowth in the gut, chronic inflammation, gastric or intestinal damage and, in the case of allergy, even death due to anaphylactic shock.

- While more than 20% of people report having food allergies, the actual prevalence is estimated to be 3-4%.

### *Impaired Protein Digestion, Antacids and Food Allergies*

- When the gut is working properly, proteins (from all foods including those in wheat), are broken down from large molecules into much smaller pieces, called peptides, by the stomach's extremely acidic hydrochloric acid. Stomach acid is reduced by treatment with antacid medications for ulcers or heartburn (reflux), but can also decrease due to advancing age or illness. When stomach acid is not strong enough, proteins are not digested properly and large proteins or peptides can move from the stomach into the small intestine.

- These proteins and peptides have the potential of interacting with some of the immune-sensitive tissues lining the gut or slipping across gut tissues and initiating reactions in a sensitive person resulting in allergic response.

- Proper stomach pH is not only required for protein digestion, but also helps prevent the risk of intestinal infections and bacterial over-growth. Antacids have been linked to bacterial overgrowth along the gastrointestinal (GI) tract. This can cause a condition known as a 'leaky gut.' Thus, pieces of intact proteins can enter the bloodstream through the 'leaky gut' enabling them to trigger an antigen-antibody response.



- There are many types of bacteria living in the intestines and friendly bacteria can be very helpful for digestion, nutrient absorption and overall health. However, if the balance between friendly and food-borne or other problematic bacteria is upset, digestive disturbances can occur. This can result in discomfort or illness that ranges from mild to extreme. The imbalance may also set up conditions that weaken the intestinal barrier allowing proteins and other compounds to enter the body, setting the stage for allergies, autoimmune disorders, and inflammatory disease.

### *Gluten-Free: Cure-All or Band Aid?*

- There are currently three recognized categories of gluten-related disorders: celiac disease, wheat allergy, and gluten sensitivity. Celiac disease, also known as gluten intolerance, is an autoimmune disorder that occurs in certain genetically susceptible people. It is characterized by changes in the intestinal wall, which can impair the absorption of all nutrients. It can cause GI disturbances and affect many systems in the body. It affects around 1 percent of the people in the U.S. Wheat allergy, an allergic response to proteins in wheat, can affect the skin, gastrointestinal or respiratory tract. It affects well under 1% of the people in the U.S. Gluten sensitivity, which is thought not to be either an allergy or an autoimmune disease, does not have a documented incidence but may affect as 4- 6% of people with symptoms that include abdominal pain, eczema or rash, headache, foggy mind, and fatigue.

- A gluten-free diet is essential for those who have true wheat allergies or celiac disease; however, it is not clear whether those who are gluten-sensitive must temporarily or permanently remove wheat and other gluten-containing grains from their diets.

- For people with gluten sensitivity, the true issue may be one of gut “leakiness.” Many factors including gliadin (one of the gluten proteins) have been implicated in increasing gut “leakiness.” However, bacterial overgrowth of certain gut microflora, food components such as spices, and even stress have also been shown to affect gut leakiness.

- If the gut becomes inflamed from bacterial overgrowth or food sensitivities, it must be allowed to heal using dietary and pharmacologic measures (e.g., antibiotics, probiotics) and lifestyle factors (stress reduction, exercise) to help restore the gut microflora and stop the inflammatory process. The major strategy for those with celiac is to make certain that a gluten-free diet is strictly followed. In some individuals, it may take quite some time for the inflammatory conditions to subside and the gut to heal. Even the slightest dietary ‘slip’ (e.g. accidental ingestion of gluten) may slow gut healing. For those with bacterial overgrowth, probiotics to improve bacterial balance or removal of other dietary components such as lactose may be helpful. It is not known whether those with gluten sensitivity can reintroduce gluten once the bacterial overgrowth is resolved and the gut is healed.

Food intolerances, sensitivities and allergies can reduce quality of life and may even pose serious health risks. If you suspect you have any of these conditions, please work with your healthcare provider and registered dietitian who can accurately diagnose, treat and manage these conditions.