

Understanding Gluten Sensitivity

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What is gluten?

Gluten is a protein found in the following grains: wheat, oats, rye, barley, spelt, kamut, couscous, amaranth, teff, quinoa and triticale. If you are sensitive to gluten, the component of the gluten that causes the reaction is a protein structure called gliadin. Gliadin (refer diagram below) is the substance found in gluten that induces inflammation in individuals that are sensitive.

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What is gluten sensitivity?

Gluten sensitivity is a condition that results from a person's body being unable to properly digest the gliadin protein. People without gluten sensitivity can digest and break down gliadin into very small particles and those small particles can then be easily absorbed by the small intestine and used by the body as a nutritional source.

Those people who are gluten sensitive cannot break down the gliadin protein molecule into small enough particles. The undigested gluten protein gets absorbed into the first layer of the membranes of the small intestine. But because the food is not fully digested the body's immune systems sees these protein particles as something it needs to attack and destroy, in very much the same way the immune system would attack an invading organism such as a virus, bacteria or parasite. The attack by the immune system is what causes the problems because the surrounding tissue of the small intestine can become severely damaged. It results in two significant problems in the small intestine:

1. The surface area of the small intestine is reduced and the tissue becomes very unhealthy. This results in a condition called malabsorption, which means that the small intestine can no longer properly absorb foods and essential vitamins and minerals.
2. The attack of the immune system directly affects the surface membrane of the small intestine and essentially creates large gaps in the membranes resulting in the membranes becoming permeable to large size proteins. These proteins would not be passing through a healthy small intestine. One of the biggest problems for gluten sensitive individuals is that this permeable membrane will allow the large undigested gluten molecules to

enter the blood stream. These gluten molecules can then travel through the bloodstream and adhere to tissues distant from the small intestine and create damage to those tissues. This occurs because the immune system is actively fighting gluten molecules wherever it finds them. This phenomenon explains why gluten sensitivity can create problems throughout the body and may in fact create many symptoms in other parts of the body in addition to or other than the small intestine.

What conditions can be caused by gluten sensitivity?

Gluten sensitivity can create a broad range of symptoms and conditions. One of the most serious of these is a condition called celiac disease. However, gluten sensitivity can create many other serious problems.

Below is a list of symptoms and conditions that have been documented to be associated with gluten sensitivity.

Possible Symptoms and Conditions of Gluten Sensitivity:

1. Craving for wheat or inability to stop eating wheat
2. Allergies, asthma
3. Sinus congestion, post-nasal drip
4. Joint and muscle aches
5. Diarrhea and/or constipation
6. Gas, bloating, abdominal pain
7. Psoriasis, eczema or unexplained rash
8. Depression, hyperactivity or mood-swings
9. Unexplained fatigue
10. Frequent canker sores
11. Iron-deficiency anemia
12. Short stature
13. Ear-aches
14. Headaches

How is gluten sensitivity treated?

The primary treatment for gluten sensitivity is to completely avoid all foods that contain gluten. This also includes avoiding other items such as nutritional supplements and/or medication that contains gluten. Wheat is by far the most common source of gluten.

Testing for gluten sensitivity

There are multiple methods used to test for gluten sensitivity. If any one of the testing methods below shows a positive reaction to gluten then you need to consider yourself gluten sensitive.

1. Saliva IgG antibodies to gliadin. (IgG and IgM are specific types of antibodies. Antibodies are special proteins made by blood cells to protect the body against dangerous substances or organisms).
2. Saliva IgM antibodies to gliadin.
3. Serum IgG anti-gliadin antibodies.
4. Serum IgM anti-gliadin antibodies.
5. Serum anti-transglutaminase (this test is a specific test for a serious condition resulting from gluten sensitivity called Celiac Disease).
6. Elimination Diet – if you eliminate gluten out of your diet and your symptoms improve.

7. **Provocation Response to Reintroduction of Gluten**– After eliminating gluten from your diet for at least a week, then reintroduce gluten into the diet. If the reintroduction of gluten provokes either immediate symptoms or delayed symptoms within the next 72 hours, then it is likely you are sensitive to gluten.

Are there supplements I need to take?

Gluten sensitivity decreases absorption of several key nutrients including zinc, vitamin D, magnesium and vitamin K. It may be important to include these nutrients in a supplementation program.

It may also be important to initially take supplements such as L-glutamine to repair the small intestine and to use digestive enzymes to assist in the process of digesting foods.

Absorption of Vitamin B-12 is also usually compromised with gluten sensitivity and sometimes is best addressed through the use of Vitamin B-12 injections rather than through the use of oral Vitamin B-12 supplements.

The good news!

Your small intestine can return to being completely normal after being off gluten. The return to normalcy can occur in as little as 6 to 12 months, depending on your age. Almost all negative effects from eating gluten will disappear when on a gluten-free diet.

The bad news - Gluten sensitivity doesn't go away

Eliminating gluten from your diet will not cause your body to become less sensitive to gluten. All the current research shows that the reaction to gluten is caused by a genetic inability to produce the enzyme that digests the gliadin protein. The sensitivity does not lessen or disappear over time because of the removal of gluten from your diet. This varies from other allergies because the sensitivity to most other foods does diminish after being off the offending food for some time. Therefore, it is highly recommended that a person with gluten sensitivity stay off gluten indefinitely.

After being off gluten-containing foods for a while one thing that can change is the reaction a person experiences to eating gluten. The reaction can diminish and the symptoms a person feels could be dramatically reduced when eating gluten. However, both research and clinical experience has determined that the reaction to gluten is still occurring and it could be weeks or months after returning to a gluten-containing diet before any negative changes in the person's health is observed. But eventually, it will occur.

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