Dynamic Chiropractic

NUTRITION / DETOXIFICATION

An Education in Gluten Sensitivity

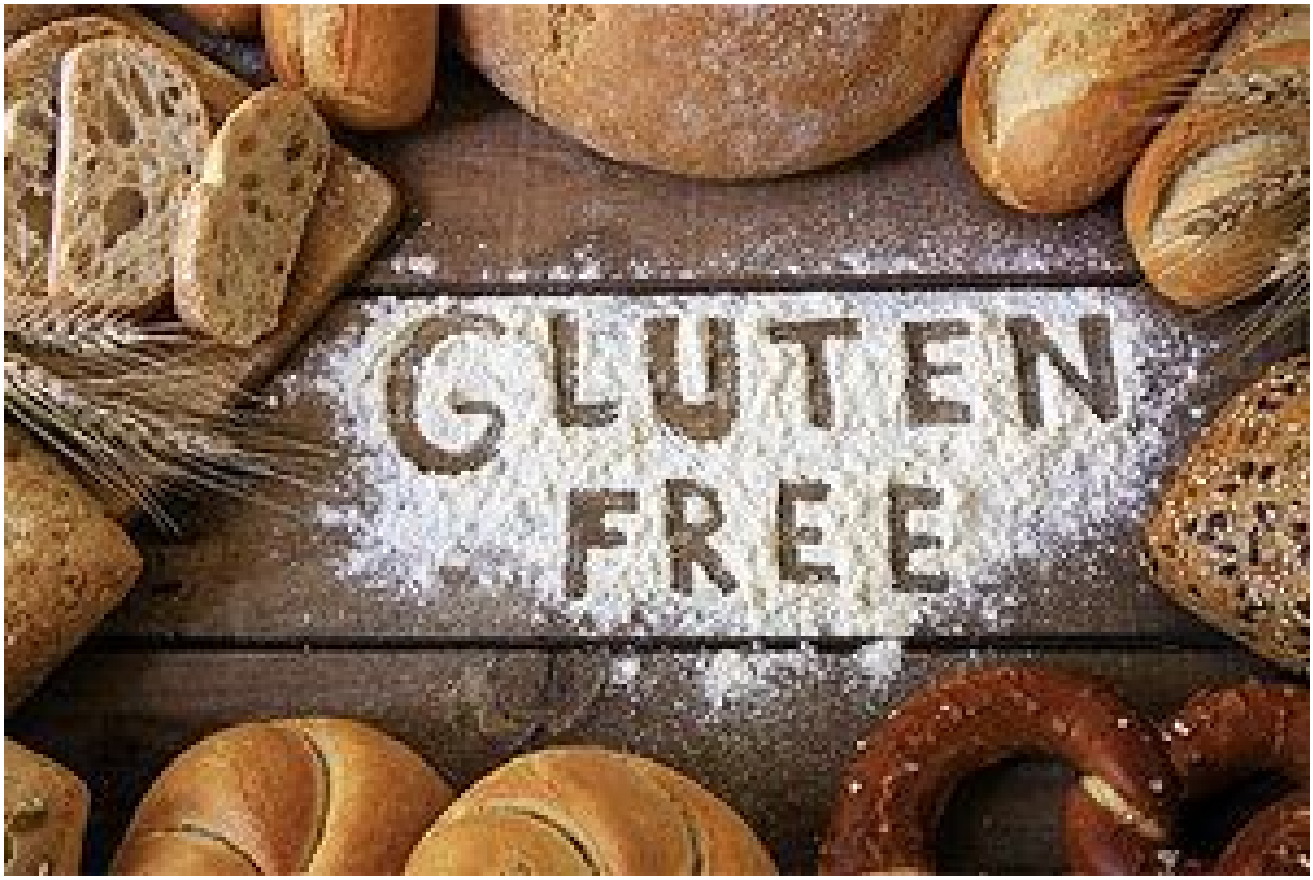
James P. Meschino, DC, MS

A relatively new syndrome officially documented as non-celiac gluten sensitivity (NCGS) or gluten sensitivity (GS) was officially recognized and published in the new list of gluten-related disorders in 2012. Prior to 2012, only patients with positive blood tests and/or a biopsy for celiac disease were considered to have a problem with gluten consumption with respect to adverse health outcomes and intestinal symptoms. However, in 2012 medical authorities officially recognized that certain individuals could have adverse health effects from gluten ingestion, even though blood tests and biopsy results show a negative result for celiac disease, and no discernible damage to the intestinal tract can be found.

The published data suggests non-celiac gluten sensitivity / gluten sensitivity is extremely common in people who also have irritable bowel syndrome (IBS), and it may exacerbate or trigger symptoms in some patients with schizophrenia or autism spectrum disorder.[1] Improved digestion associated with a gluten-free lifestyle also may relieve symptoms associated with other intestinal disorders such as lactose intolerance.[2]

Researchers suggest approximately 6 percent of the population (possibly as high as 13 percent) may have non-celiac gluten sensitivity, whereas less than 1 percent (0.71 percent) of the U.S. population is estimated to have true celiac disease.[1,3]

Characteristic Symptoms



In the absence of positive tests for celiac disease (blood tests or intestinal biopsy) or other known intestinal pathologies, non-celiac gluten sensitivity should be suspected in patients with any combination of the following symptoms:

- Abdominal pain
- Chronic diarrhea
- Cramps
- Bloating
- Fatigue
- Joint pain

If these symptoms are present, it may be wise for the patient to try a gluten-free diet to see if their symptoms improve. The same is true for patients with IBS, schizophrenia or autism spectrum disorder. The typical constellation of symptoms in a patient with non-celiac gluten sensitivity includes a combination of IBS-like symptoms, as well as systemic manifestations such as headache, joint and muscle pain, muscle contractions, leg or arm numbness. The patient may also experience chronic fatigue, "foggy mind," body mass loss or anemia; and/or show disturbances in attention or depression in conjunction with IBS-like symptoms.

IBS-like symptoms include abdominal pain (68 percent) nausea, bloating, flatulence, diarrhea (33 percent) or constipation. In children, non-celiac gluten sensitivity usually involves intestinal symptoms (abdominal pain and chronic diarrhea), whereas the extra-intestinal manifestations seem to be less frequent. In children, the most common extra-intestinal symptom is chronic tiredness.

Differential Diagnosis

Regarding differential diagnosis, IBS patients who respond well to a gluten-free diet can be considered to suffer from one of the three possible conditions: celiac disease, wheat allergy or non-celiac gluten sensitivity (the last of which is the most frequently encountered). The presence of IgA-tTG and -EMA and the atrophy of duodenal villi (Marsh III and IV) provide a celiac disease diagnosis in patients without IgA deficiency.

The positive skin prick test for wheat allergy (the sIgE exhibiting a positive wheat extract challenge locally on the skin) and minimal histological lesions (Marsh 0,1) confirm the presence of wheat allergy. The absence of markers typical of celiac disease and wheat allergy with minor histological lesions (Marsh 0,1), accompanied by a good response to a gluten-free diet, indicates non-celiac gluten sensitivity. The presence of AGA antibodies (anti-gliadin antibodies) is an additional marker for non-celiac gluten sensitivity in these patients.[1]

Celiac disease is a medical condition in which the absorptive surface of the small intestine is damaged by the gliadin fraction of gluten. This results in an inability of the body to absorb key nutrients: protein, fat, carbohydrates, vitamins and minerals. Common symptoms include anemia, chronic diarrhea, weight loss, fatigue, cramps and bloating, and irritability.

There are now a few simple blood screening tests available to help establish who might have celiac disease, but a definitive diagnosis can only be made by a small-bowel biopsy. Typical blood tests used to screen for celiac disease include either the IgA-human tissue transglutaminase (TTG) or IgA-endomysial antibody (EMA) test, or a combination of both, which are recommended as the "celiac disease screening/panel" on a lab requisition.

An additional test is also required to measure the serum IgA concentration. The serum IgA test is used to evaluate IgA deficiency. If the patient's body does not make serum IgA, the TTG and EMA results usually will show a false negative (meaning that it may show negative for celiac disease when in fact, a problem exists).

An IgA deficiency occurs in 3-5 percent of individuals with celiac disease and thus, it should be included in the test panel. In fact, IgA deficiency alone may cause intestinal symptoms. However, the TTG and EMA tests are about 90 percent accurate for individuals who make serum IgA.

For the TTG and EMA blood tests to work properly, the patient must be eating gluten daily. Therefore, following a gluten-free diet prior to the test may produce a negative test result when in fact, the patient is actually severely affected by gluten.[4-5]

Wheat allergy is common in people who have other allergic symptoms such as asthma, hay fever, eczema, hives, stuffy / runny nose, and/or with abdominal symptoms. Patients are often assessed via a skin-prick test assessing their reaction to a wheat extract challenge (sIgE). The patient's blood can also be tested for the presence of immunoglobulin E antibodies to wheat protein.

The typical constellation of symptoms in patients with a wheat allergy include some combination of the following:[6-7]

- Hives or skin rash
- Nausea, stomach cramps, indigestion, vomiting or diarrhea
- Stuffy or runny nose

- Sneezing
- Headaches
- Asthma
- Anaphylaxis (less common)

Gluten-Containing Foods

Gluten is a protein found in wheat, rye, triticale and barley. In the case of wheat, gliadin has been isolated as the toxic fraction. It is the gluten in the flour that helps bread and other baked goods bind and prevents crumbling. This feature has made gluten widely used in the production of many processed and packaged foods.

Gluten is actually composed of two different proteins: gliadin (a prolamin protein) and glutenin (a glutelin protein). Gluten is found in all products containing:

- Wheat
- Barley
- Bulgur
- Oats (don't contain gluten themselves, but are often processed in plants that produce gluten-containing grains and may be contaminated)
- Rye
- Seitan
- Triticale and mir (a cross between wheat and rye)

Gluten may also show up as ingredients in barley malt, chicken broth, malt vinegar, some salad dressings, veggie burgers (if not specified gluten-free) and soy sauce. The protein may even hide in many common seasonings and spice mixes.[8] For a list of gluten-containing and gluten-free foods, the following resource may be helpful: www.healthline.com/health/allergies/gluten-food-list#Overview1.

Clinical Pearls

Until recently, health practitioners were at a loss to explain why a gluten-free diet was sometimes helpful to patients who tested negative for celiac disease. In recent years, it has been acknowledged that non-celiac gluten sensitivity is a real condition that affects roughly 6 percent of the population.

Patients with abdominal symptoms and related symptoms who test negative for common intestinal pathologies (Crohn's disease, ulcerative colitis, tumors of the bowel, lactose intolerance, fructose malabsorption, celiac disease, etc.) may suggest the presence of non-celiac gluten sensitivity. In these cases, a simple challenge with a gluten-free diet can help assess whether or not a gluten-free lifestyle would be helpful for those whose symptoms improve.

Patients diagnosed with IBS or who have certain other intestinal conditions such as lactose intolerance, Crohn's disease, etc., also may benefit from a gluten-free diet. Only by following a gluten-free diet in these cases can one discover if it is beneficial.

Finally, a gluten-free challenge may also be worth trying in patients who suffer from schizophrenia or autism spectrum disorder.

References

1. Czaja-Bulsa G. Non coelic gluten sensitivity – a new disease with gluten intolerance. *Clin Nutr*, 2015;34(2):189-194.
2. Bradford A. "What Is Gluten?" Live Science.com, Dec. 23, 2015.
3. Sanders DS, FernÃindez-Bañares F. Systematic review: noncoeliac gluten sensitivity. *Aliment Pharmacol Ther*, 2015;41
4. Gluten-Related Disorders: About Celiac Disease. Canadian Celiac Association.
5. Rubio-Tapia A, et al. The prevalence of celiac disease in the United States. *Am J Gastroenterol,* 2012 Oct;107(10):1538-44; quiz 1537, 1545.
6. Types of Food Allergy – Wheat Allergy. American College of Allergy, Asthma & Immunology.
7. Wheat Allergy and Sensitivity. Sandwell and West Birmingham Hospitals NHS Trust - a teaching trust of the University of Birmingham (U.K.).
8. Kerr M, Cherney K. "Gluten Allergies Food List: What to Avoid & What to Eat." Healthline.com, April 2, 2015.

FEBRUARY 2017