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Celiac disease and gluten sensitivity

by Rebecca K. Kirby, M.D., M.S., R.D.

Gluten sensitivity and the autoimmune disorder called celiac or sprue affects approximately 1 in 100 Americans. It has been estimated that as many as 97% of those with the condition go undiagnosed and untreated. Although celiac disease is considered common in patients with bloating, irritable bowel, chronic diarrhea, and thyroid disease, a study found that only 35% of those newly diagnosed had chronic diarrhea. Then what are other symptoms of celiac disease other than bowel issues? There are over 300 possible symptoms, ranging from osteoporosis to hair loss. There is even an itchy skin rash called dermatitis herpetiformis that is diagnostic of celiac disease. Age of onset can be from early childhood to adulthood, and how severely people are affected varies a great deal; 38% of people are asymptomatic.

So, what is the underlying mechanism of this somewhat stealth condition? The gastrointestinal tract is the major site of injury. The gliadin protein in wheat gluten invades the mucosal wall and initiates an immune response with the production of antibodies. The result is inflammation of the small bowel mucosa where the villi of the small intestine become inflamed, resulting in malabsorption.

As an autoimmune disorder with the production of autoantibodies, there is a high prevalence of celiac with other autoimmune conditions such as Type I diabetes, lupus, rheumatoid arthritis, Raynaud's, Sjogren's syndrome, and thyroid disease. However, predisposi-

tion depends on other genes that affect adaptive immune responses, intestinal permeability, and predisposition to autoimmunity. Another factor that may predispose someone to celiac is the length of time of breast-feeding as an infant. Children are 4 times more likely to develop celiac if breast fed for less than 30 days. Also, children are at increased risk who have had recurrent infections or for whom solid foods and cereals with gluten were introduced in the diet too early. Children with celiac are often diagnosed within the first 5 years of life due to their poor growth, behavioral changes, or failure to thrive.

The diagnosis of celiac disease has been traditionally by biopsy of the intestinal wall with 4 stages of damage to the intestinal lining described to indicate the degree of severity. Blood tests have also been developed that look for the auto antibodies that are characteristic of celiac disease. For both of these methods to be accurate, the person must still be eating wheat. Going off wheat in the diet before these tests may result in a false negative or an indeterminate conclusion. There is a test that has been developed to look for autoantibodies in the stool where it is not critical whether wheat is in the diet or not. Genetic typing can also be useful to describe risk of celiac or gluten sensitivity since the genes that predispose to celiac disease have been found, plus another array of genes has been described that characterize gluten sensitivity. Gluten sensitivity is considered a less severe reaction to gluten than the celiac autoimmune response.

Does someone recover from this inflammation and malabsorption of the small bowel? Yes, and the road to healing is to meticulously avoid wheat. In celiac disease there are some similar proteins to the gliadin in wheat which require the avoidance of rye and barley as well. There may also be a problem with oats; however, if the oats are not contaminated with wheat, rye, or barley, some people seem to tolerate them fine. Besides avoidance of wheat, rye, and barley, it is important to address bacterial overgrowth and intestinal villi inflammation with the use of probiotics. The 'good bacteria' help to maintain the permeability of the bowel wall among many other feats.

A gluten-free diet consists of

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Mental Medicine

by Marilyn Landreth, M.A.

Another perspective


This time of year is always a busy time with graduations, class reunions, weddings, etc. This year is no exception. A family reunion the day before Easter was added to the list. In addition, cousins from Canada traveled to our house and we all went to Oklahoma for the get-together.

I've journeyed to a few countries but always as a tourist, never by visiting the people of the country in their home. Having company from another country in our home really brought out the similarities and differences. On one hand, we all spoke English. On the other hand, they used words such as "bloody" and "aye." "Aye" could be used for either "yes" or "no" or as we might use the phrase "you know." It added a lot of flavor to their conversations.

The cousins are property managers in Canada and were surprised at how large the homes' lots are and how inexpensive our homes are. Getting another viewpoint on our city made us look at it differently. Alberta Flanders said,

"Sometimes only a change of viewpoint is needed to convert a tiresome duty into an interesting opportunity."

In Oklahoma, we visited with relatives and stayed all night as guests of another cousin. She had arranged for a hayrack ride, bonfire, and wiener roast on her farm. It has been years since I rode on a trailer, but with a helping hand and a boost from behind I made it up. It was so peaceful and quiet. The grass was a vivid shade of green, the pond was so still, and we could hear the cows and turkeys nearby. Mushroom hunting was also experienced by a few of the more active group.

Kirby Larson said, "It's the company, not the cooking that makes a meal." We had a great meal. The Canadian cousins were thrilled with their experience in the States and plan on a return visit. Sometimes we get in a rut of doing the same thing day after day. Do something different today. If you get the chance, experience your environment through someone else's eyes. 

Test of the Month

by Dr. James A. Jackson, Director, Bio-Center Laboratory


Liver function tests - #3

Gamma Glutamyl Transpeptidase (GGT)

Since the test name ends in "ase" we have a good idea it is another enzyme. GGT's main function is the transfer of amino acids across membranes. Large amounts of GGT are found in the liver and renal tubular epithelium. Serum GGT levels are very useful as a marker for liver pathology such as obstructive jaundice, cancer metastasis to the liver, and intrahepatic blockage. Intrahepatic blockage causes GGT to reach its highest level.

Hepatotoxicity, especially acetaminophen poisoning and chemotherapy, can cause elevated GGT levels. GGT can be affected by substances called inducers of hepatic enzyme synthesis. Alcohol, barbiturates, and

phenytoin cause the GGT to "leak" out of the hepatic cells. GGT is very sensitive to alcohol ingestion and it shows a sustained rise at high alcohol intake with moderate elevations at lower intakes. This makes GGT a valuable laboratory tool in determining compliance in alcohol rehabilitation and withdrawal programs. Levels return to normal after two to five weeks of abstinence from alcohol.

Renal GGT does not reach the serum but can be measured in the urine to assess specific renal tubular damage. The normal serum range depends on the test procedure used, but our laboratory uses 0 to 60 IU/L for females and 0 to 65 IU/L for males. 

Case of the Month

A four-year-old female was brought to The Center by her parents in November of 2009. She had symptoms of diarrhea, gas, bloating, constipation, very slow weight gain, irritability, and foul smelling stools. She had colic as an infant.

The parents had been told that she had “toddler diarrhea” or the moodiness was just her personality and she would outgrow it.

On her first visit, Dr. Ron Hunninghake did a review of her health history with her parents and ordered initial lab tests including a vitamin D level, essential fatty acids, and a hair tissue analysis for heavy metals. Also, he ordered a cytotoxic food sensitivity test, indican, complete digestive stool analysis, and entero lab analysis.

She was found to be the most sensitive to chocolate, mustard, avocado, sugar, and strawberries, among other foods.

Her test results showed evidence of active gluten sensitivity, so a gluten-free diet was recommended. The microscope fecal fat score was in the normal range.

It was recommended that she start on DHA Jr., Emergen C-Kids, vitamin D3, and that she increase her probiotic to two times per day.

She was to use LCS enzymes for suspicious sensitive foods.

Dr. Hunninghake saw her for a follow-up a month later. Her parents reported her symptoms had almost completely resolved with the elimination of foods to which she was sensitive and the recommended supplements she was taking. [H]

Reminder . . .

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INFORMATION WORTH KNOWING

by Marilyn Landreth, M.A.

Are you troubled by gastrointestinal problems, anemia, fatigue, and headaches? Do you find yourself being treated for a host of symptoms with little or no relief? If the answer is yes, you may be one of the nearly 1% of Americans who are suffering from undiagnosed celiac disease. Celiac disease is a hereditary autoimmune disease that primarily affects the small intestine and is triggered by eating a protein called gluten. The gluten damages the villi which causes the body to be unable to absorb essential nutrients that are needed or the whole body will suffer as a result. One out of 100 Americans has celiac disease, although 97% of them are undiagnosed or misdiagnosed. The average cost of misdiagnosis is \$5,000 to \$12,000 which does not include the cost of days missed from work because of the disease.

1 Gluten affects the digestive system. The term “digestive system” is commonly used to describe the breakdown of food products into smaller components, the passage of food products broken down into the intestinal wall, and transfer of food from the intestinal wall to the _____.

- a. nerves
- b. cells
- c. fat
- d. protein

2 The _____ are the work-horses of the small intestine. They are the link between what you eat and what goes into your bloodstream.

- a. duodenum
- b. villi
- c. jejunum
- d. ileum

3 Celiac disease is a time limited disorder. After following a semi-restrictive diet, you can go back to eating like you used to eat.

- a. True
- b. False

4 A well-balanced diet, which can include specialty breads and _____, can be achieved by people with celiac disease.

- a. fish
- b. pasta
- c. veggies
- d. rice

5 Gluten comes in many forms so particular care must be taken when checking the product list. Ingredients contain many items that include wheat or _____ derivatives which contain gluten.

- a. oats
- b. barley
- c. sorghum
- d. corn

6 Almost all beers are brewed with malted barley or wheat (contains gluten).

- a. True
- b. False

7 It is important for gluten sensitive individuals to eat a large variety of fruits and vegetables. Fruits and veggies are gluten free. Another way to avoid nutritional deficiencies is to include _____.

- a. supplements
- b. Stilton cheese
- c. all cereals
- d. Roquefort cheese

Answers: 1. b. The digestive system has been described as the outside world going through us. 2. b. The final stage of the digestive, absorption, and transport of nutrients occurs through these tiny, fingerlike projections. 3. b. The only “cure” or treatment is a 100% gluten free diet. 4. b. Fish, vegetables, and rice are gluten free. You can use potato, rice, soy, or bean flour in place of wheat flour in bread and pasta. 5. b. Other ways gluten finds its way into food products is when it is used to dust conveyor belts to prevent foods from sticking during processing. 6. a. Special beers made with sorghum or buckwheat are gluten free beers. Buckwheat does not contain wheat. 7. a. Be sure the nutritional supplements do not use gluten products as a filler or as an ingredient.

Drawing is not really very difficult. Seeing is the problem, or, to be more specific, shifting to a particular way of seeing. Many artists have spoken of seeing things differently while drawing and have often mentioned that drawing puts them into a somewhat altered state of awareness.

From: *Drawing on the Right Side of the Brain* by Betty Edwards
Find this book and many others on creativity in the Mabee Library.

Upcoming Events. . .

Lunch & Lectures:

May:

- 6 Health Hunter/Beat The Odds "Ask The Doctors"
- 13 Understanding the Macronutrients
- 20 21 Ways to Reduce Your Stress
- 27 What About Those Portion Sizes

June:

- 3 Foundational Nutrition – Laying the Ground Work for a Lifetime of Health

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Celiac disease—Cont'd from page 1

exploring other unlike grains such as buckwheat, quinoa, amaranth, or millet. Grasses may be used such as rice, teff, or montina. Other starches such as potatoes, beans, and corn may also be used as well as thickeners like arrowroot, tapioca, and guar gum, to name a few.

There is a variety of flours, pastas, and preprepared foods that utilize these non-gluten foods, including flours from nuts and seeds. The most straight forward and nutritious way to approach the gluten-free diet is to eat whole foods pretty much the way nature produced them. Then, mysterious ingredients or additives can be avoided and a more wholesome diet of unrefined foods can be enjoyed. Eat out less and eat more legumes (dry beans and peas), nuts and seeds, whole fruits and vegetables, fish, poultry, and eggs, using fresh herbs for seasoning. Interesting recipes abound so explore, enjoy, and insure yourself a healthy future. [H]