

# Cyrex Array 3X Case Assignments

## (Answers)

### CASE #1:

#### **Answer:**

This combination of symptoms and positive antibodies (including those antibodies listed as equivocal) are consistent with NCGS. Interestingly, she has antibodies to glutenin which are known to cross-react with dermal elastin (skin) and may therefore be contributing to her skin issues. Antibodies to glutenin may be found in CD, but given the absence of antibodies to alpha-gliadin, deamidated gliadin, and tTG-2, a diagnosis of CD is less likely.

Her antibodies to gluteomorphin and prodynorphin indicate GI permeability. Since these antibodies may have an opioid effect on the the brain, it's important to explain to her that when she removes wheat and gluten from her diet she may feel withdrawal symptoms but they will pass.

#### Rx:

- 1) Recommend removal of wheat and gluten from the diet completely.
- 2) Test for additional food intolerances using Cyrex Array 4.

## CASE #2:

### **Answer:**

The most significant elevation is in tTG-2, and there is also equivocal elevation in the gliadin-transglutaminase complex, which can adhere to the intestinal wall and potentially trigger an immune response. Given the elevation in antibodies to omega-gliadin, the elevation in tTG-2 antibodies is most likely mediated by gluten and/or other components in wheat (i.e., wheat germ agglutinin or wheat itself). This is further supported by the antibodies to the gliadin-tTG complex, indicating an immune response to wheat. Overall, based on the antibody profile and her reluctance to eliminate wheat from her diet, further evaluation for CD is warranted. Specifically, you can run IgA anti-endomysial antibodies through LabCorp and may consider referral to a gastroenterologist for upper endoscopy and biopsy.

Additionally, she also has an elevation in antibodies to tTG-3. Tissue transglutaminase-3 is primarily expressed in the epidermis (skin) and may be associated with a variety of skin issues. While this patient didn't have any specific skin disorders, it's important to be aware of this connection because production of antibodies often precedes the development of clinical disease by years or even decades.

Based on elevations in both IgG and IgG to gluteomorphin and prodynorphin, the opioid-like effect of gluten should be explained so that she can understand that the withdrawal symptoms of wheat and gluten are physiologic, are not harmful in any way, and will pass with time.

### **Rx:**

- 1) Recommend removal of wheat and gluten from the diet completely. This is a patient who may benefit from meal suggestions and/or working directly with a nutritionist to find dietary options that work for her.
- 2) Test for additional food intolerances using Cyrex Array 4.
- 3) Recommend further evaluation for celiac disease including anti-endomysial antibodies and possible referral to a gastroenterologist for upper endoscopy.

### CASE #3:

**Answer:**

This is most consistent with NCGS.

Although there are antibodies to gliadin, tTG-2, and glutenin, the absence of elevated antibody titers to deamidated gliadin make the diagnosis of CD less likely. However, as mentioned in the presentation, CD cannot be excluded, and given her reluctance to exclude wheat and other gluten-containing grains for her diet, further evaluation of possible CD should be recommended. Remember, a relatively high percentage of people with CD don't test positive for the typical antibodies.

It's also notable that both the IgG and IgA antibodies to tTG-6 are in the equivocal range. Tissue transglutaminase-6 is expressed in neural tissue, so these antibodies are thought to play a role in pathogenesis of gluten reactivity-related neurological dysfunction. Helping patients understand the complexity of the immune responses associated with gluten may help improve compliance—and prevent the future manifestation of serious and potentially life-threatening neurodegenerative conditions.

Given the elevation in wheat IgA, an intestinal permeability screen may be considered.

**Rx:**

- 1) Recommend removal of wheat and gluten from the diet completely.
- 2) Recommend further evaluation for celiac disease, including anti-endomysial antibodies and possible referral to a gastroenterologist for upper endoscopy.
- 3) Test for additional food intolerances using Cyrex Array 4.
- 4) Consider intestinal permeability screen based on wheat IgA antibodies.
- 5) Consider Cyrex Array 5, Multiple Autoimmune screen to look for antibodies to several central nervous system proteins given the elevated tTG-6 antibodies. <http://www.joincyrex.com/page/2197/Array-5-Multiple-Autoimmune-Reactivity-Screen>

## CASE #4:

### Answer:

The test is completely normal, but we know that antibody tests are imperfect and wheat and gluten may still be associated with mild inflammation. In the setting of Parkinson's disease, we want to minimize all potential sources of inflammation, and eliminating wheat may still be the best approach.

Of note, there is a known association between SIBO and Parkinson's disease, which is one of the reasons a SIBO breath test was performed in this patient with no GI symptoms. It's often helpful to explain to patients some of these associations so they understand the reasoning behind the testing recommendations.

*Small intestinal bacterial overgrowth in Parkinson's disease.*

<http://www.ncbi.nlm.nih.gov/pubmed/24637123>

*Beyond here be dragons: SIBO in Parkinson's disease.*

<http://www.ncbi.nlm.nih.gov/pubmed/24167009>

Rx:

- 1) Gluten-free diet and treat SIBO. Once SIBO is treated and a new symptom baseline is established, then try a very careful reintroduction of properly prepared grains. If there is no change in symptoms, then gluten may be considered as an occasional treat but is not recommended as a dietary staple.