



# Antibody Blood Tests

People with celiac disease who eat gluten have higher than normal levels of certain antibodies in their blood. Antibodies are produced by the immune system in response to substances that the body perceives to be threatening. Think of antibodies as soldiers instructed to fight a specific enemy;—only in the case of an autoimmune disorder like celiac disease, the enemy is actually supposed to be harmless—the proteins in wheat, rye and barley that are generically known as “gluten.”

## Antibody Testing: Only A First Step

To help diagnose celiac disease, physicians first test blood to measure levels of certain antibodies. These antibodies are:

- The anti-tissue transglutaminase (tTG)
- The anti-endomysium (EMA); and
- The anti-deamidated gliadin peptides (DGP)..

A positive antibody test suggests that a person might be celiac, but it is not a conclusive test; a biopsy will be needed to confirm the diagnosis.

Your doctor may order one or more of the antibody tests indicated above (a “panel”) to aid in diagnosis. The blood samples for these tests are usually sent to one of several labs in the country that are best suited for conducting them and interpreting the results. These laboratories include Prometheus Labs, Quest Diagnostics and the Mayo Clinic.

## Which Tests Do I Need?

**If my positive antibody test suggests I may have celiac disease, how do I find out for sure?**

If antibody tests and/or symptoms suggest celiac disease, the physician needs to establish the diagnosis by obtaining tiny

pieces of tissue from the small intestine to check for damage to the villi. This is done in an endoscopic biopsy procedure. Under sedation, the physician eases a long, thin tube called an endoscope through the mouth and stomach into the small intestine, and then takes samples of the tissue using instruments passed through the endoscope.

Even though the blood tests are quite accurate, they may occasionally be falsely positive (i.e. being positive without the person having celiac) or – although less commonly - falsely negative (i.e. being normal when a person actually has celiac). Thus, biopsy of the small intestine is the only way to diagnose celiac disease.

## **What do I do if I have a negative blood test (or panel) but I'm still having symptoms?**

While it is rare, it is possible for patients to have a negative antibody test results and still have celiac disease. IgA deficiency is one example where this could occur. Further medical evaluation is important for anyone who is still experiencing symptoms, to establish the diagnosis or to rule out celiac disease as a part of establishing another diagnosis.

## Find Out For Sure

Antibody tests are only accurate when a patient is on a gluten-containing diet. Those concerned about celiac disease are strongly discouraged from starting a gluten-free diet without having had a firm diagnosis. Any change in the diet, even for as little as a month or two, can complicate the diagnostic process.

## Screening Test:

### ***Anti-tissue transglutaminase (tTG-IgA)***

A screening test is commonly used when an individual is in a risk group for celiac disease, whether or not he/she has symptoms. This test is usually the one offered for celiac screening events, as it is the most sensitive test available: in fact, it is generally believed that about 98% of celiacs have a positive tTG test. While they are very specific too, they do suffer from “false positive”: indeed, some people with Type 1 Diabetes, Hashimoto’s thyroiditis and autoimmune liver conditions are especially likely to have an elevated tTG without having celiac.

### ***Other Tests:***

- Total Serum IgA to test for IgA deficiency (this otherwise trivial health condition can affect accuracy of antibody test)
- Anti-endomysial antibody test (EMA-IgA) EMA-IgA are very specific for celiac disease: it is estimated that a person with an elevated titer of EMA has almost 100% chances of being celiac! However they are not as sensitive as the tTG-IgA: about 5-10% of celiacs in fact do not have a positive EMA test.
- HLA-DQ2 and HLA-DQ8 gene tests for celiac disease.

The “gene tests” are not antibodies and thus do not depend on the diet (gluten or not) that the person is on: if negative they are very useful, as in this case celiac disease can be confidently ruled out for life.

### ***One More Thing...***

People with IgA deficiency require a different version of the antibody tests listed above. The tTG and EMA tests have IgG versions and these tests will then be accurate for someone with IgA deficiency. IgA deficiency is diagnosed when someone has a total serum IgA test and the results are very close to zero (less than 10mg/dl). This is not a test for celiac disease, but a means to make a more accurate diagnosis.

**For more information contact the University of Chicago Celiac Disease Center at 773.702.7593 or [www.CeliacDisease.net](http://www.CeliacDisease.net).**