

# 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 such as celiac disease, the enemy is actually something that is harmless for people without the disease — in this case, 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:

- Anti-tissue transglutaminase (tTG)
- Anti-endomysium (EMA)
- Anti-deamidated gliadin peptides (DGP)

A positive antibody test suggests that a person might have celiac disease, 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 sent to a lab to perform the tests and interpret the results. Most major labs are now able to run the panel of tests for celiac disease.

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 confirm 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. While the patient is 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 small instruments passed through the endoscope.

Even though the blood tests are quite accurate, they may occasionally produce false positive results (when someone who does not have celiac disease receives a positive test result) or, less commonly, false negative results (when a person with celiac disease receives a normal test result). Thus, biopsy of the small intestine is the only way to diagnose celiac disease. Please see the “Diagnosis” factsheet for more details.

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 result 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 accurate only 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 as briefly 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 or she has symptoms. The tTG-IgA 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 people with celiac disease have a positive tTG test. While the tTG test is very specific, it also can produce false positive results on occasion. Indeed, some people with Type 1 diabetes, Hashimoto's thyroiditis, and autoimmune liver conditions are especially likely to have elevated tTG without having celiac disease.

## Other tests

- Total serum IgA—test for IgA deficiency (this health condition can sometimes affect the accuracy of other antibody tests)
- Anti-endomysial antibody test (EMA-IgA)—test specific for celiac disease. It is estimated that a person with an elevated level of EMA has an almost 100% chance of having celiac disease. However, this test is not as sensitive as the tTG-IgA test—about 5% to 10% of people with celiac disease 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 gluten-free) that the person is on. A negative gene test result can be very useful to confidently rule out celiac disease for life.

## One more thing...

People with IgA deficiency require a different version of the antibody tests listed at left. 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 a person's total serum IgA test results are very close to zero (less than 10 mg/dL). This is not a test for celiac disease, but a means to make a more accurate diagnosis of IgA deficiency.