

Testing for Celiac Disease

Based on current International Guidelines

Testing is based on antibody blood tests and biopsies from the small intestine (duodenum). A person with Celiac Disease produces antibodies to gluten when eaten, which can be measured. As Celiac Disease is an important medical condition, with lifelong implications, getting a definite diagnosis is essential.

Firstly, the person being tested should be aware that it is essential that they **DO NOT stop eating gluten** during the testing process. Being on a gluten free diet can affect the results of both laboratory and endoscopic investigations. Even if laboratory investigations come back as being positive to suggest a diagnosis of Celiac Disease, one may still require a small intestinal biopsy to confirm the diagnosis – this is extremely important.

Adults

First choice blood tests:

Anti Tissue Transglutaminase (TTG) IgA antibodies *and* Total IgA levels (2% of people with Celiac Disease are IgA deficient)

Consider Anti Endomysial (EMA) IgA antibodies if Anti TTG IgA antibodies are weakly positive. Your doctor may consider checking Anti EMA IgA antibodies

Consider Anti EMA IgG, Anti Deaminated Gliadin Peptide (DGP) IgG and/or Anti TTG IgG antibodies if one is IgA deficient

Children (over 2 years of age)

First choice blood tests:

Anti Tissue Transglutaminase (TTG) IgA antibodies *and* Total IgA levels

Consider Anti Endomysial (EMA) IgA antibodies if Anti TTG IgA antibodies are weakly positive. Your doctor may consider checking Anti EMA IgA antibodies

Note : For Young Children (under 2 years of age), consider checking both Anti TTG IgA and Anti Deaminated Gliadin Peptide (DGP) IgA antibodies as anti TTG IgA antibodies are not sensitive enough for this age group.

For children, a biopsy may not be required in every case based on the European Society for Paediatric Gastroenterology (ESPHGAN) “Triple Test” guideline. If the child is symptomatic on eating gluten; Anti TTG IgA levels > ten times the upper limit of normal; Anti EMA IgA positive on a different blood sample. HLA-DQ2/DQ8 positive. However, this guideline is not widely accepted by all Gastroenterology Societies and recommendations to biopsy or not should be left to the evaluating physician.

Points to Note

- Anti TTG IgA is the most sensitive and specific blood test to help diagnose Celiac Disease in non IgA deficient individuals.
- IgA deficiency is more common in people with Celiac Disease, if deficient this could lead to a false negative result when testing for Anti TTG IgA
- Gluten should be eaten at least once a day for 6-8 weeks prior to testing, in order to reduce false negative testing. This gluten challenge should be discussed and monitored by your physician.

- **Genetics:** In order to develop Celiac Disease HLA (human leukocyte antigen) DQ2 and/or DQ8 genes should be present. Testing can be useful to rule out celiac disease where diagnosis is uncertain. Testing negative makes Celiac Disease very unlikely. However, testing positive for HLA DQ2/DQ8 cannot be used to diagnose Celiac Disease as the genes are found in up to 40% of people, yet only a small percentage go on to develop Celiac Disease.

Laboratories

Both Tan Tock Seng Hospital and Singapore General Hospital laboratories run the above mentioned tests.

Typically, private laboratories in Singapore will send these tests to one of the two above mentioned labs.

It's important to know that if one is measuring serial antibody tests to follow up on adherence to a gluten free diet in a Celiac Disease patient, antibody tests should be sent to the same lab each time. This is to limit the lab variability amongst different testing kits at different hospital laboratories.

References:

National Institute for Health and Care Excellence; September 2015. Celiac disease: recognition, assessment and management

The British Society of Gastroenterology (2014) The diagnosis and management of adult celiac disease (panel from 8 countries)

European Society for Paediatric Gastroenterology, Hepatology & Nutrition (ESPHGAN) 2012. Guidelines for the diagnosis of celiac disease

The North American Society for Pediatric Gastroenterology, Hepatology & Nutrition 2005. Diagnosis and treatment of celiac disease in children.

<http://www.naspghan.org//files/documents/pdfs/medical-resources/ceciac/CeliacGuidelineSummary.pdf>

British Society for Paediatric Gastroenterology, Hepatology and Nutrition (BSPGHAN) 2013. Guidelines for the diagnosis and management of celiac disease in children

American College of Gastroenterology, Clinical Guidelines: Diagnosis and Management of Celiac Disease, The American Journal of Gastroenterology, Vol. 108, May 2013.

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