

## DETAILS

The incidence of this intolerance in Italy is estimated at 1 subject every 100 persons, i.e. with a prevalence of 0.6-1% on the population.

Therefore there are at least 400,000 cases of celiac disease in our country not yet diagnosed, considering that just over 70,000 cases are known.

## PROGRESS

In the light of what has been said, it can be understood that in the diagnosis of celiac disease, the choice of test is of fundamental importance since in patients with minimum histological lesions, in the case of only a search for anti-deamidated gliadin antibodies, there is a risk of failing to diagnose the disease even if it is present. Similarly, only a search for anti-transglutaminase tissue antibodies risk to fail to diagnose the disease in adults in which these antibodies have not yet appeared.

In the past, the only way of diagnosing celiac disease was biopsy, an invasive method, carried out on a stretch of the duodenum. In recent years, the development of serologic tests has allowed to identify celiac subjects who otherwise would have remained undiagnosed and subject to developing the disease and then requiring the endoscopic examination.

However, biopsy is still the invasive diagnostic test used and it is necessary for the effective diagnosis of celiac disease.

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### OTHER DIAGNOSTIC TESTS CARRIED OUT BY NATRIXLAB:

- **GLUTEN SENSITIVITY TEST:** non-celiac gluten sensitivity evaluation.
- **FOOD INTOLERANCE TEST:** assessment of food intolerance with the ELISA (Enzyme Linked Immuno Sorbent Assay) method.
- **HORMONAL PROFILES:** Weight Loss, Stress, Sport, Goodnight, Woman (Fertility\Menopause), Man.
- **CELLULAR AGING FACTORS:** global assessment of cellular aging by analyzing the 4 main processes implied (oxidation, inflammation, methylation, and glycation).
- **LIPIDOMIC PROFILE:** Evaluation of plasmatic or membrane fatty acids profile.
- **IN FLORA SCAN:** the most in-depth assessment panel for intestinal health.
- **MINERAL EVO:** nutritional minerals and heavy metals assessment.

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After the analysis, you can request on-line a specific nutrition program through the telemedicine service called "Telenutrizione". A team of doctors and nutrition specialists can assist patients during their nutrition program. For further information, visit the website.

[www.telenutrizione.com](http://www.telenutrizione.com)

For more information you can contact us from Monday to Friday from 09:00 to 13:00 and 14:00 to 18:00 (+39 0522 232606).



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## CELIAC TEST

### Immune assessment of positivity to Celiac Disease



The "Celiac Test" is an allergometric test which, by taking a small blood sample, allows to identify, with high specific sensitivity, the possible positivity to Celiac Disease. The analysis is carried out through the dosage of class G and A (**IgG** and **IgA**) antibodies:

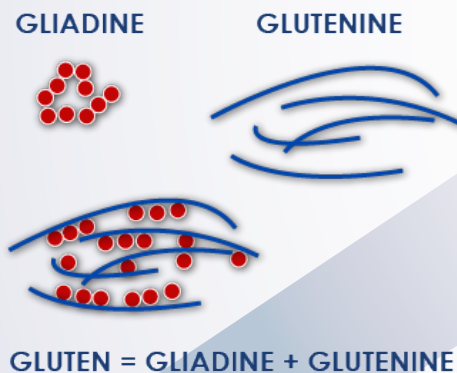
- Anti-transglutaminase tissue antibodies;
- Destarched anti-gliadin antibodies.

**Today, for every correctly diagnosed case of celiac disease, there are at least seven other people whose celiac disease is not diagnosed.** (Annual Report to Parliament on Celiac Disease Year 2010).

## WHAT IS CELIAC DISEASE?

Celiac disease is a permanent intolerance to gluten, a protein complex contained in wheat, emmer, rye, kamut, barley and other minor cereals. Therefore gluten is found in bread, pasta, biscuits, pizza and every other product containing the above-indicated cereals. It is a gluey substance used in modern food industry because it increases elasticity and the consistency of the final product, and it favours rising and bread-making. It is also used as an ingredient in sauces, soups, pre-cooked foods, and as a thickener in the formulae of some medicines.

The cereals that do not contain gluten include maize, rice, millet, amaranth, quinoa, buckwheat, sorghum and cassava.



## WHAT CAUSES THE DISEASE AND WHAT ARE THE SYMPTOMS?

The ingestion of gluten, in celiac patients or those with a tendency to the disease, causes serious damage to the intestinal mucous leading to atrophy of the intestinal villi, which causes the inefficient absorption of nutrients.

All this happens because the gliadin, deriving from the digestion of gluten at the intestinal level, triggers off a strong immune reaction with an increase in the inflammation and the concentration of immune cells in the lumen and in the intestinal mucous. There are several forms of celiac disease:

1. The **TYPICAL** form: this appears in the first months of weaning (6-24 months of life), with diarrhoea and strong abdominal pains.
2. The **ATYPICAL** form: this appears later (also in adult life) with strong abdominal pains and extra-intestinal symptoms: anaemia, osteopenia, dermatitis, anorexia, aphthae, stipsis, fatigue and weakness, etc...
3. The **SILENT** form: this can be present in individuals at risk because of predisposition or family history. The intestinal mucous is slightly damaged, but there are no symptoms.
4. The **LATENT** form: subjects are found positive to the blood test, but without intestinal lesions. These subjects must be checked and monitored over the years in case of the onset of the disease.

It is very important to carry out periodic checks and to monitor symptoms in order to know the state of progress of the disease, for both subjects affected who follow a therapeutic diet and subjects at risk.

## HOW IS IT DIAGNOSED?

The "Celiac Test" uses the standardised ELISA method which is highly specific and sensitive for the celiac markers taken for the analysis.

The specific tests carried out are the evaluation of the anti transglutaminase tissue antibodies (tTG) of class A and class G, and the anti-deamidated gliadin antibodies (anti DGP), class A and class G.

The transglutaminases cause partial deamidation of the gliadin, generating smaller molecules that can induce a specific immune response with the formation of antibodies. Laboratory tests have been developed which also evaluate the innovative parameter, the anti-DGP antibodies.

The anti-DGP antibodies have been found to be extremely sensitive and extremely specific to Celiac Disease. These tests together with the anti-tTG tests allow for more precise laboratory analysis.

The analysis of the latter has also been found to be more sensitive and reliable in adults than the dosage of anti-gliadin antibodies used until now.

According to the guidelines of the Italian Celiac Association, the first test to be carried out for celiac diagnosis is precisely the serologic test to evaluate the anti-transglutaminase tissue antibodies.

If the result of this test is positive, the next step is to take the endoscopic test, which, although invasive, is at present the only and necessary invasive test to diagnose celiac disease.

The genetic test to evaluate the haplotype HLA (DQ2 and DQ8), instead, is only an additional test to assess compatibility with the celiac diagnosis in cases of doubt. This is because about 30% of the European population have this haplotype without having the disease.

## HOW IS IT TREATED?

At present the only therapy possible is a strictly gluten free diet. This therapy not only allows for the swift disappearance of the symptoms (in a couple of months), but it also prevents the development of auto-immune complications of other kinds for the entire lifetime of the subject found positive to celiac disease.