



# Gluten Intolerance Test

## RESULT REPORT

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## 1 Your individual result report

Patient	John Doe	Sample number	
Born on	12.02.1990	Receipt	29.09.2016
Weight	192 lb	Issue	29.09.2016

Dear John Doe

Thank you for choosing the **cerascreen® Celiac Disease Test**.  
More and more people are suffering from gluten intolerance. **The cerascreen® Celiac Disease Test** helps you on your way to a symptom-free future.

**This test cannot and is not intended to replace a visit to the doctor.**

We have tested the concentration of antibodies of subclass igG\* against tissue transglutaminase in your blood serum.

Tissue transglutaminase antibodies are directed against your own body ("autoantibodies") – in the case of celiac disease, they are directed against certain structures within the muscle cells of the small intestine. In case of celiac disease, the number of tissue transglutaminase antibodies therefore increases.

**! A value of < 18 U/ml of tissue transglutaminase antibodies represents a normal level. !**

\*Immunoglobulins (Ig) are antibodies consisting of proteins. They are produced by the body as a defense reaction against substances it perceives as alien. These can include bacteria, viruses and, for hay fever sufferers, even plant pollens. These have been proven to be present in blood serum. They are separated into five different subclasses (IgA, IgD, IgE, IgG, IgM), each having its own area of specialisation. We test for the subclass IgG, which is important for the 2-5% of patients with an IgA deficiency and which could otherwise not be considered when testing for subclass IgA.

This document has been created digitally and is valid without a signature.

If you would like a personal consultation by our nutritional experts with regard to your test results or if you have any general questions, please contact us either via mail to support@cerascreen.co.uk or by dialing 020 36952395.

**Your Cerascreen® Team**

## 2 Your test result

**The concentration of tissue transglutaminase  
antibodies in your blood is:  
<18 U/ml**

Please note: The test results are most accurate when you have eaten foodstuffs containing gluten prior to testing. Gluten-free food can distort the test results and prevent celiac disease from being detected.

## 3 What is celiac disease and who suffers from it?

Celiac disease is a lifelong chronic disease. It means that components in gluten lead to chronic inflammation and damage of the lower intestinal mucosa. Recognizing celiac disease is important, because when the disease is present, eating food that contains gluten can cause secondary ailments.

Due to advanced research and better diagnostic tools, it is possible to recognize forms of celiac disease with symptoms outside of the small intestine. One example of this is Dermatitis herpetiformis Duhring, an rare and extremely itchy skin condition accompanied by blistering. The classic form of celiac disease represents only about 20% of newly diagnosed patients with celiac disease.

The problematic gluten is found in many domestic cereal crops such as wheat, rye, barley, spelt and green spelt.

In the United Kingdom, around 1% of the population suffer from celiac disease. In comparison with other European countries, the figure is rather low. About twice as many women as men are affected. In addition, research and studies suggest that it is not only the frequency but also the quantity of new cases which has risen in recent years in the United Kingdom. This suggests risk factors such as the influence of environmental factors, for example changes in dietary habits, psychosocial factors, and infections of the gastrointestinal tract. Improved diagnostics mean, however, that it has been possible to identify increasingly higher numbers of sufferers.

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## 4 How and why does celiac disease occur?

The storage proteins within foods containing gluten are particularly rich in the amino acids prolamin and glutelin (in wheat named glutenin). In people who are suffering from celiac disease, these cannot be completely broken down by the relevant enzymes and thus migrate unhindered through the tissue of the small intestine. As a consequence, an autoimmune reaction in the small intestine takes place, leading to inflammations. Later on, the inner wall of the small intestine degenerates, leading right up to complete atrophy.

You need a genetic predisposition to develop celiac disease. A high incidence of the disease within families is, therefore, by no means rare. Similarly, there are a range of medical conditions which can lead to celiac disease. These include: Type I diabetes, Hashimoto's thyroiditis, autoimmune hepatitis, and chromosomal disorders such as Down's syndrome (trisomy-21), Turner syndrome and Williams syndrome.

The following medical conditions are also linked to celiac disease:

In case of irritable bowel syndrome (IBS), the risk of celiac disease is four times higher – even if the diagnosis of IBS is made prior to celiac disease diagnosis. For about 5% of people suffering from microscopic colitis – an inflammatory process in the large intestine only visible through a microscope – celiac disease is also present.

## 5 Which consequences does celiac disease have for my diet?

Due to the ensuing changes in the lower intestinal mucosa and its resulting surface reduction, less nutrients can be absorbed. This leads to an insufficient supply of minerals and vitamins, despite an adequate intake of food. Due to the limited absorption ability of the intestine, so-called fatty stools can occur, which means that the energy and fat requirements might no longer be covered.

## 6 Can I prevent my child from developing celiac disease?

Little is known about how to prevent celiac disease in children. In the first year of a child's life, nutrition seems, however, to play a key role in the development of celiac disease. In case of family history of the disease, according to current medical knowledge, there are several paths which you can take, including:

Additional intake of foods containing gluten between the fifth and seventh months (if breastfeeding is continued). This could, for instance, begin with adding one to two heaped spoons of flour into otherwise gluten-free food once a day. After a few days, the amount of gluten can be doubled. This can be further increased to include spelt flakes in food containing gluten such as cereals and fruit-based porridge. From the tenth to twelfth month, a normal amount of gluten can be eaten if the requisite tolerance has been established.

## 7 Which symptoms can occur?

Symptoms which arise as a result of celiac disease can express themselves in various forms.

There is no single symptom or symptom complex which can provide clear evidence of the presence of celiac disease. This means that there are a wide range of different symptoms. According to current guidelines, the separation of celiac disease into five different forms is recommended: typical, atypical, classical, non-classical and subclinical. Correspondingly, these are accompanied by various or even barely perceptible symptoms.

Please find below a summary of classic symptoms (beginning with the most common):

- Growth disturbance in children
- Protruding belly
- Diarrhea
- Constipation
- Lack of appetite
- Paleness
- Vomiting
- Muscle weakness
- Fatigue
- Personality change

Possible symptoms outside the small intestine:

- Neurologic and psychiatric symptoms (such as depression, headaches and concentration problems)
- Autoimmune disorders with blistering on the skin (dermatitis herpetiformis Duhring)
- Liver diseases
- Recurring canker sores in the mouth, possibly leading to mouth ulcers
- Anaemia
- Bleeding tendency
- Hematomas
- Osteoporosis
- Edemata
- Weaknesses
- Muscle cramps
- Night blindness

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## **8 What happens if I continue eating gluten-containing foods despite the presence of celiac disease?**

If intake of gluten continues – even in small amounts – then the inflammations of the lower intestinal mucosa and the villous atrophy will persist. The symptoms referred to above can arise from the changed digestive situation.

Depending on the severity of the celiac disease and the resulting villous atrophy, the enzyme production in the small intestine may be reduced, meaning that secondary diseases such as lactose intolerance can develop. These can recede under a gluten-free diet.

If villous atrophy persists, possible consequences are a heightened risk (in comparison with the general population) of the development of lymphoma and/or benign and malignant lymph node tumours. This risk can be minimised by a gluten-free diet.

## **9 What is a gluten-free diet?**

Gluten-free means that the gluten in foods is not allowed to exceed a concentration of 20mg per 1kg of product. This value applies across the EU.

It is essential to begin a gluten-free diet immediately after diagnosis of celiac disease.

As a gluten-free diet is the only treatment option, dietary compliance is especially important. Only by a gluten-free diet will inflammations subside, the lower intestinal mucosa regenerate and the existing symptoms recede.

This eventually leads to freedom from the symptoms. This result, however, does not mean you have been cured. If you resume the intake of foods containing gluten, this can make the so-called memory cells in the immune system becoming inflamed again, as well as can it can lead to villous atrophy.

**This means that the patient has to abstain from gluten entirely for the rest of his life**

In some cases, the gastrointestinal tract of sufferers reacts a few hours after a failure to maintain a gluten-free diet. For others, this is not the case.

Thus it is important to stick to this diet, even when symptoms do not occur immediately. If a gluten-free diet is strictly followed, the secondary illnesses described above can thus be avoided.

Gluten is used because it has several qualities desired by the food industry. Gluten gelatinizes, emulsifies, stabilizes and binds water. It is also useful as a carrier substance in flavouring. As a result, it is frequently found in foods.

In the first few days after diagnosis, you should stick primarily to the safe foods listed

below. This way, you can avoid a negation of initial successes in treatment.

The German Celiac Society (DZG) yearly issues a comprehensive positive list of gluten-free products in the sectors food, medicines, food supplements, medical and dental products, oral hygiene products as well as cosmetics. Later on, you can abide to this list.

The following tables provide an overview of foods that are gluten-free (table 1), containing gluten (table 2) and may contain gluten (table 3).

**Table 1:**

Gluten-free foods		
In their natural and unprocessed state	Cereals	Further gluten-free products
✓ Fruits and vegetables	✓ Rice	✓ Tofu, soya milk
✓ Potatoes	✓ Sweet corn	✓ Mozzarella in brine
✓ Salad	✓ Wild rice	✓ Pure fruit juice
✓ Milk and natural yogurt	✓ Amaranth	✓ Water
✓ Buttermilk and curd	✓ Quinoa	✓ Wine
✓ Butter and plain cream cheese	✓ Millet	✓ Sparkling wine
✓ Non-processed cheese	✓ Buckwheat	
✓ Vegetable oils	✓ Teff	
✓ Meat, fish and seafood		
✓ Sugar		
✓ Honey, jam, marmalade, maple syrup		
✓ Nuts, legumes		
✓ Pure spices and herbs		
✓ Eggs		

(Source: <https://www.dzg-online/>, modified)



**Table 2:**

Foods containing gluten – people with coeliac disease should avoid these		
Cereals	Foods produced from cereals	Product examples
⊗ Wheat	⊗ Flour	⊗ Bread
⊗ Rye	⊗ Semolina	⊗ Baguettes, gnocchi
⊗ Triticale	⊗ Pearl barley	⊗ Breaded meat and breaded fish
⊗ Barley	⊗ Starch	⊗ Pizza, noodles, dumplings
⊗ Oats	⊗ Flakes (muesli)	⊗ Cakes and tarts
⊗ Green spelt	⊗ Breadcrumbs	⊗ Pastries
⊗ Spelt	⊗ Pasta	⊗ Danish pastries
⊗ Related cereals and grains such as kamut and einkorn wheat		⊗ Biscuits and muesli bars
		⊗ Ice-cream cones
		⊗ Pretzels, Breadsticks
		⊗ Beer and malt beer

(Source: <https://www.dzg-online/>, modified)

**Table 3:**

Foods that may contain gluten → Attention!
! Soups, bound sauces
! Ready meals
! French fries, croquettes, potato cakes
! Creme mousse, etc.
! Nut-nougat spread
! Dairy products which include fruit
! Cream cheese preparations with herbs
! Sausages
! Crisps etc., Chocolate, Ice cream
! Low-fat products
! Ketchup, mustard etc.
! Spice mixes

(Source: <https://www.dzg-online/>, modified)

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## 10 How to ensure the success of a gluten-free diet

An appropriate supply of nutrients in a gluten-free diet can normally be ensured by paying attention to the following advice, because almost all raw staple foods – with the exception of cereals containing gluten – are gluten-free.

As foods containing gluten are our most common source of dietary fibre (such as bread and bakery products), a gluten-free food does not contain enough fibres. Therefore, you should make sure to eat enough fibre. The German Society for Nutrition (DGE) recommends a daily intake of 30 grams of fibre, an amount not reached even by many people free from celiac disease.

Sufficient gluten-free fibre can be ingested by eating potatoes, millet and brown rice combined with fruit and vegetables.

### **Other fibre-rich and gluten-free foods are (per 100 grams):**

- Beet fibre (67g)
- Soy bran (65.2g)
- Linseeds (38.6g)
- Tiger nut flakes (30g)
- Poppyseed (20.5g)
- Almonds (13.5g)
- Sesame seeds (11.2g)
- Sunflower seeds (6.3g)
- Raisins (5.2g)

### **Recipe Ideas - rich in fibre and gluten-free:**

- Homemade vegetable, bean or lentil soup
- Baked potatoes with gluten-free baked beans
- Fresh pineapple chunks with honey and sesame seeds
- Fruit salad with apples, bananas, plums and orange segments topped with chopped dates and raisins
- Salad made from cooked brown rice with chopped celery, carrots, tomatoes, peppers, spring onions and walnuts

When switching to a fibre-rich diet, these foods should be introduced slowly, because a sudden change can lead to intestinal complaints such as a feeling of fullness or flatulence. In addition, sufficient liquid supply of at least 1.5 litres a day should be ensured to prevent constipation. Recommended fluids are water, unsweetened herbal or fruit teas or highly diluted fruit juices (three parts water, one part juice).

Even if a sufficient amount of vitamins and minerals were ingested, insufficient blood levels can occur, especially before celiac disease has been finally diagnosed and before a gluten-free diet has started. Because of the pathological changes in the digestive process, low absorption rates of the fat-soluble vitamins A, D, E and K can result. Calcium, folic acid and iron may also not be absorbed by the small intestine to a sufficient degree.

Consultation with your therapist may determine that you need to take vitamin supplements to compensate for this.

## **11 How to tell whether a product is gluten-free**

There is a “gluten-free” certification symbol (a crossed-out ear of corn) which confirms that a product contains less than 20mg of gluten per 1kg. The crossed-out ear of corn has gained acceptance as the sign of a gluten-free product. But the text “gluten-free” is usually used as an additional label. Since 25.11.2005, it has been a requirement that the ingredient list on the food packaging has to declare all components containing gluten. These include the cereals wheat, rye, barley, oats, spelt, kamut and their hybridised strains and products produced therefrom. Even if the final product contains less than 20mg of gluten per 1kg, there is an obligation to declare this.

There is, however, no legally binding nature for the information “may contain traces of...”. Thus, if this sentence is missing, this doesn’t mean that the product is free from this substance.

## **12 Practical tips and helpful hints**

1. Gluten can also be found in medication, dietary supplements and dental/oral care products. In case of medication, you should only choose a different product in consultation with your doctor or pharmacist.
2. When shopping, take the time to carefully study the ingredients listed on the food packaging. Avoid products if you’re unsure what they contain. If necessary, ask the producer of the product for more information.
3. If possible, cook and bake yourself. This way, you know for sure what your meal contains.
4. If you eat out, always ask whether the meal can be prepared without gluten.
5. Employees who do not have access to a canteen which is able to prepare gluten-free meals should bring a packed lunch from home.
6. If someone invites you over for a meal, ask them what they are planning to cook and, if necessary, prepare an alternative.
7. If you are breading fish or meat or if you are preparing meatballs or meatloafs etc., use gluten-free breadcrumbs.
8. To thicken sauces and soups, carob gum, gluten-free sauce thickeners or grated

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potatoes can be used, as can rice, maize or potato starch.

9. Avoid contaminations as foods which are actually gluten-free are no longer gluten-free if they come into contact with foods that contain gluten. To avoid this, carefully separate gluten-containing and gluten-free foods in your home.

10. Even kitchen utensils and work surfaces should be strictly separated from gluten-containing products. They should also be cleaned very thoroughly or you should potentially buy two of each. Because gluten can get stuck in wooden structures, it is a good idea to use storage units made of wood exclusively for gluten-free products.

11. When deep frying, make sure to dispense of the oil if you have already used it to cook food containing gluten.

12. If you are milling or grinding cereals, ensure that the components of the food processor or the grinder are used only for gluten-free cereals. Commercially-available gluten-free cereals such as millet, rice and sweet corn can become contaminated during cultivation, transport and storage. For this reason, it is advisable to buy whole cereal grains. This way, you can examine them for grains that contain gluten, which you then can discard.

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