SelfDecode™

HLA-DQ (Gluten)

Gene Report

REPORT CATEGORY

FOOD SENSITIVITIES

Sample Client

Report date: 15 January 2026

Powered by omicsedge

Table of Contents

Personal information

NAME

Sample Client

SEX AT BIRTH

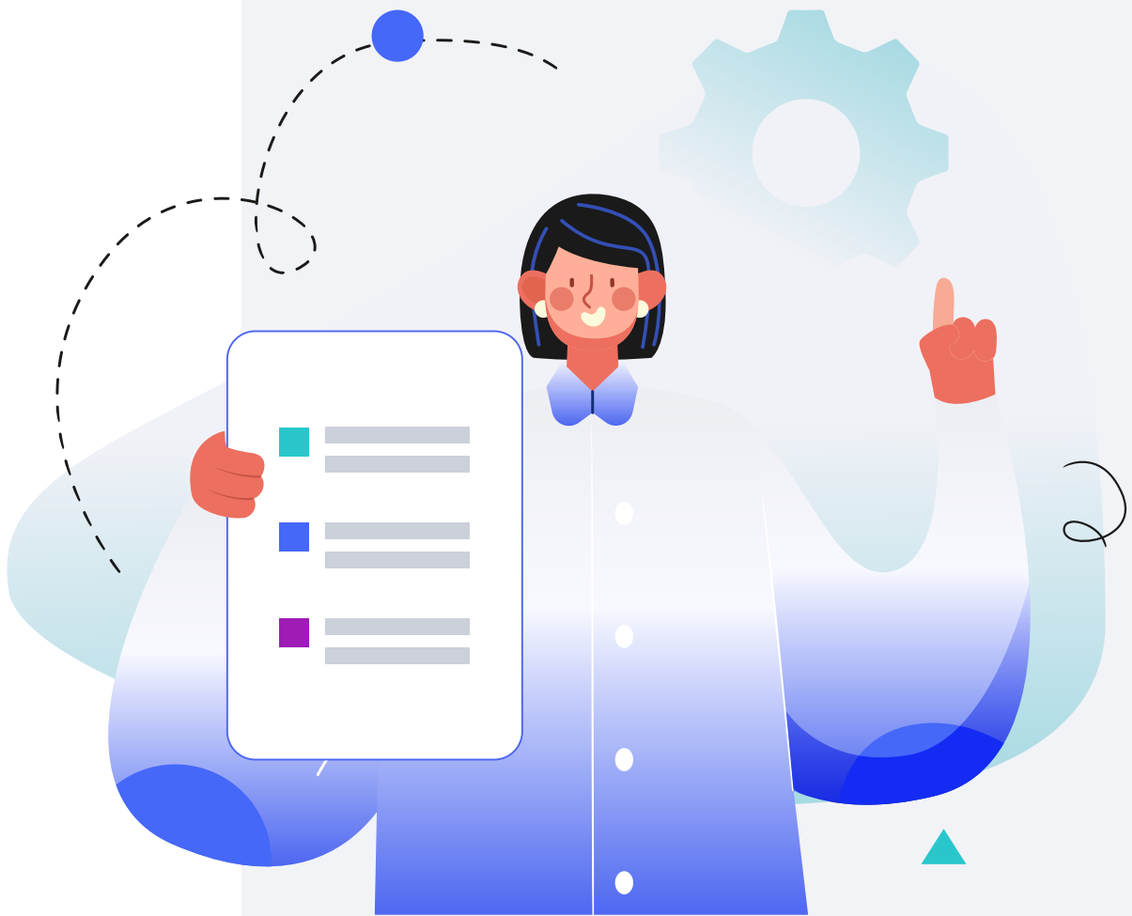
Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg

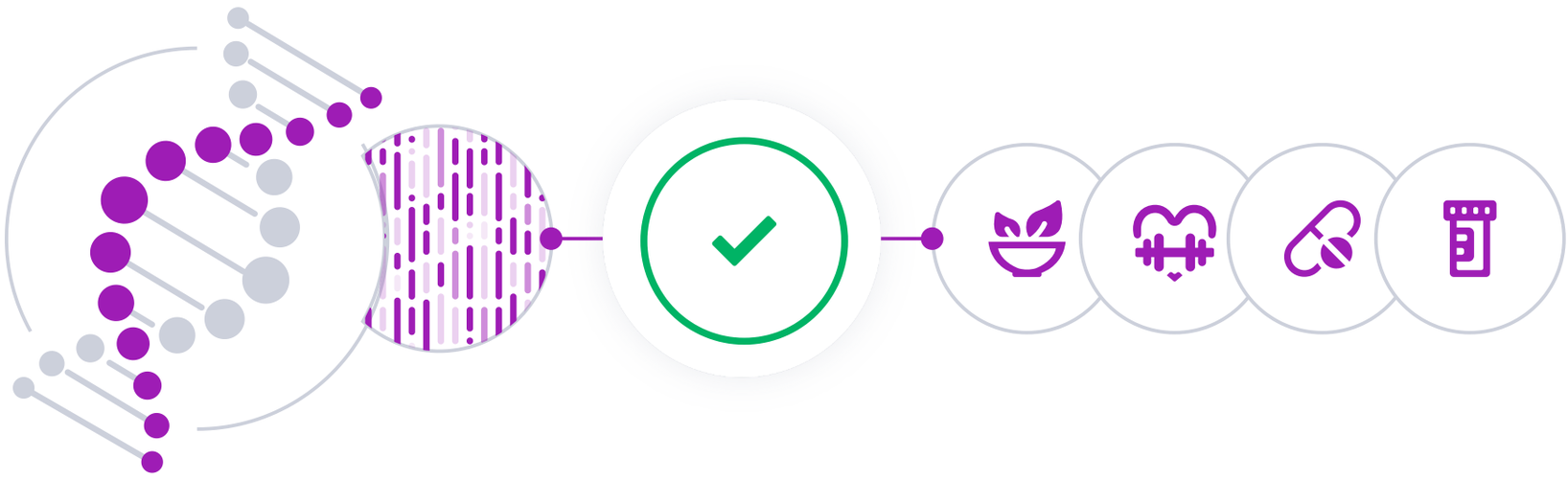


DISCLAIMER

This report does not diagnose this or any other health conditions. Please talk to a healthcare professional if this condition runs in your family, you think you might have this condition, or you have any concerns about your results.

How this works

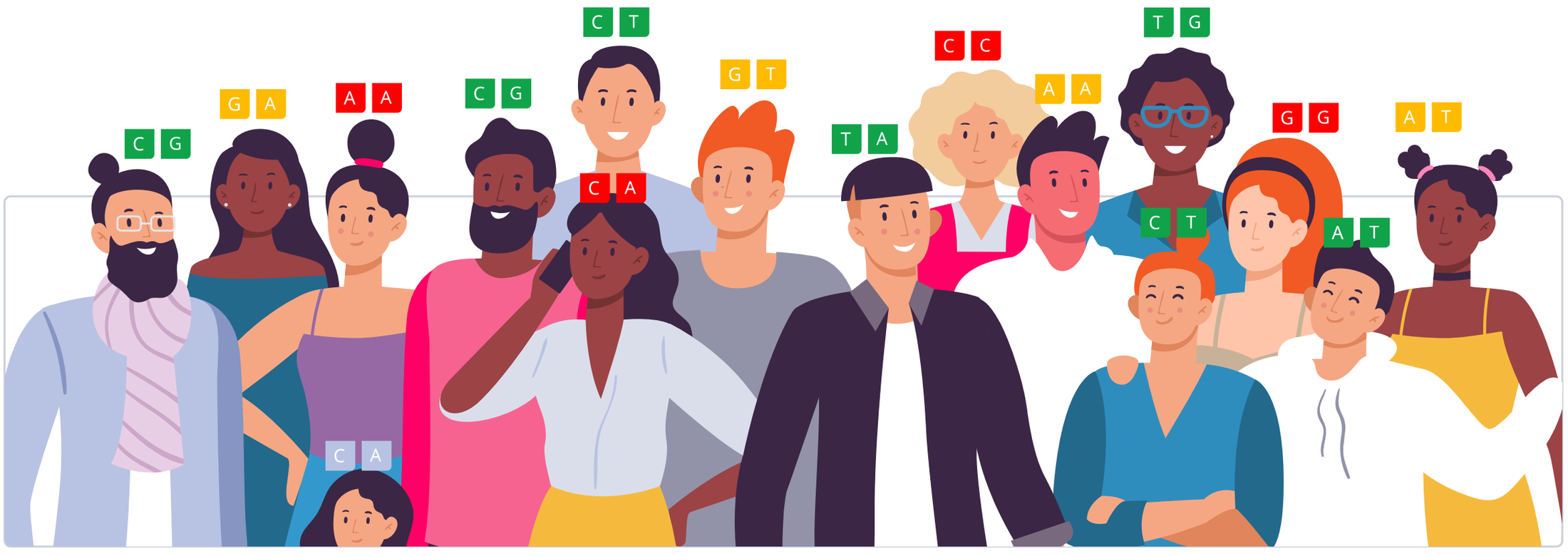
Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.



Similarly, our Trait Reports look at how your DNA influences your traits.

Your DNA is like an instruction manual — it contains a lot of information.
You can think of it as a blueprint for your body.

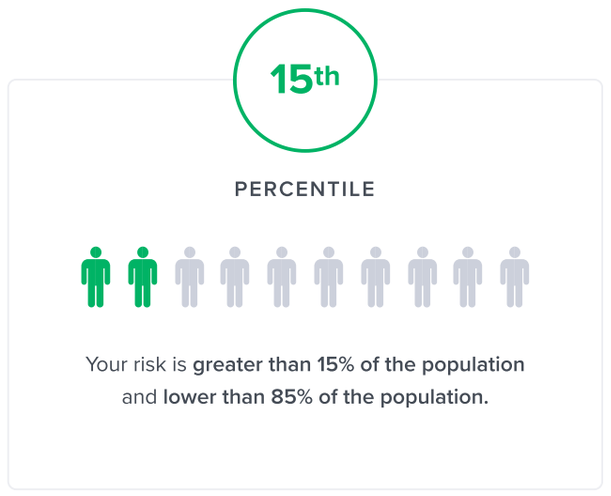
Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



We use artificial intelligence and machine learning to analyze all this information. We then summarize your results as a risk score or display it on a gauge.

When we give a risk score, the risk icon tells you if you are at a higher or lower risk compared to other people:

In total, we analyze up to 83 million genetic variants.



Genotype color info: AA You don't have any risk alleles | AA You have 1 risk allele | AA You have 2 risk alleles

Your risk is also displayed as a percentile. This will tell you how your risks compare to our sample population. The lower your percentile number, the lower your risk. The "50th percentile" would be an average risk.

Similarly, the gauge tells you your relative risk score compared to our sample population, or it indicates a specific trait or haplotype you are more likely to have based on your genetic variants.

When applicable, we also list top evidence-based recommendations that may help lower your risk. The focus is on recommendations that may be of benefit to you, based on your genetics.

Our recommendations come in four categories: lifestyle, diet, supplements and drugs.
The following icons tell you which category a recommendation falls into:

Our team of scientists also ranks each recommendation.
We rank based on impact and the strength of evidence in the medical literature.

Impact shows how strongly a recommendation will affect your health in a certain area.
Evidence is how much scientific support there is for the recommendation. Rankings are from 1 to 5 (low to high):

Impact

Impact scores range from 1-5. These scores reflect how much of an effect each recommendation can have. An impact score of 5 predicts the biggest effect.

When a recommendation affects something we can measure, we use those measurements to assign the impact score. For example, a recommendation that decreases cholesterol by 20% will have a higher impact score than one that decreases it by 5%.

Some recommendations affect things that we cannot directly measure, like stress or mood. For these, the impact score is based on how well they work relative to other recommendations and standard treatments. The best ones get the highest scores.

If there is a lot of research that shows a recommendation works especially well for your genotype, the impact score gets increased.

Recommendation Evidence

5 / 5

Recommendations that are considered effective and generally recommended by experts and medical bodies.

4 / 5

Recommendations that are considered likely effective and that have multiple independent meta-analyses and a great many studies supporting them.

3 / 5

Recommendations that are considered possibly effective and have many studies supporting them

2 / 5

Recommendations that have insufficient evidence, with two or several clinical trials supporting them, or many studies but with ambiguous results.

1 / 5

Recommendations that have insufficient evidence, with a single clinical trial, or with many studies most of which didn't find support for the recommendation.

0 / 5

No evidence in humans.

Genotype-specific Evidence

High-quality

Direct evidence that a recommendation helps more in people with your gene variant (many clinical trials, afew large clinical trials, or a meta-analysis).

Medium-quality

Direct evidence that a recommendation helps more in people with your gene variant (a few clinical trials or one large clinical trial).

Low-quality

Direct evidence that a recommendation helps more in people with your gene variant (a single clinical trial or more trials with inconsistent results).

Indirect

A recommendation may help more in people with your gene variant because it targets a specific gene or protein affected by your variant (e.g., MTHFR, dopamine).

In theory

A recommendation may help more in people with your gene variant because it targets a specific mechanism affected by your variant (e.g., inflammation, oxidative stress).

Some things to keep in mind:

- Genetics doesn’t play a considerable role in a condition or a trait.
- There is not enough research available to estimate a genetic predisposition.
- There are technical limitations to estimating or presenting a genetic predisposition.
- The topic is sensitive, and a genetic predisposition should only be estimated and presented by a healthcare professional.

Introduction

You've probably been to a restaurant and seen gluten-free options on the menu. Unless you're sensitive to gluten, you may not have given these labels a second glance.

Gluten is a protein found in the following grains and their products [R, R]:

- Wheat (flour, bread, pasta, crackers, pastries, etc.)
- Rye (flour, bread, crackers, pasta, pastries, beer, whiskey, etc.)
- Spelt (flour, bread, pasta, crackers, pastries, etc.)
- Barley (flour, beer, soups, stews, etc.)
- Triticale (flour, bread, etc.)

Some people cannot properly digest gluten. In fact, their immune systems may react to gluten as if it is dangerous [R, R].

To make matters worse, gluten is similar to a normal protein in the intestine. Sometimes, the immune system will attack both. This is called an autoimmune reaction. People with this type of reaction have celiac disease [R].

In people who are sensitive, gluten may cause symptoms like [R, R]:

- Diarrhea or constipation
- Fatigue
- Weight loss
- Bloating and gas
- Gut pain
- Nausea and vomiting

Celiac disease can cause serious complications. These may include [R]:

- A lack of healthy red blood cells (anemia)
- Weakened bones
- Problems with the nervous system

Celiac disease was once considered very rare. However, researchers now estimate that about 1-2% of all people have it [R].

The only effective treatment for celiac disease is a strict gluten-free diet. People with non-celiac gluten sensitivity may also benefit from a gluten-free diet. Consult with a healthcare professional before making any major dietary changes [R, R, R, R, R].

The following grains are gluten-free alternatives [R]:

- Rice
- Corn
- Buckwheat
- Quinoa
- Amaranth
- Teff

Genetics of Celiac Disease

Different alleles in these genes can produce different types of HLA-DQ structures. The **DQ2** type (especially the DQ2.5 subtype) is present in up to 98% of celiac disease patients, depending on the population. That is among the strongest known links to autoimmunity in the entire HLA system [R, R].

Two alleles — DQA1*0501 and DQB1*0201 — form the DQ2.5 haplotype, which codes for the DQ2.5 receptor on white blood cells. The DQ2.5 receptor binds gluten and presents it to T-helper cells, initiating widespread gut inflammation [R, R].

The ‘T’ variant of rs2187668 serves as a genetic marker — it tags the DQ2.5 haplotype with high precision. In other words, the vast majority of people with this allele will have this haplotype. A study of over 27,000 subjects identified this SNP as the primary genetic factor for celiac disease. People carrying the ‘T’ allele had over six times higher chances of being diagnosed with celiac disease. A smaller trial of 889 participants came to a similar conclusion [R, R].

The 'C' variant of rs74541084 tags the DQ8 haplotype, an additional marker for gluten sensitivity in people who don't carry DQ2.5.

Please note: this report only analyzes the HLA-DQ gene. Variants in many other genes have shown associations with gluten sensitivity.

TYPICAL GENETICS

Likely typical HLA-DQ genetics based on the genetic variants we looked at

75%

OF USERS SHARE THE SAME SCORE

You have the same genetic predisposition as **75% of our users.**

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
HLA-DQB1	rs2858331	AA
HLA-DQA1	rs2187668	CC
HLA-DQA2	rs7454108	TT

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

Your Recommendations

Your recommendations are prioritized according to the likelihood of it having an impact for you based on your genetics, along with the amount of scientific evidence supporting the recommendation.

You'll likely find common healthy recommendations at the top of the list because they are often the most impactful and most researched.

		DOSAGE
1	Gluten-Free Diet	
2	Probiotics	30 billion CFU

1

Gluten-Free Diet

IMPACT 5 / 5

EVIDENCE 5 / 5

How to implement

Remove all foods containing wheat, barley, and rye from your diet. This includes obvious sources like bread and pasta, as well as hidden sources in sauces, soups, and processed foods. Check labels for gluten-free certification, and aim to maintain this diet consistently, as even small amounts of gluten can cause symptoms to recur in sensitive individuals.

Description

A gluten-free diet is essential for individuals with celiac disease or gluten sensitivity. It helps prevent digestive issues and promotes overall health by avoiding foods containing gluten, a protein found in wheat, barley, and rye.

Gluten is a protein found in wheat and some other grains. **People with celiac disease have to follow a gluten-free diet to prevent gut damage.** A gluten-free diet eliminates all foods containing [R, R]:

- Wheat
- Barley
- Rye
- Malt
- Brewer's yeast

How it helps

Experts agree that a strict gluten-free diet is the best way to help with celiac disease. It can improve symptoms and the quality of life in those with the condition. The sooner a person starts a gluten-free diet, the more it may help. People with non-celiac gluten sensitivity may also benefit from a gluten-free diet [R, R, R, R].

Some people with IBS may be sensitive to gluten. If you are one of them, following a gluten-free diet may improve your IBS symptoms. According to a recent study, a gluten-free diet may also lower the risk of IBS [R, R, R, R, R, R].

Some foods are naturally gluten-free (i.e. fruits, vegetables, dairy). The following grains are gluten-free alternatives [R]:

- Rice
- Corn
- Buckwheat
- Quinoa
- Amaranth
- Teff

Oats may also be a safe alternative for most gluten-sensitive people [R].

In addition to naturally gluten-free options, some foods may be made in such a way to avoid gluten. Products labeled as "gluten-free" are made to be safe for those with gluten sensitivity [R].

Consult with a healthcare professional to determine how best to follow a gluten-free diet [R].

2

Probiotics

IMPACT 3 / 5

EVIDENCE 2 / 5

How to implement

Take a probiotic supplement containing 10 billion or more live cultures once daily, preferably with a meal or as directed by the packaging or a healthcare provider.

TYPICAL STARTING DOSE

30 billion CFU

Description

Probiotics are live beneficial bacteria and yeasts that can support gut health and digestive function when consumed as supplements or found in fermented foods like yogurt and sauerkraut. They may be beneficial to gut health, immune function, blood sugar, and mood.

Probiotic bacteria are "good" bacteria found mainly in the large intestine. They support your body and mind by [R, R, R, R, R, R, R, R]:

- Maintaining gut health
- Supporting a healthy immune system
- Improving your mood
- Helping to maintain healthy blood sugar

Prebiotics are certain types of fiber and other complex carbs that serve as food for gut bacteria. **They support gut health by helping boost the activity and growth of "good" bacteria** [R, R].

Prebiotics are also added to foods and supplements. Common prebiotic ingredients are [R, R]:

- Oligo-fructose
- Oligo-galactose
- Inulin

Mixtures of probiotics and prebiotics are known as **synbiotics** [R].

How it helps

Some studies have found that probiotics can improve gastrointestinal symptoms in celiac disease patients who adhere to a gluten-free diet. A systematic review and meta-analysis reported that probiotics improved gastrointestinal symptoms significantly when assessed by the Gastrointestinal Symptoms Rating Scale [R].

Probiotics have been shown to increase levels of beneficial bacteria like *Bifidobacteria*, which could support gut health in celiac disease patients [R].

There is some evidence suggesting that probiotic supplementation in genetically predisposed children might influence gut microbiota in a way that could be beneficial, though it does not reduce the risk of developing celiac disease [R].

However, the evidence is mixed and of overall low quality [R, R].

PERSONALIZED TO YOUR GENES

The SH2B3 gene codes for a protein that prevents gut inflammation by keeping the immune response in check [R, R, R].

Your genotype for this SNP has been associated with relatively higher rates of celiac disease — likely because it reduces SH2B3 expression, which may amplify the body's inflammatory response [R, R].

Probiotics may help suppress SH2B3-driven gut inflammation [R, R, R].

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
SH2B3	**rs3184504**	TC	