SelfDecode™

Ornithine

Biohacker Report

REPORT CATEGORY

DETOX

Sample Client

Report date: 15 January 2026

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Personal information

NAME

Sample Client

SEX AT BIRTH

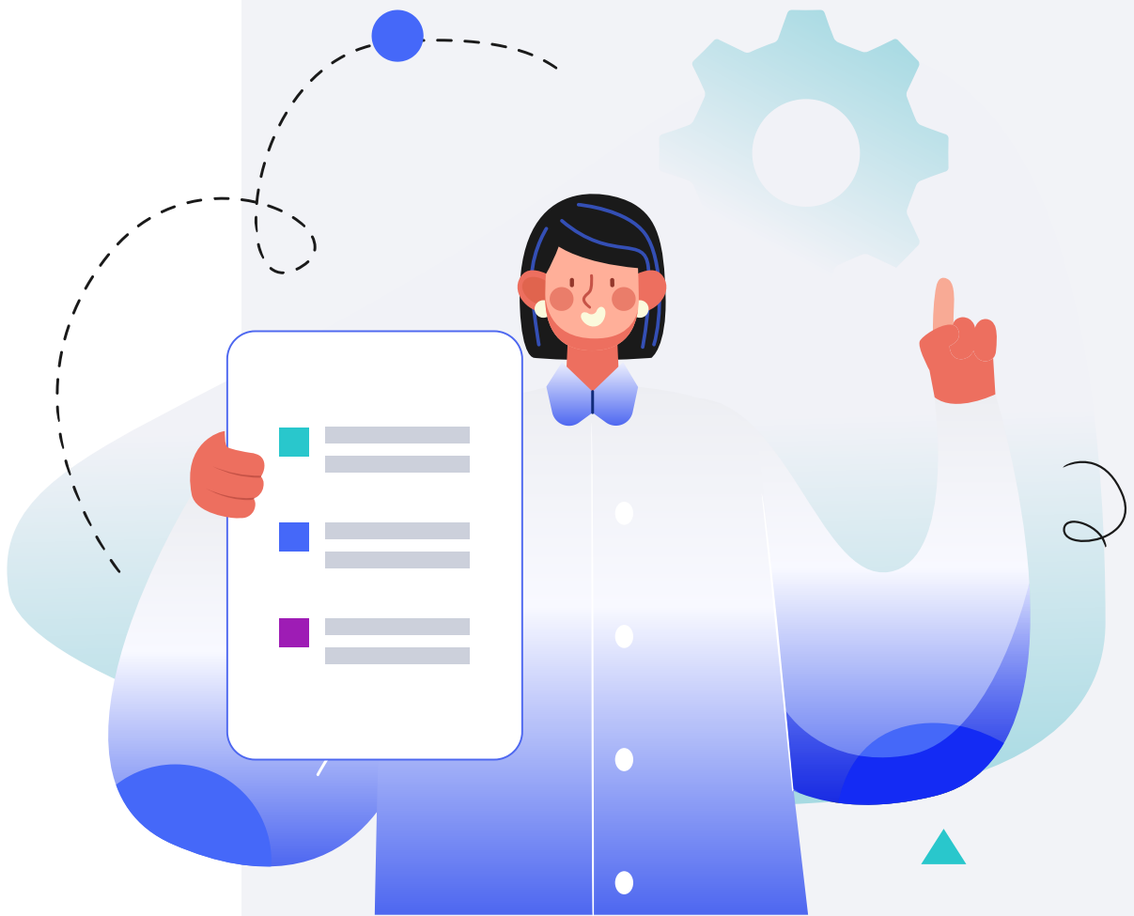
Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg

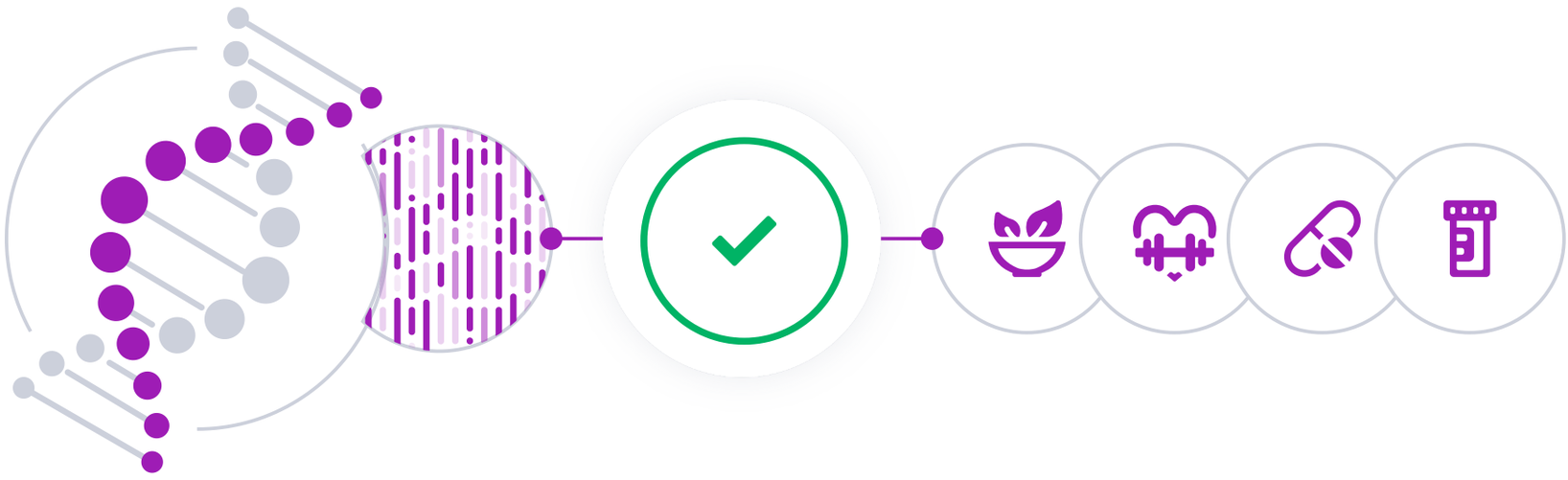


DISCLAIMER

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

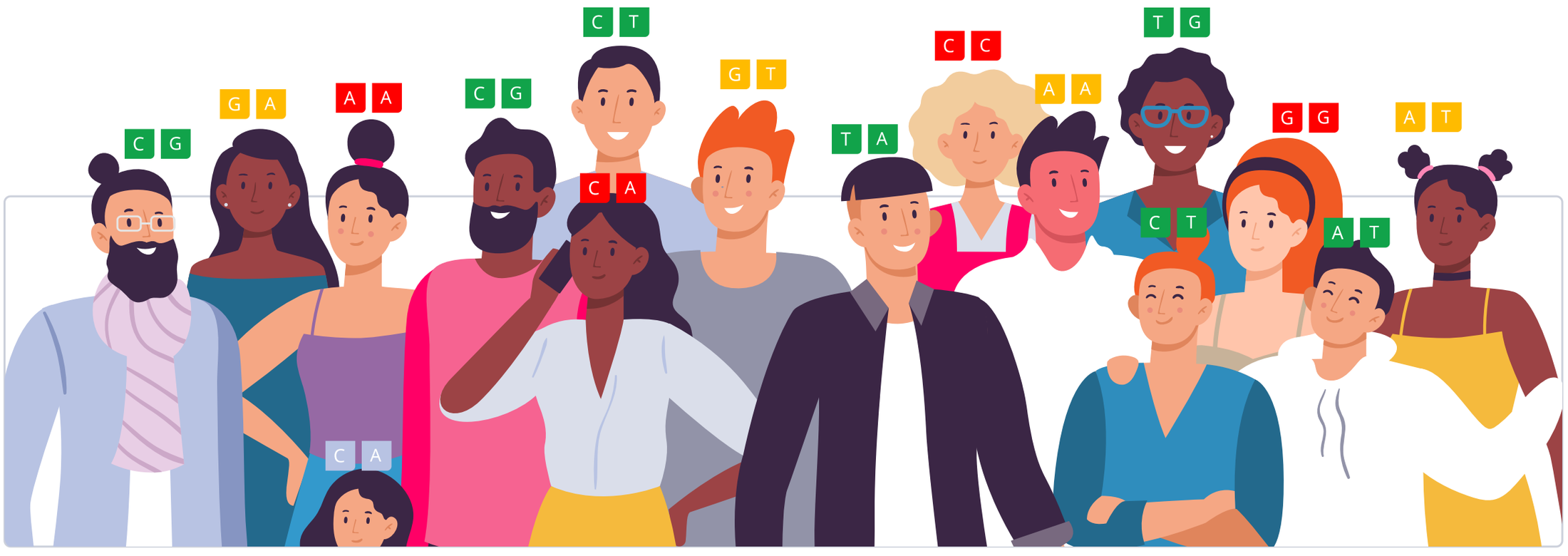
Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.



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.

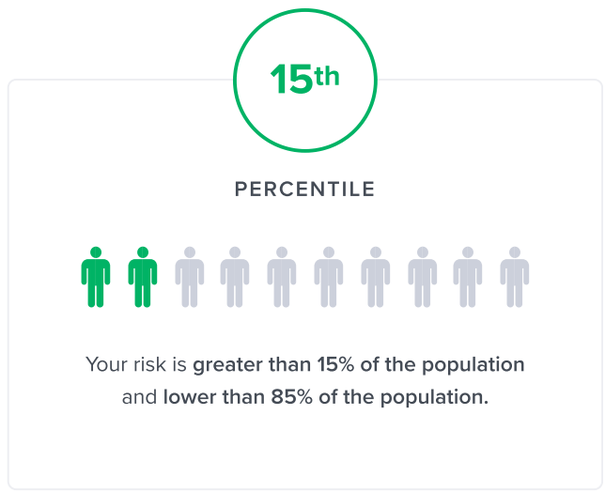
Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



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.



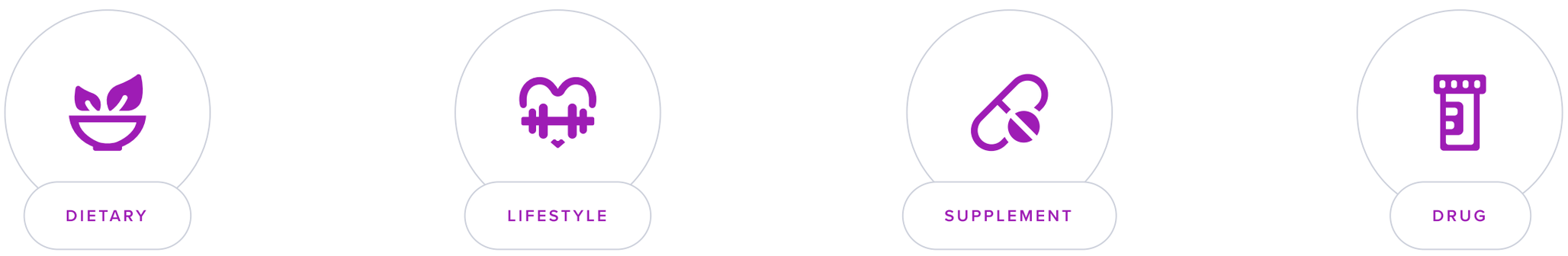
Genotype color info: AA You don't have any risk alleles | AA You have 1 risk allele | AA You have 2 risk alleles

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

Ornithine is a non-essential amino acid that doesn't directly make proteins. Ornithine plays an important role in the urea cycle, which is important for the removal of toxic ammonia and excess nitrogen from the body [R].

Ornithine is also important for wound healing [R].

We can get ornithine from the diet. Ornithine-rich foods include [R, R].:

- Whole grains, especially quinoa and amaranth
- Watermelon juice

Ornithine can also be taken as a supplement [R].

Factors Influencing Ornithine Levels

Up to 60% of differences in people's ornithine levels may be due to genetics. Involved genes influence ornithine synthesis and transport [R, R, R].

Ornithine plays a role in the urea cycle, which removes excess nitrogen. It's not an essential amino acid but can be conditionally essential under metabolic stress or certain liver conditions.

Low ornithine levels may be due to:

- Malnutrition and protein deficiency [R]
- Injury [R, R]
- Gut bleeding [R]
- Liver disease [R]
- Surgery [R]
- Rare inherited metabolic disorders [R, R, R]

In some cases, ornithine can increase due to:

- Pregnancy (urine) [R]
- Cancer [R, R]
- Rare inborn metabolic disorders [R, R, R, R, R]

In people with certain metabolic disorders, vitamin B6 (pyridoxine) can help in lowering ornithine levels [R, R].

Please note: This report doesn't test for rare inborn disorders mentioned above.

TYPICAL NEED

Likely typical need for ornithine based on 10,857 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
DNASE2	rs77440950	TT
SLC7A6	rs3961283	AA
SLC38A4	rs4587804	GG
CNOT9	rs921968	GT
GYPE	rs10024263	TC
ENPP3	rs17788484	CC
/	rs687289	AA

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.

1. L-Ornithine
2. Whole Grains
3. Watermelon
4. Dietary Protein

1

L-Ornithine

IMPACT 5 / 5

EVIDENCE 5 / 5

How to implement

Take 500mg to 2g of L-ornithine supplement daily before bed or as directed by your healthcare provider. This regimen can be continued on a long-term basis to support liver health and to potentially aid in improving sleep quality.

Description

L-ornithine is an amino acid often used in sports supplements for its potential to reduce exercise-related fatigue and support muscle recovery. It is also studied for its role in promoting detoxification processes in the body.

How it helps

Commercial L-ornithine supplements recommend between 0.5 and 8 g per day and warn against taking more than 10 g per day. Clinical studies have used a very wide range of doses for different purposes.

- **400 mg** per day improved sleep quality [R].
- **400 mg** in a single dose after drinking and before bed improved hangover recovery [R].
- **2 g per day** may or may not accelerate recovery after exercise [R, R].
- **100 mg per kg per day** (6.8 g/day for a 150lb person) increased anaerobic performance [R].
- **170 mg per kg per day** (11.6 g/day for a 150lb person) increased growth hormone [R].

Other forms include:

- L-ornithine HCl [R, R, R]
- Ornithine alpha-ketoglutarate [R, R]
- L-ornithine L-arginine [R]
- L-ornithine L-aspartate [R, R, R]

2

Whole Grains

IMPACT 4 / 5

EVIDENCE 3 / 5

How to implement

Incorporate at least three servings of whole grains into your daily diet. This can include consuming foods such as whole grain bread, brown rice, whole grain pasta, and oats. Aim to replace refined grains with whole grains at each meal for optimal benefits.

Description

Whole grains encompass a variety of grains like wheat, oats, and quinoa, where the entire grain kernel is intact. They are rich in fiber, vitamins, minerals, and antioxidants, supporting heart health and reducing the risk of chronic diseases.

Unlike refined grains, whole grains contain nutritious parts of the grain like bran and germ.

Whole grains provide many crucial nutrients, including:

- Fiber
- B-vitamins
- Iron
- Magnesium
- Phosphorus

Due to their high fiber content, whole grains don’t tend to spike blood sugar like refined grains do.

How it helps

Ornithine is considered non-essential; we don’t need to eat it because our bodies can make it. However, some foods measurably increase ornithine in the blood. **Surprisingly, the foods that appear to increase blood ornithine the most are grain proteins and watermelon** [R, R].

People who ate a diet high in grain proteins had significantly higher ornithine levels than those who ate mostly meat or dairy proteins in a study [R].

To increase your grain protein intake, choose **whole grains with high protein content like quinoa and amaranth** [R].

3

Watermelon

IMPACT 4 / 5

EVIDENCE 3 / 5

How to implement

Incorporate fresh watermelon into your diet, aiming to consume about 1-2 cups of cubed watermelon daily, either as a snack or part of your meals. It is best consumed fresh to maximize its hydrating effects and nutritional benefits.

Description

Watermelon is a refreshing fruit known for its high water content and being a good source of vitamins A and C. It is used to help stay hydrated and may support skin health due to its antioxidant properties.

How it helps

Ornithine is considered non-essential; we don't need to eat it because our bodies can make it. However, some foods measurably increase ornithine in the blood. **Surprisingly, the foods that appear to increase blood ornithine the most are grain proteins and watermelon** [R, R].

People who drank large quantities of watermelon juice (more than a kilogram per day) experienced an 18% increase in blood ornithine in a study [R].

4

Dietary Protein

IMPACT 2 / 5

EVIDENCE 2 / 5

How to implement

Include a variety of protein sources such as meat, fish, eggs, dairy, beans, and nuts in your diet every day, aiming for at least 0.8 grams of protein per kilogram of body weight. For more active individuals or those looking to build muscle, increase intake to 1.2 to 2.0 grams per kilogram of body weight daily, spread out over all meals to maximize absorption.

Description

Protein is essential for building and repairing tissues, supporting muscle growth, and maintaining overall bodily functions. Adequate protein intake is crucial for overall health and well-being.

Foods that are high in protein include:

- Eggs
- Nuts
- Beef
- Chicken
- Fish
- Yogurt
- Tofu
- Pork
- Cottage cheese

How it helps

Malnutrition, especially insufficient protein intake, may lead to ornithine deficiency [R].

Whole grains with high protein content like quinoa and amaranth may be particularly effective at providing ornithine [R].

Next Steps

Remember, your genes only tell one important part of your health story!

Now that you've seen your DNA-based results for this health topic, let's take a look at other contributing factors.

Your lab results

Your lab results are impacted by the combined effect of your genes, environment and lifestyle.

Lab tests will give you the best picture of your current health status, while your genes provide insight into your health predispositions and which recommendations are best for you.