

Threonine

Biohacker Report

REPORT CATEGORY —



NUTRITION

Sample Client

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Personal information

NAME

Sample Client

SEX AT BIRTH

Male

HEIGHT

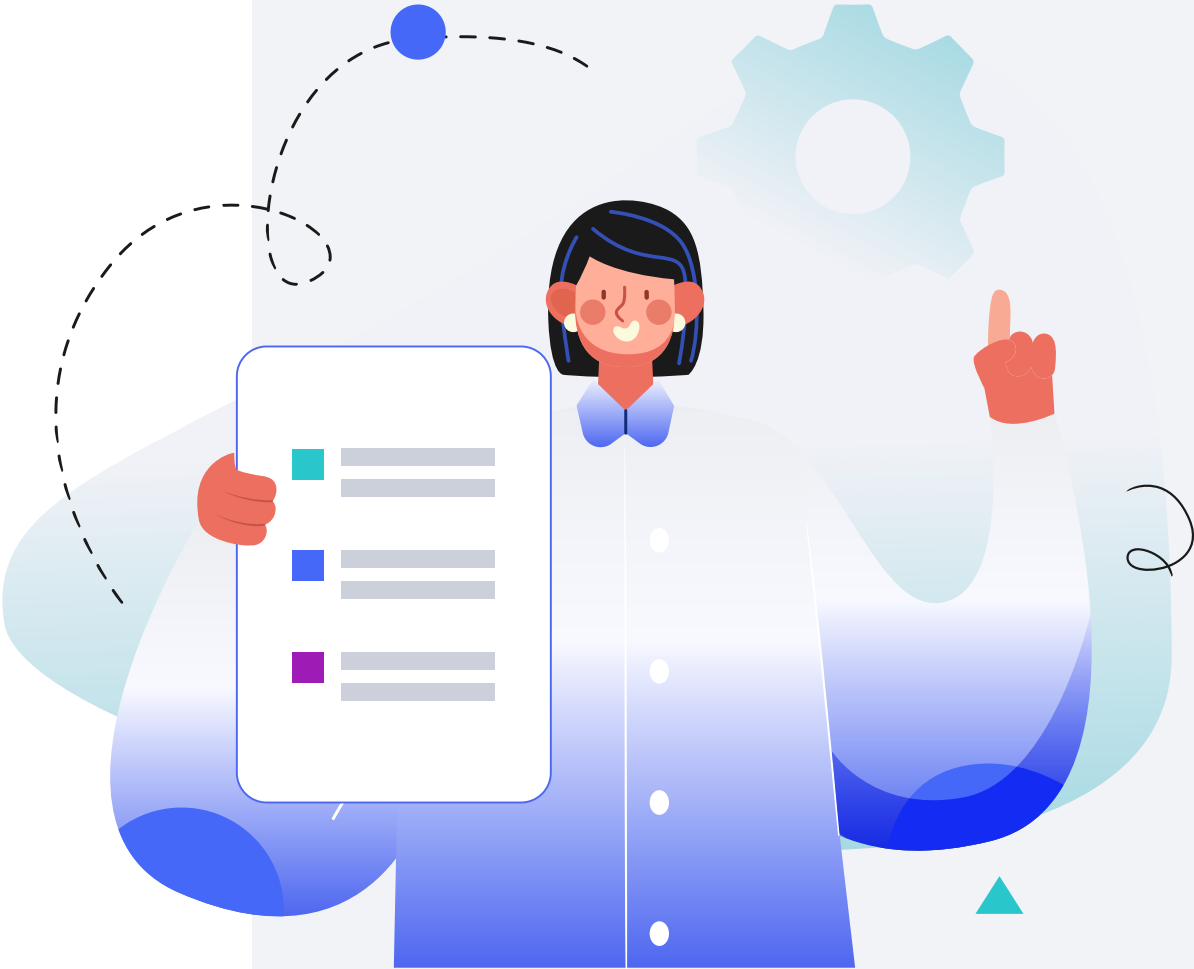
5ft 5" 165cm

WEIGHT

137lb 62kg

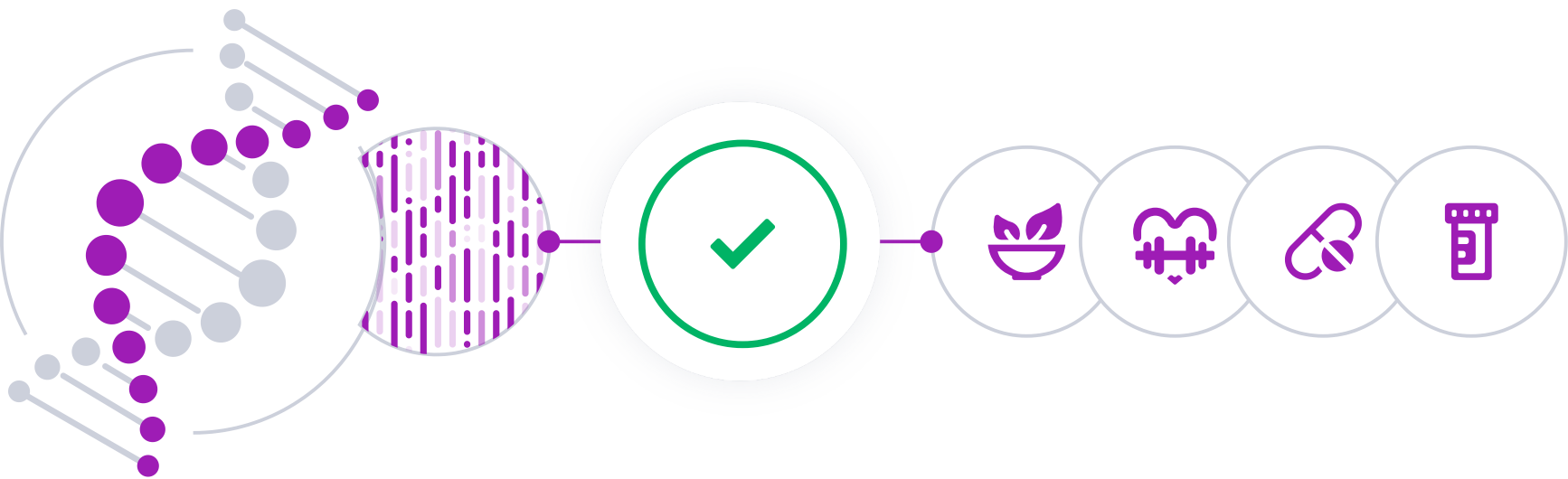
DISCLAIMER

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.

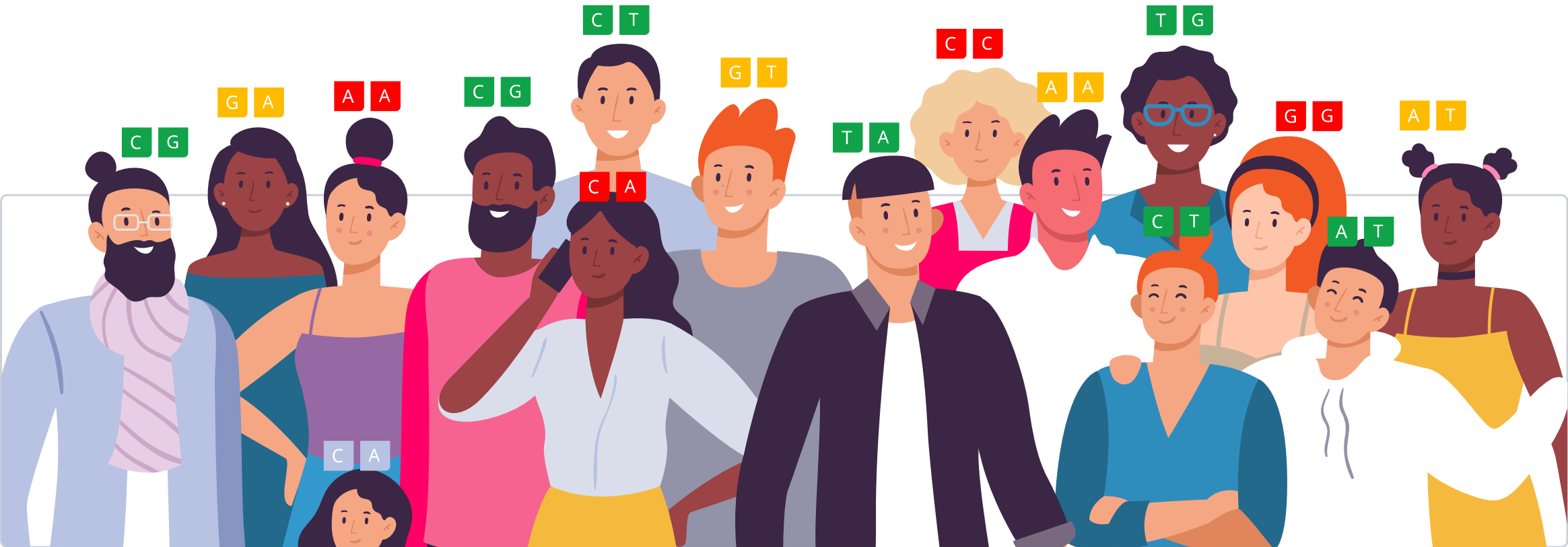


Similarly, our Trait Reports look at how your DNA influences your traits.



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.

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

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



Genotype color info:

AA

You don't have any risk alleles

AA

You have 1 risk allele

AA

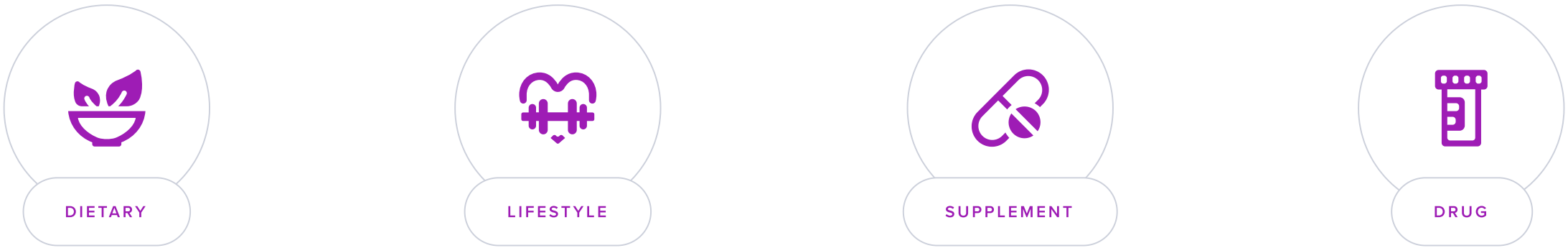
You have 2 risk alleles

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, a few 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

Threonine is an essential amino acid. This means that the human body can't make it and we need to get it through diet. Threonine-rich foods include [\[R\]](#):

- Meat
- Fish
- Cottage cheese
- Soy and soy products (tofu, tempeh, natto)
- Legumes (beans, lentils, etc)
- Pumpkin and sesame seeds

Threonine can also be taken as a supplement.

Threonine is a building block for proteins. It plays important roles in [\[R\]](#):

- Nervous system function
- Immune function
- Liver function
- Heart function
- Healthy bones

Threonine can also be converted into glycine and serine, which are involved in building collagen and muscle tissue [\[R\]](#).

Factors Influencing Threonine Levels

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

Low threonine levels may indicate a diet deficient in proteins.

In contrast, high levels can be due to:

- Threonine supplements
- Vitamin B6 deficiency [R]
- Zinc deficiency [R]



TYPICAL NEED

Likely typical need for threonine based on 11,107 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
MEIOB	rs1742425	GG
GCKR	rs1260326	TC
GLS2	rs2657879	GA
SLC38A4	rs2465216	CT
CPS1	rs715	CT
ELOC	rs72661853	AA
SLC16A7	rs74095612	CC

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		DOSAGE	
1	Dietary Protein	2	L-Threonine 500 mg

Dietary Protein

IMPACT



EVIDENCE



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

As an amino acid, threonine is found in dietary protein. Threonine-rich foods include [R]:

- Meat
- Fish
- Cottage cheese
- Soy and soy products (tofu, tempeh, natto)
- Legumes (beans, lentils, etc)
- Pumpkin and sesame seeds

2



L-Threonine

IMPACT

5 / 5

EVIDENCE

4 / 5

How to implement

Take 500 mg to 3 grams of L-threonine supplement daily, with water, preferably with meals to improve absorption. The exact dosage depends on individual health conditions and goals. Consult with a healthcare provider for personalized advice. This regimen can be followed indefinitely as part of a balanced diet to support overall health.

TYPICAL STARTING DOSE

500 mg

Description

L-threonine is an essential amino acid that is important for the production of proteins and neurotransmitters. It may also help to improve cognitive function, reduce stress, and protect against heart disease.

How it helps

L-threonine supplements are available for people who don't consume sufficient threonine in their diets or who want to use it for other health benefits. Typical doses range from 0.5 to 3 g/day.

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.