

Glycine

DNA Health Report

REPORT CATEGORY —



Sample Client

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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.

Personal information

NAME

Sample Client

SEX AT BIRTH

Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg



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

[Glycine](#) is a **non-essential amino acid**. This means that our bodies can make it from other amino acids, such as [serine](#) [\[R\]](#).

We can also get glycine from foods, such as [\[R\]](#), [\[R\]](#):

- Grains, especially rice
- Dairy
- Soy
- Meat

Glycine is crucial as a building block for proteins. It also plays important roles in [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Blood pressure control
- Brain function
- Fighting oxidative stress
- Collagen production

Low glycine levels may impair the production of the body's strongest antioxidant [glutathione](#). They are also linked to a higher risk of heart disease and diabetes [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Please note: *Due to potential safety concerns related to glycine supplementation, we recommend getting this amino acid from foods only* [\[R\]](#).

Factors Influencing Glycine Levels

Up to 80% of differences in people’s glycine levels may be due to genetics [R, R].

Genes involved may influence glycine breakdown. For example, the [CPS1](#) gene helps make an enzyme that removes products of glycine breakdown. *CPS1* variants may increase or reduce glycine levels [R, R, R, R].

Other factors linked to low glycine levels include [R, R, R, R, R, R]:

- Diets low in vegetables
- Obesity
- Diabetes
- Liver disease
- Rare genetic disorders

High glycine levels may result from [R, R, R, R, R]:

- Vitamin B6 deficiency
- Rare genetic disorders

Genetically lower glycine levels may be causally associated with:

- Overweight (increased risk) [R]
- Heart Health (increased risk for CHD). [R]
- High blood pressure (increased risk) [R]

Keep in mind that this report is not about the rare genetic disorders mentioned above. They are very rare and usually diagnosed in infancy.



Likely typical need for glycine based on 79 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
MAP2	rs185429841	CC
MAP2	rs139109203	GG
CPS1	rs1047891	AC
MAP2	rs190457931	GG
/	rs547975976	GG
MAP2	rs148805075	AA
MAP2	rs145006403	GG
MAP2	rs140729377	CC
MAP2	rs185444730	GG
MAP2	rs149399489	GG
CPS1	rs148372684	GG
PTH2R	rs115357300	GG
ERBB4	rs116364052	GG
PTH2R	rs10165384	AA
LANCL1	rs13013076	CC
MAP2	rs72997685	TT
PROX1	rs79687284	GG
MAP3K1	rs72754154	GG
ACADM	rs7515955	AA
ALDH1L1	rs10934753	AG
PCCB	rs61789561	GG
PCCB	rs61789561	GG
INSR	rs553564605	TT
INSR	rs553564605	TT
TBKBP1	rs76975491	CINS(T)
SLC38A11	rs36105243	CG
SLC38A11	rs36105243	CG
CPS1	rs139488844	CC
KANSL1L	rs116598794	CC
CPS1	rs147908012	AA
ERBB4	rs149521206	TT
MAP2	rs116695863	TT

GENE	SNP	GENOTYPE
MAP2	rs528951785	CC
MYL1	rs79347628	GG
MAP2	rs111960908	AA
MAP2	rs114339247	GG
/	rs77593502	AA
PHGDH	rs561931	GG
SLC38A4	rs2711697	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	Seaweed	2	Beef
3	Chicken	4	Collagen Peptides10 g
5	Glycine3 g	6	Collagen (Non-Hydrolyzed)5 g
7	Gelatin Powder	8	Pork
9	Salmon	10	Lamb
11	Shrimp		

1



Seaweed

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

Incorporate seaweed into your diet 2-3 times per week by adding it to salads, soups, or as a wrap for sushi and other ingredients. Seaweed can be consumed both in dried form as a snack or rehydrated in meals.

Description

Seaweed is a marine algae that is a source of vitamins A and C, iron, calcium, iodine, omega-3s, and dietary fiber. It is often consumed as a food and is valued for its potential to provide essential nutrients, including iodine, and support thyroid health.

Seaweed is a good source of iodine and also has vitamins A, C, E and K, along with folate, zinc, sodium, calcium and magnesium. A 2-tablespoon serving provides 116 mcg of iodine or 77%DV.

How it helps

Seaweed is high in an amino acid called Glycine, which supports brain, nervous system function, and skin health. Including seaweed in your diet may help maintain these body functions and potentially prevent conditions linked to their decline.

2



Beef

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

Incorporate lean beef into your diet 2-3 times per week, with a serving size of about 3-4 ounces (85-113 grams) per meal. Choose cuts like sirloin or round to minimize saturated fat intake.

Description

Beef is a rich source of high-quality protein, essential vitamins, and minerals like iron and zinc. Incorporating lean cuts of beef into a balanced diet can support muscle growth, overall nutrition, and iron intake.

Beef is an excellent source of many B-vitamins, protein, proline, and minerals like zinc and iron. Grass-fed uncharred beef is healthiest. Beef contains 34.82 mg of proline per gram.

How it helps

Beef is rich in essential amino acids, including glycine, which is crucial for maintaining healthy metabolic and muscular functions. Consuming beef can thus contribute to glycine levels in the body and ward off a deficiency.

3



Chicken

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

Incorporate chicken into your meals 2-3 times a week, preferably opting for lean cuts like breast meat. Cook it through methods such as grilling, baking, or boiling to avoid adding excess fats. Aim for a portion size of about 3-4 ounces (85-113 grams) per serving.

Description

Chicken is a lean source of protein and essential nutrients like vitamin B12 and selenium. It can be a healthy part of a balanced diet that supports muscle growth and overall nutritional well-being.

Chicken and particularly dark meat like the thigh, is a good source of omega-6s that also contains protein, vitamins, and even needed trace minerals like selenium. One chicken thigh contains 3792 mg of omega-6.

How it helps

Chicken is rich in protein, and proteins are made up of amino acids, including glycine. Consuming chicken will increase glycine levels in your body, helping to prevent glycine deficiency.

4



Collagen Peptides

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 10-20 grams of collagen peptides daily, mixing the powder into a glass of water, juice, or a smoothie. It is recommended to consume this supplement on an empty stomach to improve absorption, ideally first thing in the morning or right before bedtime for a period of at least 8-12 weeks to observe beneficial effects.

TYPICAL STARTING DOSE

10 g

Description

Collagen peptides are a form of collagen that is broken down into smaller, more easily absorbed molecules. They are commonly used in supplements and skincare products for their potential to promote skin elasticity, hair strength, and nail health.

[Collagen](#) is a protein that helps build skin, bones, and joints [\[R, R\]](#).

People use collagen supplements for [\[R, R, R, R\]](#):

- Joint pain
- Skin health
- Hair growth

How it helps

Collagen peptides are rich in glycine, a crucial component of collagen in the body. They can supplement your body's glycine levels, potentially help to rebuild your body's collagen, and possibly enhance skin health and joint function.

5



Glycine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 3 to 5 grams of glycine supplement per day with water, preferably before bedtime for sleep improvement or spread throughout the day for general health benefits. Continue indefinitely as needed, but consult a healthcare provider for long-term use beyond three months.

TYPICAL STARTING DOSE

3 g

Description

Glycine is an amino acid that may have calming and anti-inflammatory effects, potentially benefiting sleep quality and joint health.

If you can't get enough glycine from food sources, glycine supplements are available. Daily doses of up to **6 g** have been safely used for up to **4 weeks**. Consult your doctor before supplementing.

How it helps

Glycine is an amino acid that is crucial for many bodily functions including producing proteins and collagen, as well as supporting sleep and digestive health. Regular supplementation can maintain these functions, hence reducing the risk of associated conditions.

6



Collagen (Non-Hydrolyzed)

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take 5 grams of non-hydrolyzed collagen supplement daily. You can mix it with a beverage of your choice, such as water or juice, for easier consumption.

TYPICAL STARTING DOSE

5 g

Description

Collagen is a protein that plays a crucial role in maintaining skin, joint, and connective tissue health. Collagen supplements are believed to support skin elasticity, joint mobility, and overall skin and joint health.

[Collagen](#) is a protein that helps build skin, bones, and joints [\[R, R\]](#).

People use collagen supplements for [\[R, R, R, R\]](#):

- Joint pain
- Skin health
- Hair growth

How it helps

Non-hydrolyzed collagen provides many amino acids, including glycine. Regular intake can enhance the body's glycine levels, supporting cellular functions and preventing deficiencies.

7



Gelatin Powder

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Dissolve one to two tablespoons of gelatin powder in a cup of hot water, tea, or juice and drink it daily. Ensure to consume it consistently for at least one month to observe benefits.

Description

Gelatin powder is a source of collagen and protein that can support joint health, skin elasticity, and nail strength. It's often used as a dietary supplement to promote overall connective tissue well-being.

Gelatin powder is an excellent source of proline, with some protein (mainly collagen) and a bit of selenium.

How it helps

Gelatin powder is rich in Glycine, an amino acid which helps build proteins in the body. Consuming more Glycine (through gelatin) may therefore support physical functions such as muscle strength and metabolism, reducing the risk of deficiency.

8



Pork

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate lean cuts of pork, such as tenderloin or loin chop, into your diet 2-3 times per week, aiming for a portion size of about 3-4 ounces (85-113 grams) per meal. Cook it using healthy methods like grilling, baking, or broiling to minimize added fats.

Description

Pork is a meat obtained from pigs, and is a great source of zinc, protein, and iron, as well as leucine, selenium, phosphorus, and B-vitamins.

Pork is a good source of protein, chromium, selenium, phosphorus, zinc, and potassium. A 3-ounce serving provides 3.6 mcg of chromium or 10%DV.

How it helps

Pork is high in protein, containing the amino acid glycine which supports your body's muscle growth and overall metabolism. A diet rich in glycine might decrease the risk of developing metabolic disorders.

9



Salmon

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate at least two servings of salmon into your weekly diet, aiming for each serving to be about 3.5 ounces (100 grams), cooked. Choose wild-caught salmon when possible for higher omega-3 content.

Description

Salmon is a nutrient-rich fish known for its high content of omega-3 fatty acids, which can support heart health and reduce inflammation. It's also an excellent source of protein, vitamin D, and various minerals.

How it helps

A study with healthy subjects showed that salmon consumption increased omega-3 levels and decreased triacylglycerols and heart rate. Salmon protein intake lowered serum glucose and triglycerides and increased certain amino acids, including glycine [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

10



Lamb

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Include lamb meat in your diet 2-3 times per week, choosing lean cuts when possible. Portions should be about 3-4 ounces (about the size of a deck of cards) per serving.

Description

Lamb is rich in omega-3 fatty acids, has glycine, protein, iron, phosphorus, zinc, and selenium.

Lamb is rich in omega-3 fatty acids, has glycine, protein, iron, phosphorus, zinc, and selenium. Lamb contains 29.68 mg of glycine per gram.

How it helps

Consuming lamb, rich in protein, can contribute to your body's supply of glycine.

11



Shrimp

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate shrimp into your diet 2-3 times per week, either grilled, boiled, or baked, aiming for servings of about 3-4 ounces (85-113 grams) per meal. Avoid frying or preparing with high-fat sauces to maintain nutritional benefits.

Description

Shrimp are a type of shellfish known for their low calorie content and high protein levels. They are a good source of essential nutrients like iodine, selenium, and vitamin B12, supporting thyroid function, immune health, and nerve function.

Shrimp are a great source for protein and minerals like selenium, zinc, iron, potassium, magnesium, and phosphorus. A 3-ounce serving provides 40 mcg of selenium or 73%DV.

How it helps

Shrimp is rich in amino acid called glycine, which supports your body functions like DNA and collagen production, and maintaining healthy nervous system. Including more shrimp in your diet could therefore improve your glycine levels and aid these functions.

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.