

Arginine

DNA Health Report

REPORT CATEGORY —



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

[Arginine](#) is an **amino acid**, a building block for proteins in our bodies. Healthy people can produce arginine or get it from their diet. Arginine-rich foods include [R](#), [R](#):

- Seafood and algae
- Meat and poultry
- Nuts (e.g., hazelnuts, macadamia, pine nuts, walnuts, and Brazil nuts)
- Seeds
- Watermelon

Arginine supports **healthy blood vessels** by releasing a compound called [nitric oxide](#). It plays important roles in [R](#), [R](#), [R](#), [R](#), [R](#), [R](#):

- Heart health
- Blood pressure control
- Immune function
- Muscle growth
- Sexual function

Factors Influencing Arginine Levels

Up to 80% of differences in people's arginine levels may be due to genetics. Involved genes play a role in arginine transport and breakdown [R, R, R].

Low arginine levels can result from malnutrition. People with the following conditions may also have lower arginine levels [R, R, R, R, R, R]:

- Heart disease
- Kidney disease
- Gut surgery
- Cystic fibrosis
- Liver transplant
- Malaria
- Sickle cell disease

Arginine supplementation may increase its blood levels. Very high arginine levels may be caused by rare genetic disorders that are not the topic of this report [R, R, R].

Genetically higher arginine levels may be causally associated with:

- Heart Attack [R]
- Joint Pain [R]
- Heart health [R]



Likely typical need for arginine based on 10 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
ENPP3	rs17788484	CC
SLC7A2	rs56335308	GG
PRMT7	rs7199750	GG
FARSA	rs11085824	GA
CPS1	rs715	CT
GYPE	rs12499429	AG
CITED2	rs592423	CA
CNOT9	rs10189479	AC
SLC38A4	rs17666239	TA
HBS1L	rs9402686	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.

DOSAGE		DOSAGE	
1	Salmon	2	Seaweed
3	Pumpkin Seeds	4	Egg white powder
5	English walnuts	6	Clams
7	Alpha-Ketoglutarate (AKG)	8	Soy Protein
9	Watermelon		

1



Salmon

IMPACT

2 / 5

EVIDENCE

2 / 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

In a clinical trial involving overweight adults, regular consumption of farmed Atlantic salmon for four weeks resulted in reduced triglyceride levels and increased HDL cholesterol. It also lowered large VLDL and chylomicron particle counts while raising large LDL particles in a dose-dependent manner. Salmon intake reduced total triglycerides, VLDL, and chylomicron triglyceride content, and altered lipoprotein particles in a way associated with reduced cardiovascular disease risk. Another 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 acid concentrations. In HIV-infected patients with dyslipidemia, salmon oil reduced triglycerides. However, a separate trial found that salmon consumption did not significantly alter various health markers in overweight/obese participants. [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Salmon is high in arginine. Consuming salmon can increase your arginine levels, which may improve blood flow, enhance immune function, and offer potential benefits for heart health.

2



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 rich in an amino acid called L-arginine, which increases nitric oxide in your body. Nitric oxide, in turn, relaxes your blood vessels, improves blood flow, and thus can help prevent cardiovascular conditions related to arginine deficiency.

3



Pumpkin Seeds

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

Incorporate a handful of pumpkin seeds (about 28 grams) into your diet daily. You can add them to your breakfast cereal, sprinkle them over a salad, blend them into smoothie bowls, or simply eat them as a snack. This practice can be continued indefinitely as part of a healthy dietary pattern.

Description

Pumpkin seeds, also known as pepitas, are the edible seeds of the pumpkin.They are rich in protein, antioxidants, iron, zinc, magnesium, manganese, and phosphorus. The compounds in pumpkin seeds may benefit heart health and immune function.

Pumpkin seeds are rich in arginine, protein, antioxidants, iron, zinc, magnesium, manganese, and phosphorus. Pumpkin seeds contain 54.18 mg of arginine per gram.

How it helps

Pumpkin seeds are an excellent source of arginine, an amino acid that the body uses for protein synthesis and boosting the immune system. Consuming pumpkin seeds can increase your arginine levels, thus supporting optimal body functioning and immune health.

4



Egg white powder

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate egg white powder into your diet by adding approximately 20-30 grams of the powder into smoothies, shakes, or baking recipes. This should be done daily as part of your meal planning to ensure consistent protein intake.

Description

Egg white powder is a good source of protein, phenylalanine, B-vitamins, potassium, magnesium, and selenium.

Egg white powder is a good source of protein, phenylalanine, B-vitamins, potassium, magnesium, and selenium. Egg white powder contains 27.56 mg of phenylalanine per gram.

How it helps

Egg white powder is a rich source of arginine, an essential amino acid your body needs but can't make on its own. Consuming egg white powder can aid in the production of proteins and growth hormones, improving heart health, wound healing, immune function, and thus, preventing arginine deficiency.

5



English walnuts

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate a handful of English walnuts, approximately 1 ounce or 28 grams, into your daily diet. You can eat them as a snack, add them to salads, or use them as a topping for yogurt or cereal.

Description

English walnuts are a nutritious nut variety rich in omega-3 fatty acids, antioxidants, and vitamins. Consuming them as part of a balanced diet may support heart health, cognitive function, and overall nutritional well-being.

English Walnuts are the only nut high in ALA, and also contain vitamin B6 and E, copper, manganese, and phosphorus. A 1-ounce serving contains 2.57g of ALA. Black walnuts are also good, but only have 0.76g of ALA.

How it helps

English walnuts are rich in Arginine, an amino acid that promotes increased blood flow in your body by creating nitric oxide, which dilates your blood vessels. This can help avoid conditions associated with poor circulation.

6



Clams

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate cooked clams into your diet 2-3 times per week, either as part of main dishes, in soups, or salads. Each serving should be about 3-4 ounces (85-113 grams).

Description

Clams are a seafood source rich in essential nutrients like protein, vitamin B12, and minerals. Including clams in your diet can support healthy blood and nerve function, as well as overall nutritional well-being.

Clams provide manganese, vitamin B12, protein, and omega-3’s along with being a good source of riboflavin. A 3-ounce serving provides 0.9 mg of manganese or 39%D.

How it helps

Clams are rich in an amino acid called arginine, which aids in maintaining good health and preventing disease by boosting your immune system. Regular consumption of clams potentially increases your body’s arginine levels, assisting in tissue healing, removing waste through the kidneys, and maintaining heart and hormone function.

7



Alpha-Ketoglutarate (AKG)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take alpha-ketoglutarate (AKG) as a dietary supplement in a dose of approximately 1-2g per day, preferably with meals to aid in its absorption. The exact dosage may vary based on the specific product and individual health needs, so it's important to follow the label instructions or consult a healthcare provider for personalized advice. This supplementation can be ongoing, with periodic evaluations to assess its effects on your health.

TYPICAL STARTING DOSE

1 g

Description

Alpha-ketoglutarate (AKG) is a key molecule in the Krebs cycle, crucial for energy production in cells. It plays a role in amino acid synthesis and nitrogen transport. In supplement form, it's claimed to improve athletic performance and support recovery, but the scientific evidence for these benefits is limited.

How it helps

In hemodialysis patients, a study showed that combining alpha-ketoglutarate with calcium carbonate over one year improved amino acid metabolism. **Plasma urea decreased, while histidine, arginine, proline, and certain keto acids increased.** This combination treatment effectively reduced hyperphosphatemia [R].

8



Soy Protein

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Include 20 grams of soy protein in your daily diet. This can be achieved by consuming soy-based products such as tofu, soy milk, or soy nuts throughout the day.

TYPICAL STARTING DOSE

20 g

Description

Soy protein is a high-quality plant-based protein derived from soybeans. It is commonly used in vegetarian and vegan diets and may support muscle growth, weight management, and overall nutritional needs.

Soy is a common food in many cuisines around the world, especially Asian cuisines [\[R\]](#).
It's a great source of [\[R\]](#), [\[R\]](#):

- Plant-based protein
- Fiber
- Omega-3 fats
- Antioxidants (isoflavones)

Soy-based foods include [\[R\]](#):

- Tofu
- Tempeh
- Edamame
- Miso
- Natto

Soy protein and soy isoflavones are also available as supplements.

How it helps

Soy protein is rich in the amino acid arginine, which is essential for many body functions such as wound healing and immune function. Consuming soy protein can help boost your arginine levels and potentially prevent deficiencies that could lead to health disorders.

9



Watermelon

IMPACT

1 / 5

EVIDENCE

1 / 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

Watermelon is rich in arginine, an amino acid that helps with blood flow and heart health. Therefore, including watermelon in the diet can increase arginine levels, thereby enhancing cardiovascular health.

- A crossover study involving 23 healthy subjects found that consuming watermelon juice for 3 weeks increased fasting plasma arginine and ornithine concentrations, especially with the higher dose, but fasting citrulline concentrations did not increase [\[R\]](#).
- In a double-blind, placebo-controlled study with 21 postmenopausal women, drinking pasteurized watermelon juice for 4 weeks increased lycopene levels but did not affect arginine, citrulline, or vascular measures [\[R\]](#).

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.