

# Coenzyme Q10

## DNA Health Report

REPORT CATEGORY —



Sample Client

Report date: 15 January 2026

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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

[Coenzyme Q10](#) (CoQ10) is a compound that helps enzymes work better. By doing so, CoQ10 helps improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Energy levels
- Antioxidant protection
- Heart health
- Muscle strength
- Blood sugar control

**The amount of CoQ10 made by your body decreases as you get older.** Luckily, you can also get it from food or supplements. Good sources of CoQ10 include [\[R\]](#), [\[R\]](#):

- Organ meats
- Fatty fish
- Whole grains

Many chronic conditions and nutrient deficiencies can increase CoQ10 needs. [CoQ10 supplements](#) are available for people lacking this nutrient. People use them to reduce [oxidative stress](#), fatigue, and more [\[R\]](#), [\[R\]](#).

**Note that CoQ10 is fat-soluble.** This means that taking it with a fatty meal should help you absorb it better [\[R\]](#).

**Please note:** *CoQ10 may reduce the effectiveness of blood thinners such as warfarin. Talk to your doctor before taking CoQ10* [\[R\]](#).

# Coenzyme Q10 Genetics

In addition to the above factors, genetics may also play a role in CoQ10 needs. Involved genes may play a role in CoQ10 production and transport [R].

Brain cells spend a lot of CoQ10. Hence, it is no surprise that variants affecting CoQ10 are also linked to certain mental and cognitive problems [R].

However, keep in mind that your diet, environment, and other genetic variants also influence your coenzyme Q10 needs.



## Likely typical need for coenzyme Q10 based on 23 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

| GENE    | SNP         | GENOTYPE |
|---------|-------------|----------|
| BCR     | rs77049423  | GG       |
| KLF12   | rs76617118  | GG       |
| AGGF1   | rs13155649  | AA       |
| BTG1    | rs61745943  | AA       |
| FUT8    | rs7141874   | AA       |
| TTC39B  | rs686030    | AA       |
| NDUFS4  | rs41270301  | GC       |
| OR51A2  | rs35996509  | CC       |
| SERINC3 | rs12480807  | GG       |
| /       | rs7081147   | CC       |
| SMC6    | rs898838    | TT       |
| SLC27A4 | rs41313321  | GA       |
| HSF2    | rs150057671 | GA       |
| NEGR1   | rs55927656  | TT       |
| DRD5    | rs146799867 | CC       |
| DCC     | rs74681568  | CC       |
| OLAH    | rs12573070  | GG       |
| USP14   | rs9952641   | AA       |
| PRMT8   | rs17769758  | GG       |
| /       | rs11591201  | GG       |
| LUZP1   | rs9426691   | AA       |
| GRIK2   | rs283228    | 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      | Chicken              | 2      | Beef      |
| 3      | Spinach              | 4      | Avocado   |
| 5      | Coenzyme Q10 (CoQ10) | 6      | Ubiquinol |
|        | 100 mg               |        | 100 mg    |
| 7      | Cauliflower          | 8      | Pork      |
| 9      | Beef Heart           | 10     | Soy       |
| 11     | Chicken Liver        | 12     | Sardines  |
| 13     | Pistachios           | 14     | Mackerel  |
| 15     | Acetyl-L-Carnitine   |        |           |
|        | 500 mg               |        |           |

1



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 beneficial for CoQ10 because it is among the foods that contain this nutrient, which is essential for cellular energy production and might slow down age-related health issues. Incorporating chicken in your meal can increase your CoQ10 levels which helps in boosting your heart health and energy levels.

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 Coenzyme Q10 (CoQ10), a nutrient that helps in energy production and antioxidant protection in cells. Regular consumption can enhance your body's CoQ10 levels, reducing the risk of deficiency-related conditions.

3



Spinach

IMPACT

2 / 5

EVIDENCE

1 / 5

## How to implement

Incorporate one cup of fresh spinach or half a cup of cooked spinach into your daily diet. You can add spinach to salads, smoothies, omelets, or pastas to easily increase your intake.

## Description

Spinach is a leafy green vegetable packed with essential nutrients, including vitamins A and K, iron, and folate. Incorporating spinach into the diet supports eye health, bone health, and overall nutrition.

**Spinach** is a good source of molybdenum, folate, calcium, and iron, as well as vitamins A, C, and K1. A ½ cup serving provides 8 mcg of molybdenum or 18%DV.

## How it helps

Spinach offers a modest amount of CoQ10 and is also rich in a variety of other nutrients, contributing to overall cellular health and energy.

4



Avocado

IMPACT

1 / 5

EVIDENCE

1 / 5

## How to implement

Incorporate half to one whole avocado into your daily diet. You can add it to salads, sandwiches, or use it as a healthy fat substitute for spreads or dressings.

## Description

Avocado is a nutrient-dense fruit known for its creamy texture and healthy monounsaturated fats. It is packed with vitamins, minerals, and dietary fiber, and may support heart health, skin health, and overall nutrition.

[Avocado](#) is a fruit first cultivated in Mexico in 500 BCE [\[R\]](#), [\[R\]](#).

**You can eat it raw in salads, sandwiches, and dips.** Avocado oil has recently become popular, but it’s much less nutritious than the whole fruit.

Avocado is rich in antioxidants, vitamins, minerals, and fiber. It may support [\[R\]](#):

- Heart health
- Healthy weight
- Healthy aging

## How it helps

Avocados are rich in Coenzyme Q10 (CoQ10), a beneficial antioxidant that boosts energy, supports heart health and promotes healthy aging. Including avocados in your diet could therefore potentially increase your CoQ10 levels, helping to prevent deficiencies that can impact these areas of health.

5



Coenzyme Q10 (CoQ10)

IMPACT

1 / 5

EVIDENCE

1 / 5

## How to implement

Take a 100 mg Coenzyme Q10 (CoQ10) supplement once daily with a meal that contains fat for better absorption.

TYPICAL STARTING DOSE

100 mg

## Description

Coenzyme Q10 (CoQ10) is a naturally occurring antioxidant that plays a crucial role in cellular energy production. It is often taken as a supplement to support heart health, improve energy levels, and provide antioxidant protection, especially for individuals with certain medical conditions or as they age.

[Coenzyme Q10](#) (CoQ10) is a compound that helps enzymes work better. By doing so, CoQ10 helps improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Energy levels
- Antioxidant protection
- Heart health
- Muscle strength
- Blood sugar control

**The amount of CoQ10 made by your body decreases as you get older.** Luckily, you can also get it from food or supplements. Good sources of CoQ10 include [\[R\]](#), [\[R\]](#):

- Organ meats
- Fatty fish
- Whole grains

## How it helps

Coenzyme Q10 (CoQ10) isn't a condition but a supplement. This compound helps your cells produce energy and also acts as an antioxidant, protecting cells from free radicals and supporting heart health.

6



Ubiquinol

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 100 to 200 mg of ubiquinol daily, preferably with a fatty meal to enhance absorption. This dosage can be adjusted based on individual health needs and under the guidance of a healthcare professional. Continue this supplementation daily for ongoing support of heart health and energy levels.

TYPICAL STARTING DOSE

100 mg

Description

Ubiquinol is the reduced form of coenzyme Q10 (CoQ10), a compound that plays a crucial role in energy production within cells. It is used as a supplement to support heart health, improve energy levels, and combat oxidative stress.

How it helps

Ubiquinol, the active form of CoQ10, essentially fuels your cells and aids in protecting them from oxidative damage. It can help in conditions of CoQ10 deficiency by enhancing energy production, improving heart health, and boosting overall well-being.

In a study involving ten older men, a 2-week ubiquinol supplement increased plasma CoQ10 levels significantly, while ubiquinone had an insignificant effect. Ubiquinol appeared more effective for CoQ10 enhancement [\[R\]](#).

In a study of 21 healthy older adults, CoQ10 bioavailability was assessed for three formulations. The investigational product (Q10Vital®) had 2.4 times higher bioavailability than the standard product (ubiquinone). The bioavailability of ubiquinol (comparative product) showed a 1.7-fold increase but was not statistically significant. All formulations mainly resulted in blood CoQ10 as ubiquinol [\[R\]](#).

7



Cauliflower

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate cauliflower into your meals at least 2-3 times a week. You can consume it raw in salads, steamed as a side dish, or roasted with a drizzle of olive oil for a healthy snack or part of your main meal.

Description

Cauliflower is a nutritious vegetable high in vitamins, minerals, and fiber. It's a versatile ingredient that can be used in various dishes and may support digestive health and provide essential nutrients for overall wellness.

**Cauliflower** is a good source of vitamins C, K, and B6, as well as potassium, folate, manganese, with small amounts of others. A ½ cup serving provides 26 mg of vitamin C or 29%DV.

How it helps

Cauliflower contains CoQ10 and essential nutrients that aid in maintaining cellular health and function.

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 a good source of Coenzyme Q10 (CoQ10), an antioxidant that your body produces naturally and which cells use for growth and maintenance. A regular intake of pork can therefore help maintain or increase your CoQ10 levels and potentially protect your cells from oxidative damage.

9



Beef Heart

IMPACT

1 / 5

EVIDENCE

1 / 5

## How to implement

Incorporate beef heart into your meals 2-3 times a week. It can be grilled, braised, or stewed. For a balanced diet, accompany it with vegetables and whole grains.

## Description

Beef heart is a nutrient-dense organ meat that provides a concentrated source of essential nutrients, including iron, B vitamins, and coenzyme Q10. It is considered a nutritious food choice that can promote heart health and overall well-being when included in a balanced diet.

## How it helps

Beef heart is a rich source of CoQ10, which supports the function of cells and can be beneficial for cardiovascular health due to its role in the production of energy in cells.

10



Soy

IMPACT

1 / 5

EVIDENCE

1 / 5

## How to implement

Incorporate soy-based products such as tofu, soy milk, and edamame into your daily diet. Aim for at least one serving per day, equivalent to about a cup of soy milk, a half-cup of cooked soybeans, or a 3-ounce piece of tofu.

## Description

Soy is a legume native to East Asia, and its health benefits include being a source of plant-based protein, fiber, and various vitamins and minerals. It is known for its potential to support heart health, reduce cholesterol levels, and provide essential nutrients in vegetarian and vegan diets.

**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 [\[R\]](#):

- Soy beverages
- Tofu
- Tempeh
- Edamame
- Miso
- Natto

Soy protein and soy isoflavones are also available as supplements.

## How it helps

Soybeans are rich in coenzyme Q10 (CoQ10), a substance that helps produce energy in your cells. Regularly consuming soybeans can therefore increase your CoQ10 levels, potentially helping prevent CoQ10 deficiency-related conditions.

11



Chicken Liver

IMPACT

1 / 5

EVIDENCE

1 / 5

## How to implement

Incorporate chicken liver into your meals 1-2 times per week, aiming for portions of about 100 grams (3.5 ounces) per serving. You can cook it by pan-frying, baking, or incorporating it into dishes like pâtés or spreads.

## Description

Chicken liver is a nutrient-dense food that is rich in iron, vitamin A, and other essential nutrients. It can be a valuable addition to the diet to support healthy blood and overall nutritional health.

## How it helps

Chicken liver is not only rich in CoQ10 but also in various other nutrients that are essential for maintaining the overall health of the body.

12



Sardines

IMPACT

1 / 5

EVIDENCE

1 / 5

## How to implement

Incorporate two to three servings of sardines into your diet each week. You can eat them grilled, steamed, or straight from the can as part of salads, sandwiches, or as a snack. Each serving should be about 3.5 ounces (100 grams), which is roughly one can of sardines.

## Description

Sardines are small, oily fish known for their rich content of omega-3 fatty acids, calcium, B12, and vitamin D. Consuming sardines can support heart health, bone strength, and provide essential nutrients, and they are typically found in coastal waters.

**Sardines** are a good source of iron, omega-3 fatty acids, and a host of vitamins and minerals including calcium, iron, and vitamin D. A 2-sardine serving provides 2 mg of iron or 11%DV.

## How it helps

Sardines are an excellent dietary source of CoQ10, omega-3 fatty acids, and other vital nutrients that may support heart health and energy production.

13



Pistachios

IMPACT

1 / 5

EVIDENCE

1 / 5

## How to implement

Incorporate a handful of pistachios (about 1-2 ounces) into your daily diet. You can add them to your breakfast cereals, salads, or simply snack on them throughout the day. Do this regularly for ongoing heart health benefits and to aid in maintaining a balanced diet.

## Description

Pistachios are a type of nut native to Asia but grown extensively in the Mediterranean. They are packed with healthy fats, fiber, protein, and various vitamins and minerals, like vitamins C, B6, and E, as well as potassium, copper, and iron. They are also rich in antioxidant and anti-inflammatory compounds, which can help lower cholesterol levels and support weight management.

The pistachio (*Pistacia vera L*), known as **the “green nut”**, is a nut native to Asia but widely cultivated in the Mediterranean. Pistachios have **low fat content** and high levels of [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Unsaturated fats
- Vitamins (C, B6, E, K, thiamin)
- Minerals (Potassium, copper, iron, and magnesium)

Pistachios also have a high **antioxidant and anti-inflammatory** effect [\[R\]](#).

## How it helps

Pistachios contain a substantial amount of Coenzyme Q10, which helps in energy production within cells and acts as an antioxidant. Regular consumption can therefore help maintain optimal levels of CoQ10 in the body and avert related deficiencies.

14



Mackerel

IMPACT

1 / 5

EVIDENCE

1 / 5

## How to implement

Incorporate mackerel into your diet 2-3 times per week, preferably choosing baked or grilled preparation methods to preserve its nutritional quality.

## Description

Mackerel is a fatty fish high in omega-3 fatty acids, which are known for their anti-inflammatory properties and potential cardiovascular benefits. Regular consumption of mackerel can support heart health and provide essential nutrients like vitamin D and selenium.

**Mackerel** is a good source of omega-3s along with histidine, vitamins D and B12, protein, selenium, phosphorus, and magnesium. Mackerel contains 11.37 mg of histidine per gram.

## How it helps

Mackerel is rich in Coenzyme Q10, a substance that your body's cells require for energy production. Thus, by eating mackerel, you can potentially increase your CoQ10 levels, which supports heart health and slows down the aging process.

15



Acetyl-L-Carnitine

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 500-1,000 mg of Acetyl-L-Carnitine per day, split into 2 or 3 doses, with or without food. Joe prefers taking 500 mg in the morning. It can be taken indefinitely for chronic conditions or for a period of several months for acute concerns.

TYPICAL STARTING DOSE  
500 mg

Description

Carnitine is a protein building block (amino acid). It comes in many forms, such as acetyl-L-carnitine. Acetyl-L-carnitine may help with nerve damage and mood problems.

Carnitine is a protein building block (amino acid). It comes in many forms, such as acetyl-L-carnitine [R, R, R].

Acetyl-L-carnitine may help with [R, R, R]:

- Nerve damage
- Mood problems
- Cognitive decline

Doctors are also studying its potential effect on drug addiction [R].

How it helps

Acetyl-L-Carnitine may help improve mitochondrial function by assisting in the transport of fatty acids into the mitochondria where they are used for energy production.

# 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.