

DHA (Omega-3)

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

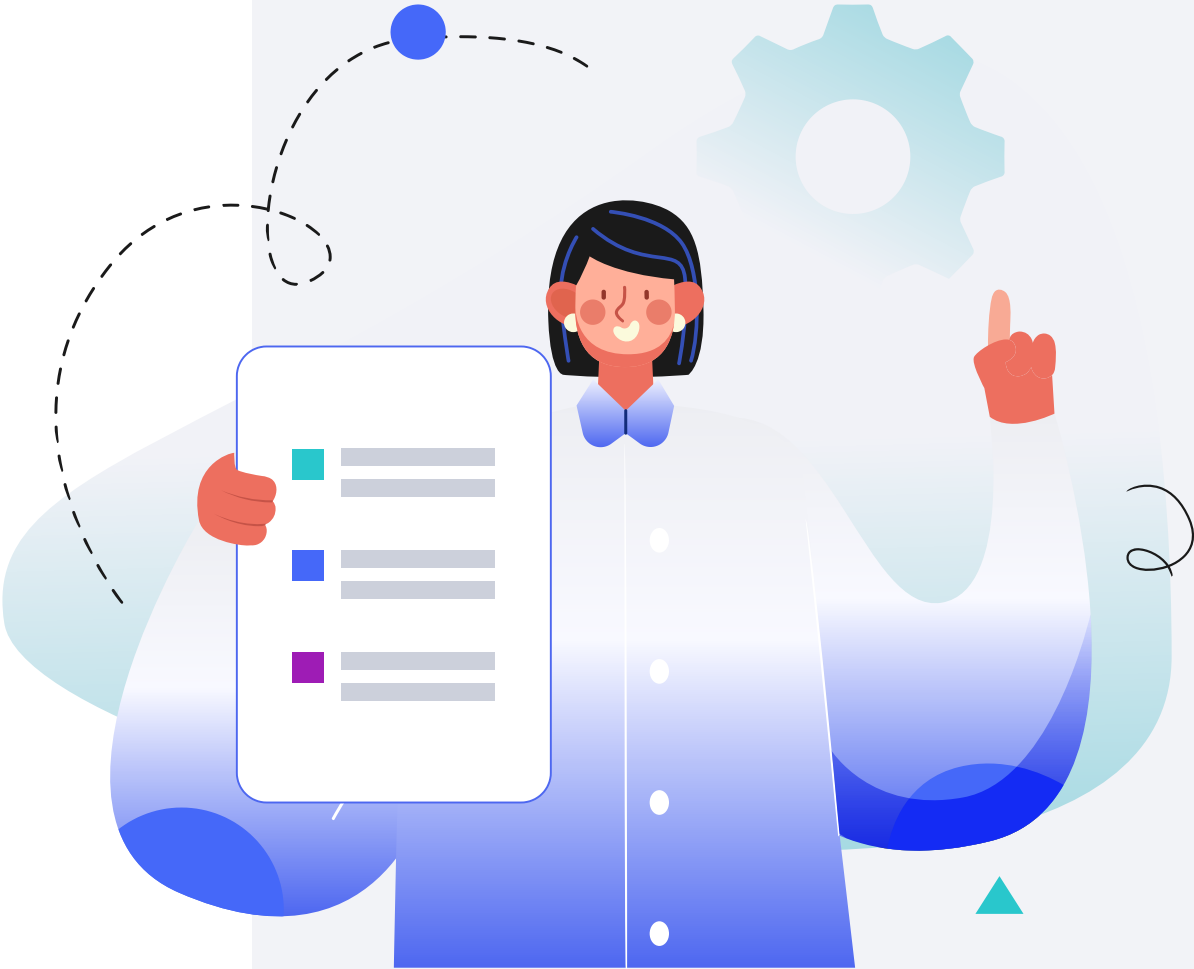
Male

HEIGHT

5ft 5" 165cm

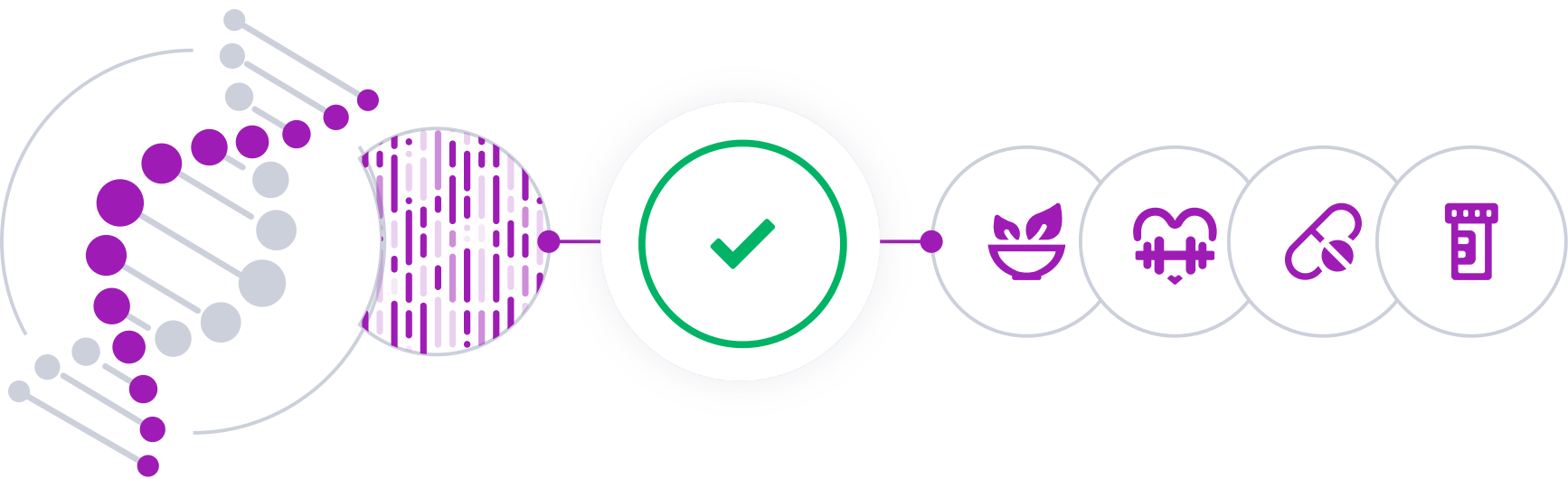
WEIGHT

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

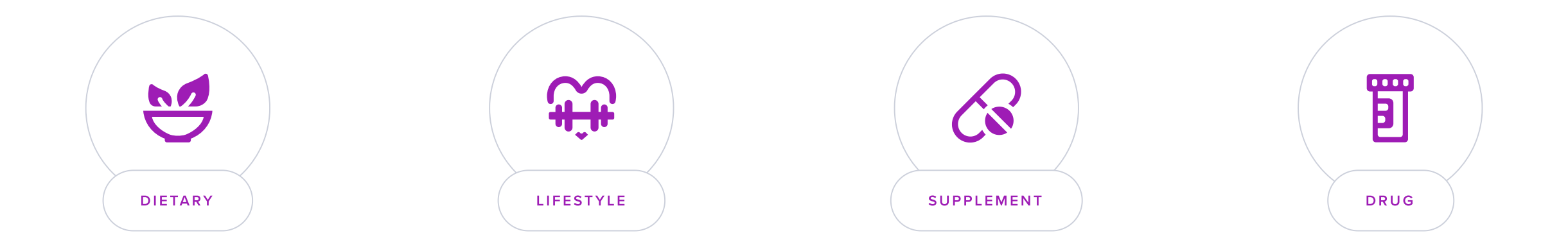
You have 2 risk alleles

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

DHA is one of the most important omega-3 fatty acids. It plays crucial roles in [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Growth
- Brain function
- Heart health
- Eye health

It may help by [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Improving memory
- Lowering triglyceride levels
- Reducing inflammation

Our bodies can produce DHA from alpha-linolenic acid (ALA), another omega-3 fatty acid, but only in small amounts. Hence, it’s beneficial to get DHA from foods, such as [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Fish (e.g., salmon, herring, mackerel, sardines, and tuna)
- Seafood (e.g., marine algae, oysters, and shrimps)
- Eggs

DHA is also available in omega-3 supplements [\[R\]](#), [\[R\]](#).

Some experts recommend getting **250-500 mg of omega-3s (DHA+EPA)** per day. That’s roughly the amount available in [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- 1-2 ounces of sardines
- 3-6 ounces of oysters
- 1-2.5 ounces of salmon

Factors Influencing DHA Levels

People may be prone to low DHA levels if they are [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Overweight
- Smoking
- On a vegan or some vegetarian diets

People on a Western diet may also lack DHA. Western diets are high in omega-6 fatty acids, which may displace DHA from our cells [\[R\]](#).

Up to **10%** of differences in people’s DHA levels may be due to genetics [\[R\]](#).

Involved genes may influence fat production, transport, and storage [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).



Likely typical need for DHA based on 26 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
/	rs11235247	GG
TNFSF10	rs11914753	CC
FADS2	rs174579	CC
TMEM258	rs174532	GG
NOS3	rs1799983	TT
MACROD2	rs12481689	AA
KCNK17	rs6921231	AA
/	rs6553050	TT
MAP7	rs13191834	TT
ANKS1A	rs3800433	GG
WSB1	rs17703271	TT
COL11A1	rs11164689	GT
PIK3C2A	rs7949405	AA
/	rs2129588	CC
ADRA1A	rs558455	GG
TMEM258	rs108499	TC
SNX17	rs4665972	CC
TSPAN31	rs2277324	AG
PRR11	rs2291193	GA
SYCP2L	rs953413	AG
MYOM1	rs949306	AG
WDR70	rs7736605	GG
CITED2	rs10499212	GG
FADS2	rs174583	CC
FADS2	rs174577	CC
FADS2	rs174576	CC
FADS2	rs174550	TT
FADS2	rs174547	TT
FADS2	rs174546	CC
TMEM258	rs174538	GG
TMEM258	rs174537	GG
TMEM258	rs174535	TT

GENE	SNP	GENOTYPE
AHI1	rs2092556	TT
FADS1	rs2727270	CC
AHI1	rs4896151	CC
AHI1	rs1547079	TT
G2E3	rs7149414	GG
FADS2	rs1535	AA
TMEM258	rs102275	TT
MAU2	rs10401969	TT
TMEM132D	rs265603	TG
FADS1	rs99780	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	Krill Oil	1 g	2	Tuna	
3	Oysters		4	DHA (Omega-3)	200 mg
5	Sardines		6	Herring	
7	Shrimp		8	Mackerel	
9	Salmon		10	Flaxseed Oil	15 g
11	Pistachios		12	Trout	
13	Fish		14	Sea Bass	
15	Chia Seeds		16	Omega-3 (Fish Oil)	2000 mg

1



Krill Oil

IMPACT

4 / 5

EVIDENCE

3 / 5

How to implement

Take 1 to 3 grams of krill oil daily as a dietary supplement, preferably with a meal to enhance absorption. It's often available in soft gel form, making it easy to swallow. Continue this regimen consistently for best results, typically reviewing its effectiveness and any need for adjustments with a healthcare provider after a few months.

TYPICAL STARTING DOSE

1 g

Description

Krill oil is a source of omega-3 fatty acids, primarily in the form of phospholipids. It can promote cardiovascular health, joint comfort, and may have anti-inflammatory properties.

How it helps

In 10 placebo-controlled trials of 551 participants, supplementation with krill oil (0.3-4 g/day omega-3) for 2-12 weeks increased serum DHA by 36%, at least as effectively as fish oil. Krill oil high in phospholipids was most effective [\[R, R, R, R, R, R, R, R, R, R\]](#).

In 3 non-placebo-controlled trials of 83 healthy volunteers, a single dose of phospholipid krill oil (1680-4000 mg EPA+DHA) was more effective than fish oil, krill meal, or ethyl esters at incorporating EPA and DHA into plasma phospholipids [\[R, R, R\]](#).

Krill oil is rich in omega-3 fatty acids, particularly DHA.

2



Tuna

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

Incorporate tuna into your meals 2-3 times per week, aiming for a serving size of about 3.5 ounces (100 grams) per meal. Choose fresh or water-packed tuna instead of oil-packed to reduce unnecessary calorie intake.

Description

Tuna is a type of saltwater fish commonly consumed worldwide, rich in lean protein, omega-3 fatty acids, and essential vitamins and minerals. Its health benefits include heart health support, improved brain function, and reduced inflammation. Tuna is often included in diets for conditions like cardiovascular disease prevention and cognitive enhancement.

Tuna is a source of niacin, vitamin D, as well as being a very good source of protein and omega-3 fatty acids. A 3-ounce serving has 8.6 mg of niacin or 54%DV.

How it helps

Tuna is high in omega-3 fatty acids, known as DHA, which supports brain health and reduces inflammation throughout the body. Regular consumption can therefore help maintain your omega-3 levels and potentially prevent related deficiencies or conditions.

3



Oysters

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

Consume 3-5 medium-sized oysters, which are about 50-100 grams, two to three times a week. This ensures an adequate intake of essential nutrients like zinc without excessive heavy metal consumption.

Description

Common to coastal areas around the world, oysters are a mullusk that has been harvested for thousands of years. Oysters are a rich source of protein, vitamins (especially B12), zinc, iron, copper, and omega-3 fatty acids.

Oysters are an excellent source of iodine, iron and are loaded with other vitamins and minerals, especially copper and vitamin B12. A 3-ounce serving provides 93 mcg of iodine or 62%DV.

How it helps

Oysters are rich in Omega-3 fatty acids, specifically DHA, which is crucial for brain and heart health. Regular consumption can boost your DHA levels, potentially lowering your risk of certain health conditions like heart disease.

4



DHA (Omega-3)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take an omega-3 supplement containing DHA at a dosage of 200-500 mg daily, preferable with a meal to improve absorption. It's recommended to continue this supplementation as part of your daily regimen to support heart, brain, and joint health.

TYPICAL STARTING DOSE
200 mg

Description

DHA is an omega-3 fatty acid found in fatty fish and algae-based supplements. It is essential for brain health and has been associated with cognitive function, cardiovascular health, and reducing inflammation in the body.

An **EPA/DHA supplement** can be taken to help meet omega-3 fatty acid needs not achieved through diet. Supplement amounts are generally 250-500mg/d though there are no current official recommendations other than for ALA.

How it helps

Omega-3 (DHA) is an essential fatty acid that your body can't produce on its own, so intake via supplements can be very beneficial. It has been linked to improved heart and brain health, with potential to reduce risk of certain diseases.

5



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 rich in omega-3 fatty acids, like DHA, which support heart health and reduce inflammation in the body. Regularly consuming sardines can therefore help prevent a deficiency in these vital nutrients.

6



Herring

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate herring into your diet 2-3 times per week, aiming for a serving size of about 3.5 ounces (100 grams) each time. You can enjoy it grilled, baked, or as part of salads and sandwiches.

Description

Herring is a fatty fish rich in omega-3 fatty acids, protein, and essential vitamins and minerals. Consuming herring as part of a balanced diet can support heart health, brain function, and overall well-being.

Herring is a great source of omega-3 fatty acids, antioxidants, vitamins A, D, and B12, and protein. A 3-ounce serving provides 0.94 g of DHA and 0.77 g of EPA.

How it helps

Eating herring provides a rich source of Omega-3 fatty acids like DHA, which improves heart health and brain functionality by reducing inflammation and oxidative stress. Regular Omega-3 intake can help to prevent Omega-3 deficiency and related health complications.

7



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 a rich source of omega-3 fatty acids, including DHA, which supports brain function and heart health. Regularly consuming shrimp can thus boost your omega-3 levels and help prevent deficiencies that could lead to various health issues.

8



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 Omega-3 fatty acids, like DHA, which supports healthy brain function and can reduce inflammation throughout your body. Regular consumption can help protect against cognitive decline and many inflammation related diseases.

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

Eating salmon provides a high amount of omega-3 fatty acids, particularly DHA, which supports brain, heart, and eye health. Regularly incorporating salmon into your diet can help maintain adequate levels of DHA and prevent deficiencies.

10



Flaxseed Oil

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 1 to 2 tablespoons (15-30 g) of flaxseed oil daily. It can be taken with or without food. For best results, use consistently for at least 2 months.

TYPICAL STARTING DOSE

15 g

Description

Flaxseed oil is a source of healthy fats, particularly alpha-linolenic acid (ALA), an omega-3 fatty acid. It can help support cardiovascular health and may have anti-inflammatory properties when used as part of a well-rounded diet.

[Flaxseed](#) is a common ingredient in bakery products. Some people also use it as a health food to support digestion [\[R\]](#).

Flaxseed is rich in many compounds, including [\[R\]](#):

- Vitamins and minerals
- Protein
- Fiber
- Omega-3 fatty acids ([ALA](#))

How it helps

A high dose (60 g/day for 12 weeks) of flaxseed oil **increased the levels of EPA and DHA while decreasing the AA/EPA ratio** in a placebo-controlled trial of 30 adults with ADHD [\[R\]](#).

11



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

In a phase I randomized, placebo-controlled clinical trial on multiple sclerosis patients, PEGylated nanoliposomes containing pistachio unsaturated oils increased levels of DHA and EPA, reduced MMP-9 levels, and promoted a Th2-biased immune response with decreased inflammation. Patients also experienced fewer relapses, improved disability scores, and reduced T2 lesions [\[R\]](#).

12



Trout

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Integrate trout into your diet 2-3 times per week, either grilled, baked, or steamed, aiming for a serving size of about 3-4 ounces (85-113 grams) per meal.

Description

Trout is a type of freshwater fish known for its rich content of omega-3 fatty acids and vitamins A, D, and B12, which are beneficial for heart health and cognitive function. Including trout in one's diet can support overall cardiovascular wellness and brain health.

Trout is not only rich in vitamin D, but also vitamins A and B12, as well as full of protein and good amounts of calcium potassium, magnesium, and niacin. A 3 ounce serving has 16.2 mcg of vitamin D or 81%DV.

How it helps

Trout is rich in Omega-3 fatty acids like DHA, which are essential for heart and brain health. Regularly eating trout helps to increase your body's DHA levels, potentially reducing the risk of heart disease and cognitive decline.

13



Fish

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate two servings of fish into your diet each week, focusing on oily fish like salmon, mackerel, or sardines for their high omega-3 fatty acid content. Each serving should be about 3.5 ounces cooked, or about ¾ cup of flaked fish.

Description

Fish, particularly fatty fish like salmon and mackerel, is an excellent source of omega-3 fatty acids, which support cardiovascular health, brain function, and inflammation management. Regular consumption of fish can promote heart health and overall well-being.

Fish is a great source of [omega-3s](#), protein, and other essential nutrients. Omega-3s from fish (EPA and DHA) are some of the healthiest fats we can eat. They help reduce inflammation and **protect the heart, brain, and eyes** [\[R, R, R\]](#).

Fatty fish are rich in EPA and DHA. They include [\[R\]](#):

- Salmon
- Tuna
- Herring
- Sardines

For optimal protection, try to get at least **two servings of fatty fish per week**. Fish oil supplements are available for those who don’t eat fish regularly [\[R\]](#).

How it helps

Fish, especially oily types like salmon or mackerel, are high in DHA which directly increases omega-3 fatty acid levels.

14



Sea Bass

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate sea bass into your meals 2-3 times per week, aiming for servings of about 3-4 ounces (85-113 grams) each time. This can be done by grilling, baking, or steaming the sea bass, and seasoning with herbs and spices of your choice for added flavor.

Description

Sea bass is a type of fish known for its lean protein content, omega-3 fatty acids, and essential nutrients like selenium and vitamin D. Including sea bass in your diet can support heart health, provide quality protein, and contribute to overall nutrition.

Sea bass is a good source of protein, DHA, and other nutrients like potassium, selenium, and vitamin B12. A 3-ounce serving contains 0.47 g of DHA.

How it helps

Eating Sea Bass is beneficial because it is rich in Omega-3 fatty acids, including DHA, which supports heart health and brain function. Regular consumption reduces the risk of deficiency-related conditions, keeping you healthier.

15



Chia Seeds

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate 1 to 2 tablespoons of chia seeds into your daily diet. You can add them to yogurt, smoothies, oatmeal, or salads. Do this regularly as part of your daily meals.

Description

Chia seeds are high in fiber, omega-3 fatty acids, and various vitamins and minerals. Adding chia seeds to your diet can support digestive health, provide essential nutrients, and contribute to overall nutritional wellness.

Chia seeds are a healthy source of omega-3s, calcium, as well as fiber, iron, magnesium phosphorus, and vitamins B1 and B3. A 1-ounce serving provides 5.06 g of ALA.

How it helps

Chia seeds contain ALA, a type of plant-based omega-3 fatty acid, which can contribute to maintaining a good level of omega-3s when included in the diet.

16



Omega-3 (Fish Oil)

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 1-2 g of omega-3 (fish oil) supplement daily, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

2000 mg

Description

Omega-3 fatty acids are essential fats found in fatty fish like salmon, flaxseeds, and walnuts. They are known for their potential cardiovascular and brain health benefits, including reducing the risk of heart disease and supporting cognitive function.

[Omega-3 fatty acids](#) are some of the healthiest fats we can eat. They help lower inflammation and protect the heart, brain, and eyes. Our bodies produce less omega-3s than we need for optimal health, so it's important to get enough through food or supplements [\[R\]](#), [\[R\]](#), [\[R\]](#).

There are three major types of omega-3s: ALA, EPA, and DHA [\[R\]](#), [\[R\]](#).

Fatty fish are rich in EPA and DHA. They include [\[R\]](#):

- Salmon
- Tuna
- Herring
- Sardines

For optimal protection, try to get at least **two servings of fatty fish per week**. Fish oil supplements are available for those who don't eat fish regularly [\[R\]](#).

How it helps

Supplementation with fish oil may raise DHA levels more in people with certain gene variants [\[R\]](#).

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.