SelfDecode™

Lipid Oxidation

Biohacker Report

REPORT CATEGORIES

DETOX

LONGEVITY

Sample Client

Report date: 15 January 2026

Powered by omicsedge

Table of Contents

Personal information

NAME

Sample Client

SEX AT BIRTH

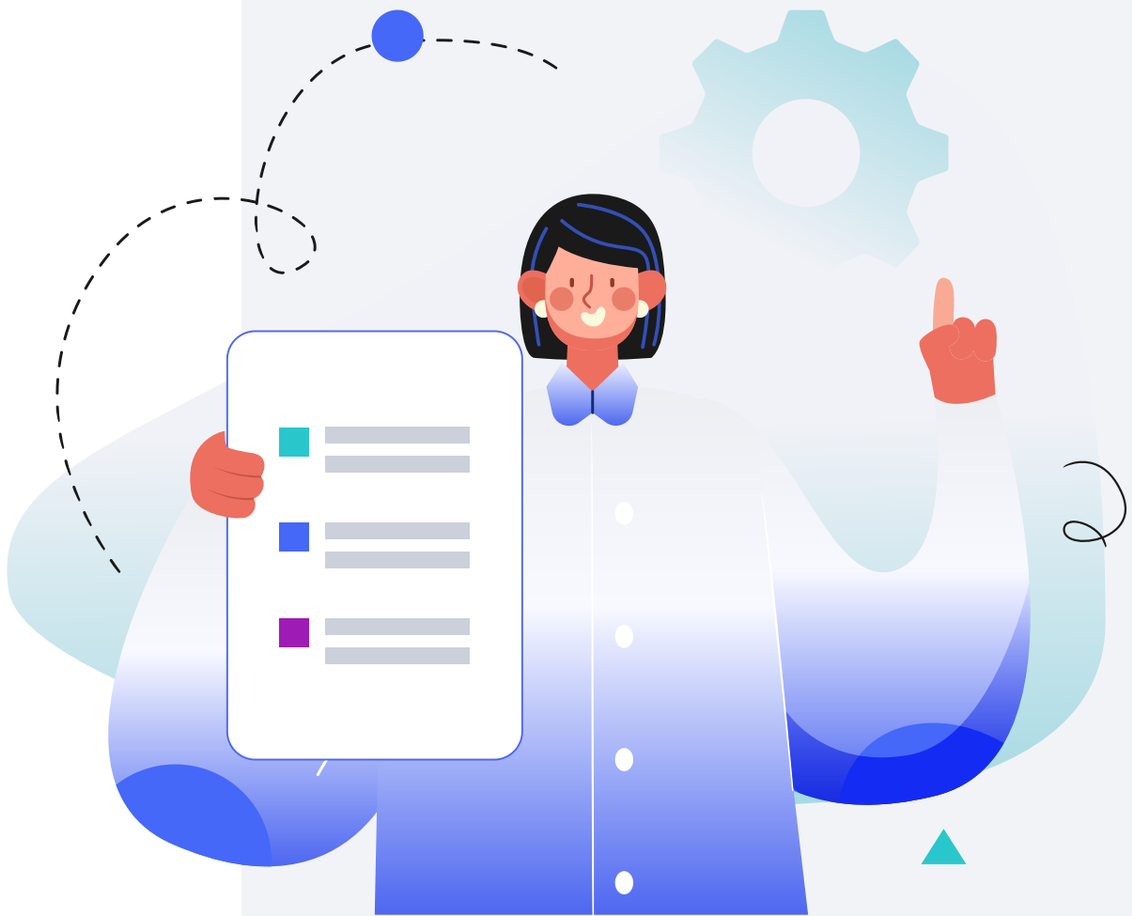
Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg

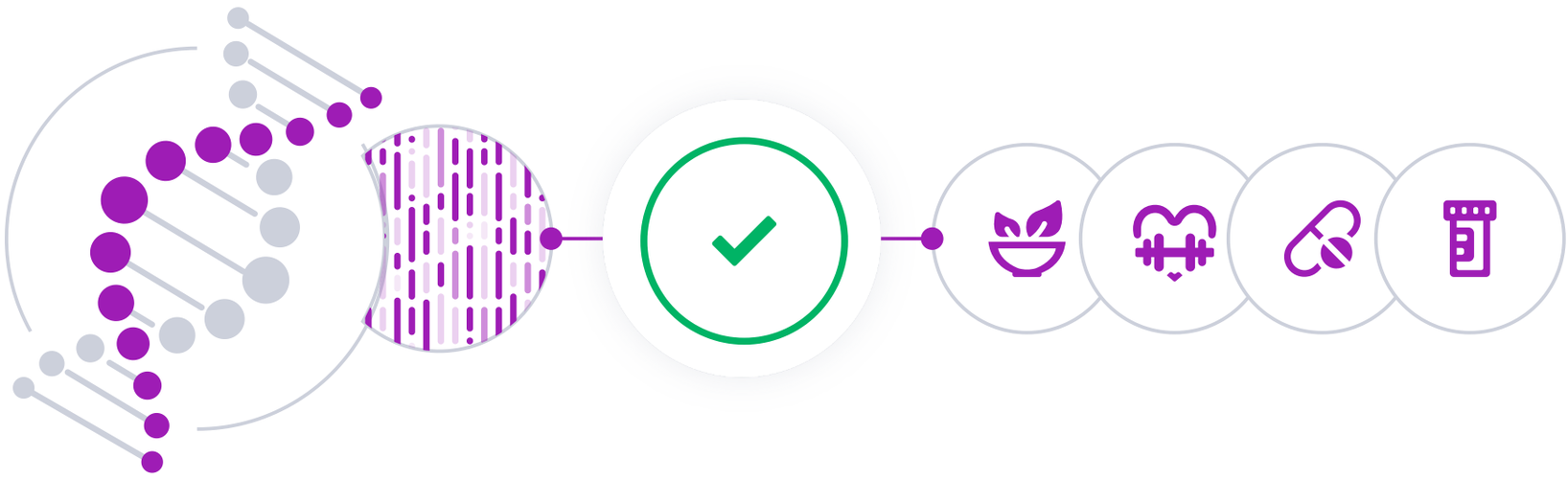


DISCLAIMER

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

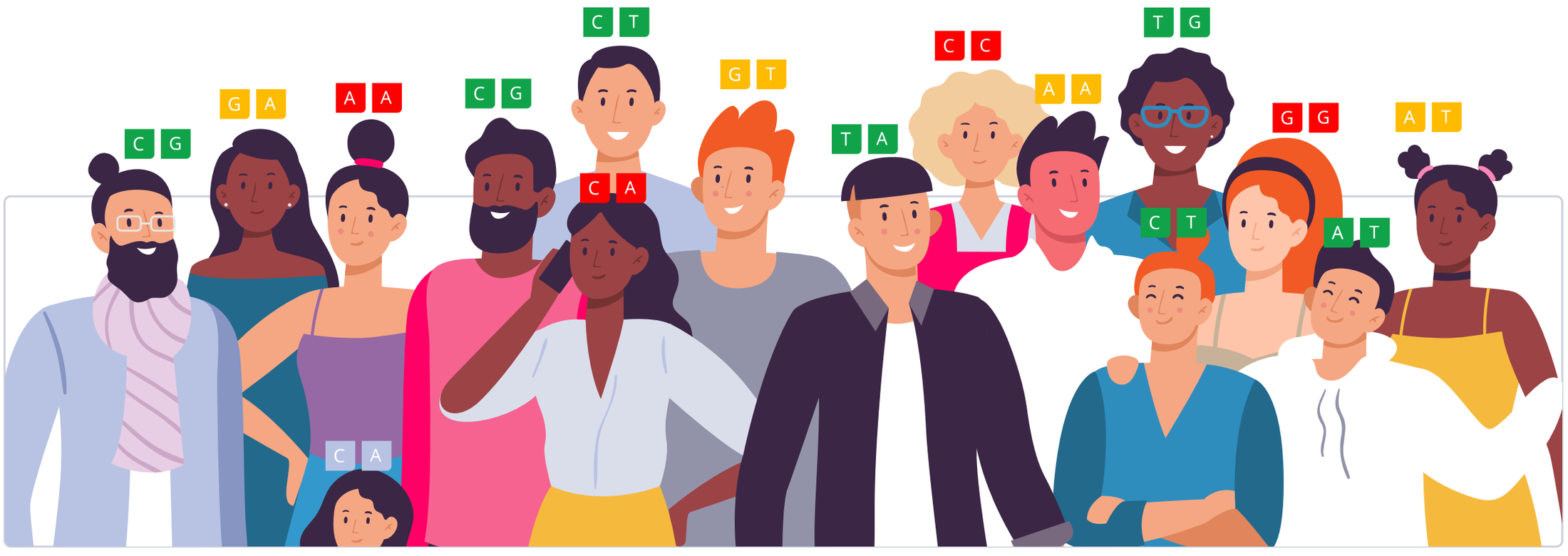
Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.



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.

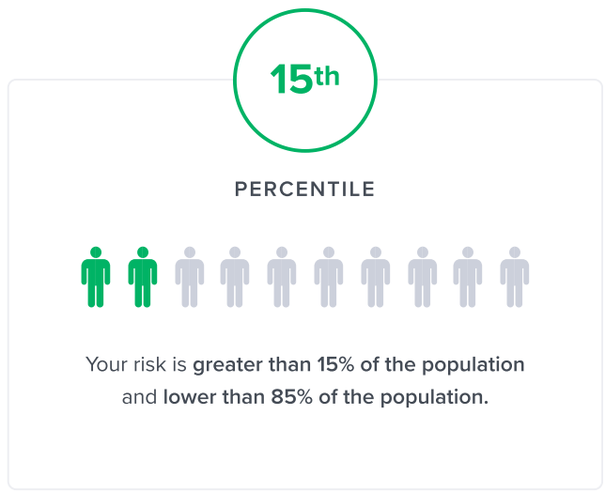
Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



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.

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

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



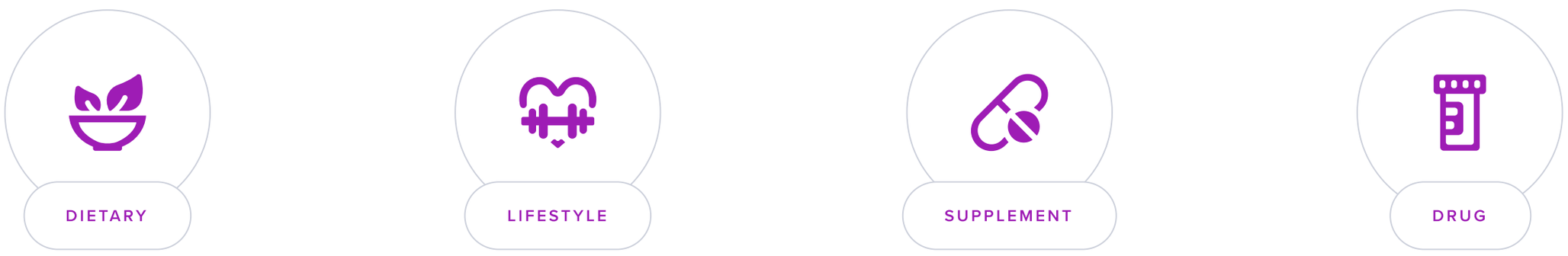
Genotype color info: AA You don't have any risk alleles | AA You have 1 risk allele | AA You have 2 risk alleles

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, afew 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

Lipid oxidation refers to the oxidative degradation of lipids, which is a process where free radicals steal electrons from the lipids in cell membranes, resulting in cell damage. This process is a crucial aspect of cell aging and death, as it can lead to loss of cell membrane integrity and increase the permeability of cellular membranes.

The byproducts of lipid oxidation, such as malondialdehyde (MDA) and 4-hydroxynonenal (4-HNE), are often used as biomarkers to measure the extent of oxidative stress in an organism. While lipid oxidation is a natural part of the metabolic process, excessive levels can lead to significant cellular and tissue damage, thus playing a role in the pathogenesis of various diseases.

Lipid oxidation can be both a normal and pathological event in the body. In controlled levels, lipid oxidation byproducts can act as signaling molecules that can influence a range of biological processes, including inflammation and apoptosis. However, when unchecked, lipid oxidation contributes to the pathophysiology of numerous conditions, including neurodegenerative diseases like Alzheimer's and Parkinson's, cardiovascular diseases, and liver diseases.

Mitochondrial dysfunction is often associated with elevated lipid oxidation due to increased production of reactive oxygen species (ROS). The body's defense mechanism against lipid oxidation includes a series of antioxidants such as vitamin E, which protects the integrity of cellular membranes by neutralizing free radicals.

Genetics of Lipid Oxidation

Genetic variants can influence lipid oxidation by affecting processes such as fatty acid metabolism, lipoprotein function, and the body's ability to manage oxidative stress. Understanding these genetic factors offers valuable insights into how your body processes fats and manages oxidative stress, enabling tailored interventions to optimize lipid metabolism and promote cardiovascular health.

PON1 (rs662): The *PON1* gene encodes paraoxonase-1, an enzyme that protects lipids from oxidation. The 'C' allele of the rs662 polymorphism is associated with lower PON1 activity, resulting in increased susceptibility to lipid peroxidation and oxidative stress.

PON1 (rs854560): Another variant in the *PON1* gene, rs854560, is also linked to reduced antioxidant activity. The 'T' allele results in a higher risk of oxidized lipids and a compromised ability to neutralize oxidative damage to fatty acids.

LPA (rs10455872): The *LPA* gene affects lipoprotein(a) levels, which are linked to lipid transport and metabolism. The 'A' allele of rs10455872 is associated with reduced lipid clearance and increased oxidative stress, potentially impairing lipid oxidation and contributing to cardiovascular disease risk.

APOB (rs11751605): The *APOB* gene impacts the structure and function of apolipoprotein B, a key component of LDL cholesterol. The 'T' allele of rs11751605 may influence lipid oxidation processes, leading to increased LDL oxidation and a greater risk of atherosclerosis.

FADS1 (rs9457933): The *FADS1* gene regulates fatty acid desaturation and can affect the balance of omega-3 and omega-6 fatty acids. The 'C' allele of rs9457933 is associated with impaired fatty acid metabolism, reducing the efficiency of lipid oxidation and promoting lipid accumulation.

HNF1A (rs3124785): The *HNF1A* gene is involved in cholesterol and triglyceride metabolism. The 'A' allele of the rs3124785 variant can influence lipid oxidation by altering

TYPICAL

Likely typical lipid oxidation based on 8 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
LPA	rs10455872	AA
LPA	rs9355816	CC
PON1	rs854560	AT
PLG	rs11751605	TT
LPA	rs9457933	CC
PLG	rs3124785	AG
SLC22A3	rs10755578	GC
PON1	rs662	TT

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

the hepatic clearance of lipids, potentially increasing oxidative stress and the risk of dyslipidemia.

CETP (rs9355816): The *CETP* gene is involved in HDL-mediated lipid transport, affecting lipid oxidation indirectly. The 'C' allele of the rs9355816 polymorphism may impair HDL function, reducing its ability to prevent lipid peroxidation and leading to oxidative damage.

PPARGC1A (rs10755578): The *PPARGC1A* gene impacts mitochondrial function and energy metabolism. The 'G' allele of the rs10755578 polymorphism may reduce the efficiency of lipid oxidation, leading to increased fat storage and metabolic imbalance.

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
1	Resveratrol	150 mg
2	Grapes	
3	Carrots	
4	Astaxanthin	12 mg
5	Dietary Selenium	
6	Green Tea Extract	250 mg
7	Berries	
8	Vitamin E	200 iu
9	Grape Seed Extract	100 mg
10	Pomegranate	
11	Selenium Supplements	50 mcg
12	Green Tea	400 mg
13	Topical Vitamin C	
14	Topical Alpha-Lipoic Acid	
15	Dietary Polyphenols	
16	Curcumin	500 mg
17	Avoid Excess Sunlight Exposure	
18	Vitamin C	2000 mg
19	Alpha-Lipoic Acid	600 mg
20	Coenzyme Q10 (CoQ10)	100 mg
21	Extra Virgin Olive Oil (EVOO)	

1

Resveratrol

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Take 150-500 mg of resveratrol as a supplement daily, preferably with meals to enhance absorption. This dosage range is based on studies for various health benefits, and it's advised to not exceed 500 mg per day without medical supervision.

TYPICAL STARTING DOSE

150 mg

Description

Resveratrol is a natural compound found in red grapes, red wine, and some berries. It is known for its potential antioxidant properties and its role in promoting heart health.

Resveratrol is an antioxidant found mainly in [R]:

- Berries
- Red grapes
- Red wine
- Peanuts

It’s purported to have anti-inflammatory and antioxidant effects [R, R, R].

How it helps

In a placebo-controlled trial of 14 athletes, supplementation with resveratrol and quercetin reduced exercise-induced lipid peroxidation [R].

In one study, resveratrol-enriched grape extract reduces oxidized LDL and ApoB levels in people at risk of cardiovascular disease [R].

However, resveratrol supplementation did not significantly affect ox-LDL levels in people with fatty liver [R].

Resveratrol supplementation has shown mixed results in reducing other oxidative stress markers [R, R, R, R].

2

Grapes

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Incorporate a serving of grapes, which is about 32 seedless grapes or approximately 1 cup, into your daily diet. You can eat them as a snack, add them to salads, or blend them into smoothies. Do this consistently for a period of at least 3 months to observe potential health benefits.

Description

Grapes are a nutrient-dense fruit rich in vitamins, fiber, and antioxidants like resveratrol. Regular consumption of grapes is associated with potential benefits for heart health, skin health, and overall well-being.

How it helps

This study compared organic and conventional red grape juices, finding higher phenolic content in organic juice. Both juices reduced lipid peroxidation in healthy individuals, regardless of cultivation method [R].

Grape juice intake for two weeks reduced post-exercise lipid peroxidation and DNA damage but had no effect on certain biomarkers. It also improved lower limb power post-exercise [R].

3

Carrots

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Incorporate at least one medium-sized carrot (about 61 grams) into your daily diet by either eating it raw, steamed, or as part of salads, soups, and stews to support eye health and provide essential nutrients.

Description

Carrots are a nutritious vegetable known for their high vitamin A content and numerous health benefits. They support eye health, provide essential nutrients, and contribute to a well-rounded diet.

Carrots are an excellent source of vitamin A, as well as biotin, vitamins K1 and B6, potassium, and antioxidants. A ½ cup serving provides 459 mcg of vitamin A or 51%DV.

How it helps

In a study, subjects consumed vitamin-free drinks for 3 weeks, then supplements with vitamin C and beta carotene for 3 weeks. Results showed increased vitamins, and reduced oxidation in LDL, but no change in LDL oxidation rate. Conclusion: Antioxidant vitamins in food can partly protect LDL from oxidation in smokers [R].

However, in a study with 22 healthy men, consuming tomato or carrot juice increased carotenoid levels in plasma and feces but only slightly improved LDL antioxidant capacity (4.5%), suggesting other factors may contribute to their colon cancer prevention effects [R].

4

Astaxanthin

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Take an astaxanthin supplement daily, with a typical dosage ranging from 4 to 12 mg. It is best taken with a fat-containing meal to enhance absorption.

TYPICAL STARTING DOSE

12 mg

Description

Astaxanthin is a powerful antioxidant found in certain microalgae and seafood. It is known for its potential benefits in reducing oxidative stress, supporting skin health, and promoting eye health.

Astaxanthin is a naturally-occurring orange-red pigment carotenoid found in algae, shrimp, lobster, crab, and salmon [R].
As an antioxidant, astaxanthin is **10 times stronger than zeaxanthin, lutein and beta-carotene, and 100 times stronger than vitamin E** [R].
People take astaxanthin to:

- Support skin health [R, R]
- Reduce exercise fatigue [R, R]
- Prevent heart disease [R, R, R]

How it helps

Astaxanthin, a powerful antioxidant found in certain algae and seafood, can significantly reduce lipid peroxidation. It works by scavenging free radicals and protecting the cells from oxidative damage, which is beneficial in lowering the risk of chronic diseases related to oxidative stress.

5

Dietary Selenium

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Incorporate selenium-rich foods into your daily diet, such as Brazil nuts, seafood, and organ meats. Eating 1-2 Brazil nuts a day can meet the daily selenium requirement for most adults.

Description

Selenium is a trace mineral found in various foods, including nuts, seeds, and seafood. It is an essential nutrient that plays a crucial role in maintaining the body's antioxidant defenses and supporting thyroid function.

Selenium supports [R]:

- Reproduction
- Thyroid function
- DNA production
- Immune response

Adults should be getting **55 micrograms** of selenium per day. Good sources of selenium include [R]:

- Brazil nuts
- Fish
- Meat
- Eggs
- Rice
- Oatmeal

How it helps

Selenium acts as an antioxidant that helps protect cells from lipid peroxidation. Including selenium-rich foods in your diet can boost your body's defenses against oxidative stress, thereby reducing cell damage.

6

Green Tea Extract

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Take a green tea extract supplement containing 250-500 mg of EGCG (the active compound in green tea) daily, preferably with a meal to enhance absorption. This dosage is typically split into two separate doses, taken in the morning and later in the day. Continue this regimen for at least three months to observe potential health benefits.

TYPICAL STARTING DOSE

250 mg

Description

Green tea extract is a concentrated form of the beneficial compounds found in green tea, such as catechins. It is used in dietary supplements for its potential to enhance metabolism, aid in weight management, and provide antioxidant protection.

Green tea is made from the same plant as black tea (*Camellia sinensis*). However, the leaves and buds are processed differently [R].

Green tea contains **catechins**. These are antioxidants that help prevent oxidative stress [R].

EGCG is the main catechin found in green tea. It may help reduce inflammation and support weight loss [R].

How it helps

Green tea extract is rich in catechins, a type of antioxidant that has been shown to reduce lipid peroxidation in the body. This helps to protect cells and tissues from oxidative damage.

7

Berries

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Incorporate a variety of berries such as strawberries, blueberries, raspberries, and blackberries into your daily diet. Aim for at least one cup of fresh or frozen berries every day, either as a snack, part of your breakfast (such as in oatmeal or yogurt), or as a dessert.

Description

Berries, such as strawberries, blueberries, and raspberries, are packed with antioxidants, vitamins, and fiber. Regular consumption of berries may support heart health, improve cognitive function, and contribute to overall well-being.

How it helps

Berries are high in antioxidants, which can neutralize free radicals, reducing oxidative stress and lipid peroxidation. This is particularly due to their high levels of anthocyanins and other polyphenols that can protect cells from oxidative damage.

8

Vitamin E

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Take 200 IU of Vitamin E daily as a supplement, preferably with a meal that contains fat to enhance absorption.

TYPICAL STARTING DOSE

200 iu

Description

Vitamin E is a fat-soluble antioxidant found in various foods, such as nuts and seeds. It is known for its ability to protect cells from oxidative damage, support immune function, and may play a role in skin health. Vitamin E supplements are used to bolster antioxidant defenses and may be beneficial for conditions related to oxidative stress.

Vitamin E is an antioxidant important for the immune system and for heart health [R].

Plant-based foods have the most vitamin E. These include [R]:

- Wheat germ
- Sunflower seeds
- Almonds
- Plant oils

Adults need about **15 mg** of vitamin E per day [R].

How it helps

Vitamin E is a potent antioxidant that protects cell membranes from oxidation by reacting with lipid radicals produced in the lipid peroxidation chain reaction. This helps to prevent the propagation of free radical damage in cell membranes.

9

Grape Seed Extract

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Take 100-300 mg of grape seed extract daily, preferably with a meal to enhance absorption. This can be done either through a single dose or split into multiple doses throughout the day. Continue this regimen for at least 3 months to observe potential benefits.

TYPICAL STARTING DOSE

100 mg

Description

Grape seed extract is rich in antioxidants called polyphenols, which may help protect against oxidative stress and support cardiovascular health. It's also believed to have potential benefits for skin health and overall well-being.

Grape seed extract is made from the seeds of wine grapes. It contains antioxidant compounds that may help support [R, R]:

- Blood circulation
- Heart health
- Blood sugar control
- Healthy weight

How it helps

Grape seed extract contains antioxidants that can help prevent and repair damage to the cells caused by free radicals, including those generated during lipid peroxidation. It supports the body's natural defenses against oxidative stress.

10

Pomegranate

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Incorporate pomegranate into your diet by consuming fresh pomegranate seeds, drinking pure pomegranate juice, or adding pomegranate extract to smoothies or yogurts. Aim for at least one serving per day, which could be about half a cup of seeds or a glass (8 ounces) of juice, to gain its health benefits.

Description

Pomegranate is a fruit native to regions of the Middle East and Mediterranean. It is rich in antioxidants and nutrients such as vitamin C, vitamin K, and dietary fiber. It contains punicalagins, anthocyanins, and ellagic acid, which give it anti-inflammatory effects and potential heart health benefits.

Pomegranates are red fruits that contain seeds covered by edible sweet coats. They are rich in antioxidants [R, R].

Pomegranate may reduce inflammation and support heart health. People use pomegranate seed oil and peel in cosmetics and traditional medicine [R, R].

How it helps

Pomegranate is rich in antioxidants, particularly punicalagins and anthocyanins, that significantly reduce lipid peroxidation. Its consumption can enhance antioxidant activity in the body, helping to protect cells from oxidative damage.

11

Selenium Supplements

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Take 50 mcg of selenium supplements once daily, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

50 mcg

Description

Selenium is a trace mineral found in Brazil nuts and many other foods as well as supplements. It is an essential nutrient that plays a crucial role in maintaining the body's antioxidant defenses and supporting thyroid function.

Selenium supports [R]:

- Reproduction
- Thyroid function
- DNA production
- Immune response

Adults should be getting **55 micrograms** of selenium per day. Selenium supplements are available for people who can't meet their needs with a balanced diet [R].

How it helps

Selenium acts synergistically with antioxidants like Vitamin E to protect cell membranes from oxidative damage. By contributing to the antioxidant defense system of the body, selenium supplements can help reduce lipid peroxidation and its harmful effects.

12

Green Tea

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Consume 400 mg of green tea extract daily. This can be taken in the form of capsules or tablets available that specify the amount of green tea extract. Ensure the supplement is taken according to the product's specific instructions, usually once a day with water.

TYPICAL STARTING DOSE

400 mg

Description

Tea is a beverage made by steeping the leaves of the Camellia sinensis plant in hot water. It comes in various types, including black, green, white, and herbal teas, and is known for its diverse flavors and potential health benefits due to antioxidants and other bioactive compounds.

Green and black tea are made from the same plant (*Camellia sinensis*). This plant is processed in different ways to make each type of tea [R, R].

Tea contains antioxidants called **flavonoids**, which may help prevent [R, R, R, R]:

- Heart disease
- Cancer
- Diabetes

How it helps

Green tea contains high levels of catechins, a type of antioxidant that can significantly reduce the formation of free radicals in the body, protecting cells and molecules from damage. This makes green tea effective in reducing lipid peroxidation.

13

Topical Vitamin C

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Apply a vitamin C serum to your face and neck once a day, preferably in the morning before applying sunscreen and makeup. It should be left on the skin, not washed off. Consistent daily use is needed for best results.

Description

Topical vitamin C, often in the form of ascorbic acid, is used for its antioxidant properties to protect the skin from environmental damage and promote collagen synthesis, benefiting overall skin health. It can be sourced from various natural plant extracts, such as citrus fruits.

Vitamin C is an essential nutrient. This means that our bodies can't produce it on their own, so we have to get it from food or supplements [R].

Vitamin C has antioxidant properties. It supports immunity, heart health, and wound healing [R, R].

Vitamin C deficiency is called *scurvy.* In the past, many sailors suffered from it [R].

How it helps

Vitamin C, when applied topically, acts as a potent antioxidant. It can reduce lipid peroxidation in the skin by neutralizing free radicals, thereby protecting the skin from oxidative damage and improving its appearance.

14

Topical Alpha-Lipoic Acid

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Apply a thin layer of alpha-lipoic acid cream, gel, or serum to the affected area of the skin once or twice daily, after cleansing and drying the skin thoroughly. Ensure to avoid contact with eyes and mucous membranes. Use consistently for at least 1-2 months to observe potential benefits.

Description

Alpha-lipoic acid is an antioxidant compound that can be applied topically to protect the skin from oxidative stress and promote a more youthful appearance. It may help reduce signs of aging and improve skin texture.

Alpha-lipoic acid is a natural antioxidant. It's found in almost every cell in your body [R, R, R].

People use alpha-lipoic acid to help with [R, R, R]:

- Complications of high blood sugar
- Skin aging
- Weight loss

How it helps

Topical Alpha-Lipoic Acid is known for its antioxidant properties, which can help neutralize free radicals involved in lipid peroxidation. This reduction in lipid peroxidation can protect skin cells from damage and aging.

15

Dietary Polyphenols

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Incorporate foods rich in dietary polyphenols into your daily diet. This can include consuming a variety of fruits like berries, apples, and grapes; vegetables such as onions and broccoli; nuts and seeds; as well as beverages like green tea and coffee. Aim for at least five servings of fruits and vegetables per day to achieve a beneficial intake of polyphenols.

Description

Polyphenols are antioxidants found in foods like fruits, vegetables, and tea, which may offer various health benefits, including reduced inflammation and improved heart health.

Polyphenols are plant components with antioxidant properties. They help reduce oxidative stress [R].

High levels of oxidative stress can damage our cells. Oxidative stress plays a role in many health conditions, including [R]:

- High blood sugar
- Type 2 diabetes
- Heart disease

You can get most polyphenols and other antioxidants from fresh fruits and vegetables [R, R].

How it helps

Polyphenols, found in high amounts in fruits, vegetables, and certain beverages like tea, have been shown to exert a protective effect against lipid peroxidation. They act by scavenging free radicals and upregulating the body's own antioxidant defenses.

16

Curcumin

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Take a 500 mg curcumin supplement daily with food. To enhance absorption, take it with a meal that contains fats or oils since curcumin is fat-soluble.

TYPICAL STARTING DOSE

500 mg

Description

Curcumin is a compound found in turmeric known for its anti-inflammatory and antioxidant properties. It has been studied for its potential to reduce inflammation, support joint health, and contribute to overall well-being.

Turmeric is a yellow spice from India. It may reduce inflammation and oxidative stress [R].

The most important active compound in turmeric is **curcumin.** People use curcumin for [R, R, R, R, R, R]:

- Joint pain
- Hay fever
- Mood
- High blood sugar
- Gut health
- Liver health

How it helps

Curcumin, the active component in turmeric, has potent antioxidant properties. It effectively reduces lipid peroxidation by inhibiting the oxidation of fats in the body, thus protecting cells and tissues from oxidative stress and damage.

17

Avoid Excess Sunlight Exposure

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Limit direct sun exposure to early morning or late afternoon hours, ideally before 10 a.m. or after 4 p.m., when UV rays are less intense. Wear protective clothing, such as long-sleeved shirts, pants, and wide-brimmed hats, along with sunglasses that block UVA and UVB rays. Apply a broad-spectrum sunscreen with at least SPF 30 to all exposed skin, reapplying every two hours or immediately after swimming or sweating.

Description

Avoiding excessive sunlight exposure and practicing sun safety measures, such as wearing sunscreen and protective clothing, helps reduce the risk of skin damage, including sunburn and skin cancer. It supports long-term skin health and minimizes the harmful effects of UV radiation.

Sunlight or bright light during the day can benefit your body and mind. It may [R, R, R]:

- Boost your mood
- Boost your performance and energy
- Improve sleep quality

Experts recommend getting **at least 5-15 minutes of midday sun, 2-3 times per week**. People with darker skin and those living at high latitudes may need longer periods of sun exposure [R, R].

However, **excessive sun exposure may lead to sunburn, skin aging, and skin cancer**, so make sure to find the right balance [R, R].

How it helps

Excessive exposure to sunlight can increase lipid peroxidation by generating free radicals in the skin. Limiting sun exposure and using protective measures can reduce skin damage caused by these oxidative processes.

18

Vitamin C

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Take 500-2000 mg of vitamin C supplement daily. It can be taken at any time of the day, with or without food, according to personal preference or tolerance.

TYPICAL STARTING DOSE

2000 mg

Description

Vitamin C is an essential nutrient. This means that our bodies can't produce it on their own, so we have to get it from food or supplements [R].

Foods rich in Vitamin C include: [R]

- Citrus Fruits
- Peppers
- Brussel sprouts
- Kiwi
- Broccoli
- Tomato
- Cantaloupe
- Cauliflower
- Spinach

Vitamin C has antioxidant properties. It supports immunity, heart health, and wound healing [R, R].

Vitamin C deficiency is called *scurvy.* In the past, many sailors suffered from it [R].

How it helps

Vitamin C is a powerful antioxidant that can directly neutralize free radicals and play a role in regenerating other antioxidants, including Vitamin E. This activity is crucial in reducing lipid peroxidation and protecting cells from oxidative damage.

19

Alpha-Lipoic Acid

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Take 600-1800 mg of alpha-lipoic acid daily, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

600 mg

Description

Alpha-lipoic acid is a natural antioxidant found in almost every cell in your body. People use alpha-lipoic acid to help with issues like skin aging, weight loss, and high blood sugar [R, R, R].

People use alpha-lipoic acid to help with [R, R, R, R]:

- Complications of high blood sugar
- Skin aging
- Weight loss
- Carpal tunnel syndrome

How it helps

Alpha-Lipoic Acid is known for its antioxidant properties. It helps neutralize free radicals in the body, reducing oxidative stress. This directly impacts lipid peroxidation by preventing the oxidation of lipids, thus protecting cell membranes from damage.

20

Coenzyme Q10 (CoQ10)

IMPACT 0 / 5

EVIDENCE 0 / 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) plays a crucial role in energy production and acts as an antioxidant. It helps in reducing lipid peroxidation by preventing the oxidation of lipids, thus protecting the cells from oxidative damage and improving cellular health.

21

Extra Virgin Olive Oil (EVOO)

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Incorporate 1-2 tablespoons of extra virgin olive oil into your daily diet. Use it as a dressing for salads, vegetables, or incorporate it into cooking, but avoid using it at high temperatures to preserve its health benefits.

Description

Extra virgin olive oil is a high-quality olive oil obtained from the first pressing of olives. It is rich in monounsaturated fats and antioxidants, like polyphenols, and is associated with various health benefits, including heart health and anti-inflammatory properties.

Olive oil is fat from the olive, a traditional tree of the Mediterranean Basin [R].

Olive oil has anti-inflammatory and antioxidant properties. It may also reduce the risk of [R, R]:

- Heart disease
- Diabetes
- Cancer

Olive oil is also the primary fat source in the Mediterranean diet, which may improve brain and heart health [R].

How it helps

Extra Virgin Olive Oil is rich in monounsaturated fats and phenolic compounds, which have been shown to reduce oxidative stress and lipid peroxidation. The antioxidants in olive oil, particularly hydroxytyrosol and oleuropein, protect the lipids in your blood from being oxidized.

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.