

Artery Hardening

DNA Health Report

REPORT CATEGORIES —



HEART & BLOOD
VESSELS



LONGEVITY

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

Is artery hardening a 21st century issue?

You wouldn’t be wrong for assuming so. Consuming too much fatty or sugary food may increase your likelihood of clogged arteries, and it's hard to drive a mile in any direction without coming across a fast food restaurant nowadays.

In actuality, artery hardening has affected humans for a lot longer than we’ve been eating fries.

Researchers studying mummies have found evidence that artery hardening has been around since at least the time of the ancient Egyptians [\[R\]](#)!

One thing is for sure: Tutankhamun wasn’t partial to a cheeseburger. So if it wasn’t fast food that led to this condition, what could it have been?

The likely answer is a mix of lifestyle, diet, and genetic factors! Genetic factors may interact with risk factors like a lack of exercise or an unhealthy diet to influence how likely you are to develop artery hardening.

While this might sound scary, you can actually use this knowledge to help identify the factors that may have the greatest impact on your genetic risk. You can then use this information to take action!

For example, if you carry a certain variant of the [EDNRA](#) or [EDNRB](#) gene, you may be at higher risk of artery hardening if you don’t exercise [\[R\]](#). But by knowing this, you may be able to lower your genetic risk of artery hardening by getting more exercise!

These are just two of many genes that may influence your risk of artery hardening.

Read on to find out more about:

- **How your genetics play a role in artery hardening**
- **Your genetic risk score based on over 50,000 genetic variants**
- **Personalized recommendations based on your genetics**

About Artery Hardening

Key Takeaways:

- About 60% of differences in people's chances of having atherosclerosis may be due to genetics
- Risk factors: being male, high blood pressure and cholesterol, diabetes, obesity, smoking, lack of exercise, poor diet, and age.
- If you are at high genetic risk, you may lower your overall risk by taking action on risk factors that you can change.
- Artery hardening begins at a young age and your genetics, lifestyle, diet, and exercise may all impact how much and how fast it develops over the course of your lifetime.

Click the **Recommendations** tab for potential dietary and lifestyle changes and **next steps** for relevant labs.

The arteries are blood vessels that carry oxygen and nutrients from the heart to the rest of the body. Normally, they are elastic, able to expand and contract as blood flows through them [R, R].

Over time, some people's arteries may lose that flexibility. The blood vessel walls become thick and stiff. This is called artery hardening (*arteriosclerosis*) [R].

The most common type of artery hardening is atherosclerosis. In this condition, fatty substances build up on the blood vessel walls. This buildup is called plaque. It can narrow the arteries, which reduces blood flow. It can also burst and cause a blood clot [R, R, R].

Atherosclerosis is the underlying cause of about 50% of all deaths in the Western world[R].

Men may be more likely to develop atherosclerosis than women. The risk tends to increase with age [R, R].

Other risk factors for atherosclerosis include [R]:

- High blood pressure



MORE LIKELY

More likely to have atherosclerosis based on 51,588 genetic variants we looked at



Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
PEMT	rs12936587	GA
NOS3	rs2070744	TC
ZNF668	rs9923231	TC
CDKN2A	rs4977574	GG
NOS3	rs1799983	TT
CDKN2B	rs10757278	GG
PCSK9	rs11591147	GG
PCSK9	rs562556	AA
PCSK9	rs28362286	CC
COMT	rs4680	AG
CETP	rs5882	AG
ICAM1	rs5498	AG
COMT	rs4633	TC
LRIG1	rs17045031	GG
EDNRA	rs1878406	CT
CCDC71L	rs17398575	AG
LDLR	rs6511720	GG
CDKN2B	rs9632884	CC
FMN1	rs4779614	TC
APOC1	rs445925	GG
FAM167A	rs6601530	AG
ZHX2	rs11781551	GA
CYP1A2	rs762551	AA
LPA	rs3798220	TT

- High cholesterol
- Underlying conditions (e.g., diabetes, obesity, sleep apnea)
- Cigarette smoking
- Lack of exercise
- Unhealthy diet
- **Genetics**

In most cases, atherosclerosis won't cause any symptoms. In fact, most people don't have symptoms until a blood vessel is so narrow that an organ stops receiving enough blood. Symptoms of moderate or severe atherosclerosis can vary depending on the artery affected. They can include [\[R\]](#):

- Chest pain (for blood vessels feeding the heart)
- Weakness, loss of vision, slurred speech (for blood vessels feeding the brain)
- Leg or arm pain (for blood vessels feeding the limbs)
- High blood pressure or kidney failure (for blood vessels feeding the kidneys)

To prevent artery hardening, doctors recommend [\[R\]](#):

- Quitting smoking
- Eating healthy foods
- Staying fit

Once the condition progresses, treatment options can include [\[R\]](#):

- Medication
- Surgery
- Lifestyle changes

It's important to prevent, manage, or treat atherosclerosis. Left untreated, it can cause [\[R\]](#):

- Heart attack
- Stroke
- Poor circulation in the arms and legs (peripheral artery disease)
- Bulges in blood vessels (aneurysms)
- Chronic kidney disease

Around 60% of differences in people's chances of artery hardening may be attributed to genetics. Genes involved in artery hardening may influence [\[R\]](#), [\[R\]](#):

- Cholesterol ([LRP6](#))
- Inflammation ([ALOX5AP](#), [LTA4H](#))

GENE	SNP	GENOTYPE
FOXO3	rs2802292	GG
CCDC71L	rs17477177	TT
STEAP1	rs259140	GG
BTN3A2	rs4712972	GG

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

Moreover, genetically high testosterone levels may be causally associated with a lower risk of atherosclerosis in men [\[R\]](#).

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	Exercise At Least One Hour a Day	1 hour	2	Limit Saturated Fat	
3	Choose Healthy Fats		4	Mediterranean Diet	
5	Polyunsaturated Fatty Acids (PUFAs)		6	Leafy Green Vegetables	
7	Avoid Secondhand Smoke		8	Fruits And Vegetables	
9	Aerobic Exercise (Cardio)	1 hour	10	Gotu Kola and Pycnogenol	60 mg
11	Eat Fiber-Rich Foods		12	Avoid Sugary Foods & Drinks	
13	Limit Trans Fats		14	Garlic Supplement	200 mg
15	Omega-3 (Fish Oil)	500 mg	16	Tea	
17	Spinach		18	Tomato	
19	Psyllium	5 g	20	Vitamin K2	100 mcg
21	Zinc	10 mg	22	Vitamin K1	90 mcg
23	Avoid Exposure to Heavy Metals		24	Blueberries	
25	Avoid Arsenic Exposure		26	Dietary Antioxidants	
27	Beetroot		28	Soy	
29	Curcumin	500 mg	30	Whey Protein	25 g
31	Sleep for 7+ Hours		32	Maintain Optimal Vitamin D Levels	1000 iu

33	Soy Protein	20 g	34	Niacin Supplements	20 mg
35	Aquatic Exercise	1 hour	36	Relaxation Techniques	30 minutes
37	Coenzyme Q10 (CoQ10)	100 mg	38	Cocoa	
39	Magnesium	250 mg	40	Walking	30 minutes
41	Avoid Refined Sugar		42	Avoid Processed High Phosphate Foods	
43	Mesoglycan		44	Whole Grains	
45	Hydroxytyrosol And Punicalagin		46	Flaxseed	2 tbsp
47	Green Tea	400 mg	48	DASH Diet	
49	Extra Virgin Olive Oil (EVOO)		50	Soy Isoflavones	40 mg
51	Alpha-Linolenic Acid (ALA)		52	Pomegranate	
53	Pomegranate Juice		54	Lycopene	10 mg
55	Plant Sterols & Stanols	300 mg	56	Stair Climbing	10 minutes
57	Strength Training	1 hour	58	Vitamin E	200 iu
59	Blueberry Supplements	500 mg	60	Grape Polyphenols	150 mg
61	Vitamin C	500 mg	62	Cocoa Extracts	500 mg
63	Avoid Lead Exposure		64	Propionyl-L-Carnitine	500 mg
65	CBD	10 mg	66	Watermelon	
67	Blood Orange Juice		68	Dragon Fruit	
69	Dietary Magnesium		70	Dietary Polyphenols	
71	Hot Water Bathing		72	Pycnogenol	100 mg

73	Hesperidin	500 mg
74	Bromelain	
75	Coconut Sugar	
76	Blackcurrant Juice	
77	Chinese Rhubarb	500 mg
78	Ubiquinol	100 mg
79	Cranberry	
80	Pomegranate Extract	250 mg
81	Hazelnuts	
82	Emoxypine	
83	Chondroitin	800 mg
84	Decaffeinated Coffee	
85	Alpha-Lipoic Acid and Acetyl-L-Carnitine	600 mg
86	Gotu Kola	
87	Curcumin Theracurmin	180 mg
88	Transcendental Meditation	20 minutes
89	Cold Exposure	1 minutesute
90	Panax Notoginseng	
91	Broccoli Sprouts	2 tbsp
92	Green Tea Extract	250 mg
93	Apples	
94	Hydroxytyrosol And Extra Virgin Olive Oil (EVOO)	5 mg
95	Dietary Omega-3 Fatty Acids	
96	Yoga	30 minutes
97	Lactobacillus Plantarum	10 billion CFU
98	Mango Powder	5 g
99	Meditation	30 minutes
100	Black Raspberry Extract	300 mg
101	Glutamine	5 g
102	TUDCA (Tauroursodeoxycholic Acid)	250 mg
103	Genistein	30 mg
104	Plum Juice	
105	GABA Supplement	1500 mg
106	Mulberry	
107	Avoid PAHs Exposure	
108	Alpha-Lipoic Acid	100 mg
109	Mitoquinone Mesylate (MitoQ)	
110	Bitter Melon Supplement	500 mg
111	Hawthorn Extract and Japanese Knotweed	
112	Onion	

113	Almonds		114	Raspberries	
115	Royal Jelly	300 mg	116	Lutein	
117	Dietary Iron From Plant Sources		118	Methylfolate	400 mcg
119	Punicalagin	300 mg	120	Japanese Knotweed	200 mg
121	Hawthorn Extract		122	Hydroxytyrosol	5 mg

1



Exercise At Least One Hour a Day

IMPACT

5 / 5

EVIDENCE

4 / 5

How to implement

Dedicate a minimum of 60 minutes to moderate-intensity activities such as brisk walking, swimming, or cycling. Do this most days of the week, aiming for at least 5 days to optimize benefits.

TYPICAL STARTING DOSE

1 hour

Description

[Exercise](#) can do wonders for your health. It can help you lose weight, improve your heart health, boost your mood, and more [\[R\]](#).

There are many ways you can be active. You can walk, run, swim, dance, or play team sports. **Everything counts, and it's never too late to start!**

Try to get at least **60 minutes of moderate physical activity on most days**, including walking. **Getting a mix of cardio (min 150 min/day) and strength training (min 2 times a week) may be optimal.**

How it helps

People who don't move a lot may have a higher risk of artery hardening. On the other hand, **all types of exercise, from light to vigorous, are linked to better blood vessel function** [\[R\]](#).

Experts agree that regular exercise is one of the best ways to reduce the risk of artery hardening. They recommend being active for at least 30 minutes, at least 5 days per week [\[R\]](#), [\[R\]](#), [\[R\]](#).

Exercise may also help people at high risk for artery hardening. In these people, resistance training or cardio may help improve [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Blood flow
- Levels of fat in the blood
- Blood pressure
- Heart function

 PERSONALIZED TO YOUR GENES

Being physically fit may cancel out the negative effects of your [MTHFR](#) gene variant on artery hardening [\[R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
MTHFR	rs1801133	AA	

2



Limit Saturated Fat

IMPACT4 / 5

EVIDENCE4 / 5

How to implement

Reduce your intake of saturated fats by choosing lean cuts of meat, opting for low-fat or fat-free dairy products, and using cooking oils high in unsaturated fats (like olive or canola oil) instead of butter or lard. Aim to keep saturated fat to less than 10% of your total daily calories. For someone consuming 2000 calories a day, this means 20 grams or less of saturated fat per day.

Description

Limiting saturated fat intake is crucial for managing cholesterol levels and reducing the risk of heart disease. Choosing lean protein sources and incorporating unsaturated fats into the diet supports cardiovascular health and overall well-being.

How it helps

Experts claim that to maintain a healthy heart and reduce the risk of artery hardening, it's essential to minimize the intake of saturated fats [\[R, R\]](#).

Research involving over 14,000 people found that a higher intake of saturated and trans fats correlates with increased [\[R, R, R, R, R, R, R, R, R, R\]](#):

- Thickness of the artery walls
- Worse blood vessel function
- LDL cholesterol
- Death risk from artery hardening

In line with this, diets low in saturated and trans fats may reduce cholesterol levels, blood pressure, and artery thickening and improve blood vessel function [\[R, R\]](#).

3



Choose Healthy Fats

IMPACT4 / 5

EVIDENCE4 / 5

How to implement

Incorporate sources of unsaturated fats such as olive oil, avocados, nuts, seeds, and fatty fish into your daily diet. Aim for at least two servings of fatty fish per week and use olive oil for cooking and salad dressings. Replace saturated fats found in red meat, butter, and processed foods with these healthier options whenever possible.

Description

Choosing healthy fats, such as those found in avocados, nuts, and fatty fish, can support cardiovascular health, reduce inflammation, and promote overall well-being. A diet balanced in healthy fats can help manage cholesterol levels and reduce the risk of heart disease.

Based on their structure, the fats in our diet can be broadly divided into *saturated* and *unsaturated* fat. Trans fat is a type of unsaturated fat [\[R, R, R\]](#).

In large amounts, trans fat and saturated fat may have a negative impact on your heart and reproductive health. Processed foods and animal products like red meat and dairy are rich in these fats [\[R, R, R, R, R\]](#).

Some types of unsaturated fat can protect your heart and support fertility. **Experts say you should add more unsaturated fats to your diet.** Some good sources include [\[R, R, R\]](#):

- Nuts
- Seeds
- Fish

Unsaturated fats include polyunsaturated fats or PUFAs (omega-3 and omega-6) and monounsaturated fats or MUFAs [\[R, R\]](#).

How it helps

Eating a lot of saturated and trans fats may increase the risk of artery hardening and associated complications. However, not all studies found a link [\[R, R, R, R, R\]](#).

Saturated fat may contribute to artery hardening by increasing cholesterol levels. It may also make blood vessels less elastic. **A diet low in saturated fat and cholesterol may reverse these effects. It may also help reduce the risk of heart disease** [\[R, R, R, R, R, R\]](#).

Higher blood levels of healthy fats (PUFAs) are linked to a lower risk of artery hardening [\[R, R\]](#).

In line with this, PUFAs (omega-3s) from food or supplements may help slow down plaque build-up in the arteries [\[R, R, R, R, R, R\]](#).

Healthy fats may help by reducing cholesterol in the blood and inflammation [\[R, R, R, R, R\]](#).

4



Mediterranean Diet

IMPACT4 / 5

EVIDENCE4 / 5

How to implement

Incorporate a variety of primarily plant-based foods, such as fruits, vegetables, whole grains, nuts, and legumes, into every meal. Choose healthy fats, like olive oil, over saturated fats and consume fish and poultry at least twice a week. Limit red meat to a few times a month and include a moderate amount of dairy products. Opt for water and red wine in moderation as your beverages.

Description

The [Mediterranean diet](#) is based on the traditional cuisine from the Mediterranean regions. It moderates the intake of red meat and dairy, while being rich in fruits and vegetables, whole grains, and healthy fats ([olive oil](#)).

The [Mediterranean diet](#) focuses on traditional cuisine from the Mediterranean regions. It’s rich in [\[R\]](#):

- [Olive oil](#)
- Fruits and vegetables
- Whole grains
- Nuts and seeds
- Fish

This type of diet may **reduce inflammation and protect the brain and heart** [\[R, R, R, R\]](#).

Limited intake of animal products, saturated fat, and refined sugar likely contribute to the health benefits of the Mediterranean diet [\[R\]](#).

How it helps

Following the Mediterranean diet may decrease the risk of artery hardening. It may also improve blood vessel function in those with the condition. This diet may help alone or enriched with nuts [\[R, R, R, R, R, R\]](#).

A healthy diet that contains fresh fruit, vegetables, whole grains, and nuts may help [\[R, R, R, R, R, R, R, R\]](#):

- Reduce plaque build-up
- Lower blood pressure
- Maintain a healthy weight
- Decrease levels of fat in the blood
- Reduce inflammation and oxidative stress

5



Polyunsaturated Fatty Acids (PUFAs)

IMPACT4 / 5

EVIDENCE3 / 5

How to implement

Incorporate foods rich in polyunsaturated fatty acids (PUFAs) into your daily diet. Examples include eating fatty fish like salmon, mackerel, or sardines two to three times a week, using plant-based oils like flaxseed, soybean, and canola oil in cooking and salads, and adding nuts and seeds such as walnuts and flaxseeds to your meals or snacks daily.

Description

Polyunsaturated fatty acids (PUFAs) are fatty acids with at least two double bonds. They are considered "healthy fats" and include **omega-3** and **omega-6** fatty acids [R].

[Omega-3 fatty acids](#) help [R, R]:

- Lower inflammation and blood sugar
- Protect the heart, brain, and eyes

Omega-6 fatty acids play important roles in [R]:

- Skin health
- Energy production
- Immunity

Good sources of PUFAs include [R, R, R, R]:

- Fish and seafood
- Plant oils (e.g., flaxseed, corn, sunflower, soybean, and grapeseed oil)
- Seeds (e.g., safflower, sunflower, and pumpkin seeds)
- Walnuts
- Tofu

How it helps

Higher blood levels of healthy fats (PUFAs) are linked to a lower risk of artery hardening [R, R].

In line with this, PUFAs (omega-3s) from food or supplements may help slow down plaque build-up in the arteries [R, R, R, R, R, R].

Healthy fats may help by reducing blood cholesterol and inflammation [R, R, R, R, R].

6



Leafy Green Vegetables

IMPACT

4 / 5

EVIDENCE

3 / 5

How to implement

Incorporate at least one serving of leafy green vegetables, such as spinach, kale, or Swiss chard, into your diet daily. This can be done by adding them to salads, smoothies, or as a side dish to your meals.

Description

Leafy green vegetables like spinach and kale are packed with vitamins, minerals, and antioxidants. Incorporating them into your diet can promote overall health by providing essential nutrients, supporting digestion, and reducing the risk of chronic diseases like heart disease and certain cancers.

Leafy green vegetables, also called leafy greens, or greens, are edible plant leaves, which can include stalks and shoots as well. Common examples include: lettuce, spinach, kale, chard, endive, and fennel.

Leafy greens contain a host of vitamins and minerals, as well as fiber. Most of them are a particularly good source of vitamin K.

How it helps

Experts suggest that a heart-healthy diet full of fruits, vegetables, and whole grains may help prevent or slow artery hardening [\[R\]](#).

People consuming more vegetables (≥3 servings/day) may have lower artery hardening [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Consuming cruciferous vegetables is associated with less plaque buildup and thickening of the carotid artery wall [\[R\]](#).

7



Avoid Secondhand Smoke

IMPACT

3 / 5

EVIDENCE

4 / 5

How to implement

Implementing a smoke-free lifestyle involves communicating your needs to family, friends, and coworkers, requesting they respect your choice by smoking away from you. At home, establish strict no-smoking policies indoors. When out, choose smoke-free venues and accommodations. Advocate for smoke-free environments in your community and support legislation that promotes public health by reducing exposure to secondhand smoke. Utilize air purifiers at home to reduce any residual particles.

Description

Avoiding secondhand smoke is crucial for maintaining good health. Exposure to secondhand smoke can lead to respiratory problems, cardiovascular disease, and an increased risk of lung cancer, even in non-smokers. Protecting oneself from secondhand smoke involves staying away from smoking areas, ensuring smoke-free environments at home and work, and advocating for smoke-free policies in public spaces.

How it helps

Smoking is linked to artery hardening. Smokers may be up to three times more likely to develop the condition [\[R, R, R, R\]](#).

Smoking is a major risk factor for [\[R, R, R\]](#):

- Plaque buildup
- Thickened blood vessel walls
- Narrowed arteries

Secondhand smoke can also damage the arteries [\[R, R\]](#).

Experts strongly recommend quitting to prevent artery hardening and heart disease [\[R, R, R, R, R\]](#).

Quitting may help by reducing oxidative stress [\[R\]](#).

8



Fruits And Vegetables

IMPACT

3 / 5

EVIDENCE

4 / 5

How to implement

Increase your intake of fruits and vegetables to at least five servings per day, aiming for a variety of types and colors to ensure a broad range of nutrients. Each serving size should roughly be the amount you can fit in one hand. Try to incorporate at least one serving of fruits or vegetables into every meal and snack throughout the day.

Description

A diet rich in fruits and vegetables provides essential nutrients, antioxidants, and dietary fiber. This combination supports overall health, helps maintain a healthy weight, and reduces the risk of chronic diseases such as heart disease and certain cancers.

How it helps

Experts suggest that a heart-healthy diet full of fruits, vegetables, and whole grains may help prevent or slow artery hardening [\[R\]](#).

People consuming more vegetables may have lower artery hardening. In a study of about 1,000 people found that consuming ≥3 servings of vegetables each day had about 4.6% to 5.0% lower artery hardening compared with those consuming <2 servings of vegetables. Only the following vegetable types may provide such benefits [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Cruciferous vegetables
- Allium
- Yellow/orange/red vegetables
- Leafy green vegetables
- Legumes

9

Aerobic Exercise (Cardio)

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

Engage in at least 150 minutes of moderate-intensity aerobic exercise or 75 minutes of vigorous-intensity activity each week. Distribute this time over at least 3 days per week, avoiding consecutive days of vigorous exercise to allow for recovery.

TYPICAL STARTING DOSE

1 hour

Description

Engaging in regular aerobic exercise, such as running, swimming, or cycling, offers numerous health benefits, including improved cardiovascular fitness, weight management, and mood enhancement. It supports overall physical and mental well-being while reducing the risk of chronic diseases.

Cardio, short for cardiovascular exercise, is any type of physical activity that temporarily increases your heart rate. Examples include **running, cycling, swimming, and brisk walking**.

Regular cardio exercise has many benefits for your overall health. It can help lower your risk of heart disease and diabetes, support weight loss, and improve your mood and energy levels. To get the most out of cardio, try to do it for at **least 30 minutes, 3-5 times a week**.

Interval training is a type of cardio that combines periods of high-intensity training with brief rest periods.

How it helps

A meta-analysis of 26 trials and 1654 participants concluded that aerobic exercise lowers pulse wave velocity (PWV), especially peripheral arterial PWV. Its effects on intima-media thickness were mixed [\[R\]](#).

Another meta-analysis (26 studies and 1370 participants) found that both aerobic and resistance exercise reduced carotid intima-media thickness (by 0.02 mm after at least 6 months) [\[R\]](#).

In patients with coronary atherosclerosis, aerobic exercise reduces carotid intima-media thickness, TC, and LDL-C, while increasing HDL-C, according to a meta-analysis of 34 studies and 2420 participants. Aerobic exercise is more effective than HIIT [\[R\]](#).

10

Gotu Kola and Pycnogenol

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

Take 60-120 mg of Gotu Kola extract and 100 mg of Pycnogenol daily. This supplementation routine can be followed for up to 12 weeks. The supplements can be taken with or without food but ideally at the same time each day for consistency.

TYPICAL STARTING DOSE

60 mg

Description

Gotu kola is an herb used in traditional medicine for its potential to improve cognitive function, reduce inflammation, and support skin health. Pycnogenol is a natural extract from French maritime pine bark known for its antioxidant properties. It may help improve vascular health, reduce inflammation, and support overall well-being.

[Gotu kola](#) or Pennywort (*Centella asiatica*) is an herb used in Tai-Chi tradition and Ayurvedic and Chinese Traditional Medicine.

Gotu kola is used as an antioxidant and anti-inflammatory. Traditional uses include:

- Wound healing [\[R\]](#).
- Improving leg circulation [\[R\]](#)

Gotu kola is usually combined with [pycnogenol](#). Pycnogenol is an extract of the French maritime pine bark (*Pinus pinaster*), which grows on the southwest coast of France [\[R\]](#).

It may improve [\[R, R, R, R, R, R\]](#):

- Athletic performance
- Seasonal allergies
- Cognitive function
- Joint health
- Varicose veins

How it helps

Gotu kola (60 mg, 3x/day for 12 months) may help with artery hardening by slowing down plaque build-up in the arteries [\[R, R\]](#).

Pycnogenol (200 mg/day for 8 weeks) may also help by [\[R\]](#):

- Maintaining healthy blood vessel function
- Reducing oxidative stress

The combination of gotu kola (100-180 mg/day) with pycnogenol (100-150 mg/day) for 3-12 months may also help with artery hardening and reduce the risk of heart disease [\[R, R, R, R, R, R, R, R\]](#).

Please note: *Gotu kola should not be used with sedative medications and any medications that can harm the liver* [\[R\]](#).

11



Eat Fiber-Rich Foods

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

Incorporate foods high in fiber, such as fruits, vegetables, whole grains, and legumes, into your daily meals. Aim for a total dietary fiber intake of 25 to 30 grams per day, spread out over all meals.

Description

Fiber is a type of carb that your body can’t digest which supports digestion, heart health, and blood sugar control. You can get fiber by eating things like whole grains, fruits, nuts, seeds, and leafy greens.

Fiber is a type of carb that your body can’t digest. It supports digestion, heart health, blood sugar control, and more [R, R].

Adults should get 28 g of fiber every day. Most people in the US don’t get enough fiber [R, R].

You can get more fiber by eating [R, R]:

- Whole grains
- Fruits
- Leafy greens
- Nuts and seeds
- Beans
- Broccoli

Fiber supplements, such as [psyllium husk](#), are available for people who don’t get enough fiber from their diets [R, R].

How it helps

A high-fiber diet may reduce the risk of artery hardening [R, R].

Eating more fiber may reduce cholesterol and blood pressure. This, in turn, may improve the signs of artery hardening [R, R].

Fiber supplements such as **psyllium husk (10 g/day)** may also help [R, R].

 PERSONALIZED TO YOUR GENES

People with your **LEP** variant may see a bigger drop in cholesterol from psyllium supplementation [R].

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
LEP	rs7799039	GG	

12



Avoid Sugary Foods & Drinks

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

To avoid sugary foods, eliminate or significantly reduce consumption of foods and beverages high in added sugars such as sodas, candies, baked goods, and sugary cereals from your diet. Instead, opt for natural sugar sources like fruits. Aim to do this daily for ongoing health benefits.

Description

High-sugar foods like baked goods, sweets, and sugary drinks, can spike your blood sugar levels. Consuming a lot of these types of foods can contribute to health issues like diabetes, obesity, insomnia, and heart disease.

High-sugar foods and refined carbs have a high glycemic index (GI). This means they tend to spike your blood sugar levels. They include [R](#), [R](#), [R](#):

- Sugary drinks
- Baked goods
- Sweets
- White bread
- White rice
- Pasta

Eating a lot of sugary foods can contribute to:

- Diabetes [R](#), [R](#), [R](#)
- Weight gain and obesity [R](#), [R](#)
- Insomnia [R](#)
- Heart disease [R](#)

You may also want to avoid processed sugars and sugary drinks. They may have a role in increasing IL-1B [R](#), [R](#).

How it helps

People who eat more sugary foods may be more likely to develop heart disease. The risk may be higher in women than in men [R](#).

Reducing or avoiding sugary foods can help reduce the risk of hardened arteries. Eating less sugar may help by improving [R](#), [R](#):

- [Insulin](#)
- Cholesterol
- Blood pressure
- Body weight

13



Limit Trans Fats

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

To limit trans fats, read food labels and choose products with 0 grams of trans fat. Avoid fried foods, packaged snacks, baked goods, and fast foods, which are common sources of trans fats. Aim to eliminate trans fats from your diet completely.

Description

Limiting trans fat intake is vital for heart health and reducing the risk of cardiovascular diseases. Avoiding foods high in trans fats and opting for healthier alternatives promotes better cardiovascular well-being.

Based on their structure, the fats in our diet can be broadly divided into *saturated* and *unsaturated* fat. Trans fat is a type of unsaturated fat [\[R, R, R\]](#).

In large amounts, trans fat and saturated fat may have a negative impact on your heart. Processed foods and animal products like red meat and dairy are rich in these fats [\[R, R, R\]](#).

How it helps

Research involving over 14,000 people found that a higher intake of trans fats correlates with increased thickness of the artery walls, a marker of artery hardening [\[R, R, R\]](#).

In line with this, diets low in saturated and trans fats may reduce cholesterol levels, blood pressure, artery thickening and improve blood vessel function [\[R, R\]](#).

14



Garlic Supplement

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

Take a garlic supplement, such as a garlic extract or aged garlic supplement, in a dosage of 600-1,200 mg per day, divided into separate doses. This should be taken with meals to minimize digestive issues. Continue daily for at least 8-12 weeks to evaluate its effects on health markers like blood pressure or cholesterol.

TYPICAL STARTING DOSE

200 mg

Description

Garlic is a pungent herb known for its potential health benefits, including cardiovascular support and immune system enhancement. It contains bioactive compounds that may help reduce the risk of chronic diseases and support overall well-being.

[Garlic](#) is a delicious aromatic herb that adds flavor to your food. But did you know that garlic has been a part of traditional medicine for thousands of years? **From ancient Egypt and Rome to China, people have praised garlic for its many health benefits.** Today, we can trace many of those benefits to sulfur-rich compounds found in garlic. People take garlic to help control their blood pressure and cholesterol [\[R\]](#).

Please note: *Garlic can interact with blood thinners (like aspirin, Plavix, Coumadin). If you are on blood thinners, consult your doctor before supplementing with garlic [\[R\]](#).*

How it helps

Garlic may support healthy blood vessel function and reduce plaque build-up. It may help healthy people and those with chronic health conditions. Helpful forms include [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- **Aged garlic extract** (1.2-2.4 g/day for 3-12 months)
- **Garlic powder** (0.9-1.2 g/day for 3 months)

Combinations with other supplements may have similar effects [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Garlic supplements may also reduce [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- High blood pressure
- Cholesterol
- Oxidative stress

Please note: *Garlic can interact with blood thinners (such as aspirin, Plavix, and Coumadin). In addition, garlic can irritate the stomach in some people. Talk to your doctor before taking garlic [\[R\]](#), [\[R\]](#).*

 PERSONALIZED TO YOUR GENES

Your ***FGF21*** gene variant is linked to higher cholesterol and blood pressure. Garlic may help by reducing cholesterol and blood pressure [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
FGF21	rs838133	AG	

15



Omega-3 (Fish Oil)

IMPACT

3 / 5

EVIDENCE

3 / 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

500 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

Higher blood levels of omega-3s are linked to a lower risk of artery hardening [\[R\]](#), [\[R\]](#).

In people with hardened arteries, **flaxseed oil (1-5 g/day for 10-12 weeks)** may reduce [\[R\]](#), [\[R\]](#):

- Levels of fat in the blood
- Blood pressure

In line with this, omega-3s from food or supplements may help slow down plaque build-up in the arteries. ALA, DHA, and EPA may all help [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Omega-3 supplements may also improve blood vessel function [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Omega-3s may help by reducing oxidative stress and inflammation [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Please note: *Omega-3s can interact with blood thinners (like aspirin, Plavix, Coumadin). Consult your doctor before taking omega-3s* [\[R\]](#).

16



Tea

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Drink 1-3 cups of tea daily, choosing from green, black, or herbal varieties according to preference. It's beneficial to consume tea throughout the day, either hot or cold, for ongoing hydration and health benefits.

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 polyphenols 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 many active compounds. These include antioxidants like EGCG and amino acids like [L-theanine](#). Active components of tea help support [\[R, R, R, R, R, R\]](#):

- Heart health
- Cognition
- Immunity
- Relaxation

How it helps

People who **drink a lot of tea (at least 2 cups/day)** may be less likely to develop hardened arteries or heart disease. If they do develop these conditions, they tend to be less severe and progress more slowly. However, one study didn't find a link between tea and hardened arteries [\[R, R, R, R, R\]](#).

Green tea extract (400 mg/day for 12 weeks) may have similar effects [\[R\]](#).

Tea may help blood vessels stay elastic. It may also reduce inflammation [\[R, R\]](#).

17



Spinach

IMPACT

3 / 5

EVIDENCE

3 / 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

A meta-analysis of 23 studies concluded that spinaches and other nitrate-rich foods lower platelet aggregation (by 18.9%) and blood pressure while increasing flow-mediated dilation (by 0.59%) [\[R\]](#).

Spinach is rich in nitrates, which get converted into nitric oxide in your body. This molecule dilates blood vessels, thus improving blood flow and preventing artery hardening. Additionally, it helps in lowering cholesterol levels, which can build up and harden arteries.

18



Tomato

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Incorporate fresh or cooked tomatoes into your daily diet. This can be achieved by adding them to salads, sandwiches, pastas, and sauces or simply eating them on their own. Aim for at least one serving (approximately 1 medium-sized tomato or 1/2 cup of chopped or cooked tomatoes) per day.

Description

Tomatoes are a fruit grown widely in numerous varieties, and are rich in vitamins C and K, as well as the antioxidant lycopene, which may contribute to heart health and protect against certain chronic diseases when incorporated into a balanced diet.

Tomato (*Solanum lycopersicum*) is a fruit originally from the Andes in South America. It is usually consumed as a vegetable in juices, sauces, or fresh. Tomato is an important source of [\[R\]](#):

- [Vitamin C](#)
- Potassium
- Antioxidants (e.g., [lycopene](#))
- Vitamin B9 ([folate](#))

Tomato is traditionally used for [\[R\]](#), [\[R\]](#):

- High cholesterol
- High blood pressure

How it helps

Tomatoes may help with artery hardening by [\[R\]](#), [\[R\]](#):

- Maintaining healthy blood vessel function
- Lowering “bad” cholesterol

Lycopene found in tomatoes may also help by reducing blood pressure. Higher blood levels of lycopene are also linked to a lower risk of artery hardening [\[R\]](#), [\[R\]](#).

19



Psyllium

IMPACT

3 / 5

EVIDENCE

2 / 5

How to implement

Take 5 grams of psyllium husk powder with at least 8 ounces of water. Do this once daily, preferably in the morning before breakfast. Continue this regimen daily for ongoing digestive health benefits.

TYPICAL STARTING DOSE

5 g

Description

Psyllium is a plant-based dietary fiber derived from the seeds of the *Plantago ovata* plant. It is primarily used both traditionally and today, as a dietary supplement due to its high soluble fiber content, aiding in digestive health and regulating bowel movements. The main compounds in psyllium are soluble fiber and mucilage.

[Psyllium husk](#) might be beneficial for gut health and heart health. But what exactly is this supplement and how does it work?

Psyllium is an herb that grows around the world. Its “husk,” the outer coating of the psyllium seed, is full of fiber. The health benefits of psyllium husk are due to this fiber.

How it helps

Psyllium husk (10 g/day for at least 3 weeks) may help with artery hardening by reducing blood cholesterol [\[R\]](#), [\[R\]](#).

20



Vitamin K2

IMPACT3 / 5

EVIDENCE2 / 5

How to implement

Take a vitamin K2 supplement once daily with a meal that contains fat, as fat increases its absorption. The recommended dosage can vary depending on the specific supplement but typically ranges from 100 to 300 micrograms per day. It is important to continue this supplementation daily for ongoing benefits to bone and cardiovascular health.

TYPICAL STARTING DOSE

100 mcg

Description

Vitamin K2 is a beneficial nutrient we often lack. It's like a traffic cop for your body, directing calcium to your bones and teeth where it's needed, rather than letting it clog up your arteries and organs. Ensuring you get enough Vitamin K2 boosts your bone and heart health.

How it helps

Vitamin K2 supplementation has shown mixed results in various studies. In hemodialysis patients, it reduced inactive MGP levels significantly, with a dose-dependent effect. In pediatric hemodialysis patients, it decreased inactive MGP and uc-OC, while in individuals with type 2 diabetes, it didn't improve atherogenic status. In atrial fibrillation patients receiving rivaroxaban, vitamin K2 reduced inactive MGP but didn't affect vascular calcification. A study in elderly men with aortic valve calcification found reduced inactive MGP but no impact on AVC progression. Similarly, in hemodialysis patients, vitamin K2 reduced uc-MGP but didn't halt aortic calcification progression [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Please note: *Vitamin K can interact with blood thinners (e.g., Coumadin). Make sure to consult your doctor before supplementing with vitamin K or drastically changing your dietary intake.*

21



Zinc

IMPACT

3 / 5

EVIDENCE

2 / 5

How to implement

Take a 15 mg zinc supplement daily, ideally with a meal to enhance absorption.

TYPICAL STARTING DOSE

10 mg

Description

Zinc is an essential mineral found in various foods, including meat, dairy, and nuts. It is crucial for immune function, wound healing, DNA synthesis, and maintaining healthy skin and nails. Zinc supplements are sometimes used to support immune health and manage zinc deficiencies.

[Zinc](#) is an essential mineral. Your body needs it to [\[R\]](#), [\[R\]](#):

- Defend against disease
- Protect DNA from damage
- Heal wounds
- Control blood sugar

Some of the best sources of zinc include **shellfish, pork, beef, and beans**. It is also available as a supplement [\[R\]](#).

Adults should get **8-11 mg of zinc** per day [\[R\]](#).

How it helps

Zinc supplements may improve some risk factors for artery hardening, such as [\[R\]](#), [\[R\]](#), [\[R\]](#):

- High levels of cholesterol in the blood
- High blood sugar levels

Zinc may also help by reducing oxidative stress and inflammation [\[R\]](#), [\[R\]](#).

Please note: *A high intake of zinc may cause stomach pain and gut irritation. Medical bodies recommend against taking more than **40 mg** of zinc per day* [\[R\]](#), [\[R\]](#).

22



Vitamin K1

IMPACT

3 / 5

EVIDENCE

2 / 5

How to implement

Take a vitamin K1 supplement once daily with a meal that includes fat, as fat increases its absorption. The dosage can vary depending on individual needs, but a common dose is between 90-300 micrograms. Continue this regimen daily for ongoing health benefits, particularly for bone and cardiovascular health.

TYPICAL STARTING DOSE

90 mcg

Description

Vitamin K encompasses two main forms: vitamin K1 (phylloquinone) and vitamin K2 (menaquinone). Vitamin K1 is primarily found in leafy green vegetables and plays a crucial role in blood clotting. Vitamin K2, sourced from animal products and fermented foods, is known for its potential to promote bone health and cardiovascular wellness.

How it helps

A study of 561 participants associated low vitamin K status with 34% higher risk of extreme coronary artery calcification progression. In line with this, supplementation with vitamin K1 (500 µg/day) for 3 years slowed down coronary artery calcification progression by 6% in a placebo-controlled trial of 388 older participants [\[R\]](#), [\[R\]](#).

In a placebo-controlled trial of 149 diabetic patients, supplementation with vitamin K1 (10 mg/day) for 3 months decreased the risk of developing new calcifying lesions within the aorta and the coronary arteries (about 3 times) [\[R\]](#).

In a placebo-controlled trial of 181 postmenopausal women, supplementation with vitamin K1 and D decreased the distensibility coefficient of the arteries (by 8.8%) while increasing PP (by 6.3%) and the Young's Modulus (by 13.2%) [\[R\]](#).

Please note: *Vitamin K can interact with blood thinners (e.g., Coumadin). Make sure to consult your doctor before supplementing with vitamin K or drastically changing your dietary intake.*

23



Avoid Exposure to Heavy Metals

IMPACT

3 / 5

EVIDENCE

1 / 5

How to implement

To avoid exposure to heavy metals, ensure you're not using cosmetic products with heavy metals, opt for organic foods to minimize pesticide exposure, and use filters for drinking water to remove possible contaminants. Check for lead-based paints in older homes and avoid cooking or storing food in uncoated metal containers. When possible, choose glass or BPA-free plastics instead.

Description

Heavy metals are elements naturally found in the environment. They are also used for agricultural, industrial, and medicinal purposes. Some can even be found in small amounts in your body [\[R\]](#), [\[R\]](#).

Long-term exposure to high amounts of heavy metals can be harmful to your health [\[R\]](#), [\[R\]](#).

Heavy metals that are most often linked to health problems include [\[R\]](#), [\[R\]](#):

- Lead
- Cadmium
- Arsenic
- Chromium
- Mercury

How it helps

People who are exposed to a lot of arsenic are more likely to have hardened arteries within 10 years [\[R\]](#).

Arsenic may contribute to artery hardening by increasing oxidative stress [\[R\]](#), [\[R\]](#).

24



Blueberries

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

Incorporate a half to one cup of fresh or frozen blueberries into your daily diet. You can add them to your breakfast cereal, smoothies, or enjoy them as a snack on their own.

Description

Blueberries are a nutritious fruit packed with antioxidants, vitamins, and fiber. They are known for their potential to support brain health, reduce the risk of chronic diseases, and promote overall well-being.

[Blueberries](#) are enjoyed all around the world for their sweet taste and nutritional benefits. They may support [\[R\]](#):

- Heart health
- Cognitive function
- Normal blood sugar levels

How it helps

In a placebo-controlled trial of 44 adults, consuming a blueberry smoothie 2x/day for 6 weeks improved endothelial function. Consuming a blueberry beverage with 766-1791 mg flavonoids acutely improved vascular function (increased FMD) in 2 placebo-controlled trials of 21 healthy men. However, drinking a beverage with 25 g freeze-dried blueberries daily for 6 weeks only reduced oxidative stress but had no effects on endothelial function in a placebo-controlled trial of 18 male volunteers. Similarly, consuming blueberries (300 g) failed to acutely improve vascular function in a placebo-controlled trial of 10 healthy volunteers [\[R, R, R, R\]](#).

In a placebo-controlled trial of 48 participants with metabolic syndrome, consuming a freeze-dried blueberry beverage (50 g in 960 mL water) daily for 8 weeks decreased oxidized LDL and MDA levels. Consuming 22 g/day freeze-dried blueberry powder for 8 weeks reduced blood pressure and arterial stiffness in a placebo-controlled trial of 48 postmenopausal, hypertensive women. In a placebo-controlled trial of 25 sedentary men and postmenopausal women, consuming blueberry powder (equivalent to 250 g/day berries) for 6 weeks improved augmentation index and aortic systolic pressures [\[R, R, R\]](#).

Blueberries may also improve the lipid profile (especially triglycerides) according to 3 meta-analyses, but the results are mixed [\[R, R, R\]](#).

25

Avoid Arsenic Exposure

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Use a water filter certified to remove arsenic if you rely on well water, opt for arsenic-tested rice or rice products, and avoid using contaminated pesticides or herbicides in gardening or farming. Test your home for arsenic if you live in an area known for high levels of arsenic in soil or water. Limit consumption of foods known to accumulate arsenic such as rice and rice-based products, especially if you are pregnant, nursing, or preparing meals for young children.

Description

Avoiding arsenic exposure is essential for preventing potential health risks associated with arsenic contamination in drinking water and foods. Chronic exposure to arsenic has been linked to various health issues, including cancer and cardiovascular problems.

Arsenic is a [heavy metal](#) naturally found in the environment. It is used for mining, fracking, and industrial applications, such as the production of pesticides and wood preservatives, and the use of fossil fuels [\[R\]](#).

The main sources of exposure to arsenic are contaminated [\[R\]](#), [\[R\]](#), [\[R\]](#):

- **Drinking water**
- **Rice** and fish
- Air

Long-term exposure to high amounts of arsenic may be linked to health problems, including [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Skin disorders
- Heart disease
- High blood pressure
- Stroke
- Diabetes
- Cancer

Please note: *Soaking, washing until clear, and cooking rice with a high (1:6) water-to-rice ratio may help reduce rice’s arsenic content* [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

A study of 1,570 people associated high exposure to arsenic with a 5-24% increased risk of developing artery hardening within 10 years, especially in men [\[R\]](#).

Arsenic may contribute to artery hardening by [\[R\]](#), [\[R\]](#):

- Increasing oxidative stress
- Worsening blood vessel function
- Increasing inflammation

26



Dietary Antioxidants

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Incorporate foods rich in antioxidants, such as fruits (berries, oranges, plums), vegetables (spinach, kale, bell peppers), nuts (walnuts, almonds), and seeds (flaxseeds, chia seeds) into your daily meals. Aim for at least 5 servings of fruits and vegetables per day, ensuring a variety of colors to cover different antioxidants.

Description

Dietary antioxidants are compounds found in foods that help neutralize harmful molecules called free radicals, potentially reducing the risk of oxidative stress-related diseases and supporting overall health. Examples include vitamins C and E, beta-carotene, and polyphenols.

Our cells sometimes produce molecules called **reactive oxygen species (ROS)** [\[R\]](#).

High levels of ROS can cause [oxidative stress](#) and damage our cells. Oxidative stress plays a role in many health conditions, including [\[R\]](#):

- High blood sugar
- Type 2 diabetes
- Heart disease

Antioxidants are substances that help combat ROS [\[R\]](#).

Antioxidants are found in many plants. Good sources include [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Fruits like tomatoes, berries, and pomegranates
- Vegetables like onions, spinach, and celery
- Chocolate
- Olive oil
- Wine

How it helps

Eating foods high in antioxidants may help with artery hardening. These foods include **cocoa**, **tomatoes**, and **pomegranate juice**. They may help by [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Maintaining healthy blood vessel function
- Reducing plaque buildup
- Lowering “bad” cholesterol
- Decreasing blood pressure
- Improving oxidative stress and inflammation

[Lycopene](#) is an antioxidant found in tomatoes and other plants. Higher blood levels of lycopene are linked to a decreased risk of artery hardening [\[R\]](#).

27



Beetroot

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

Incorporate beetroot into your diet by eating it raw in salads or drinking beetroot juice. Aim for a serving of about one small beetroot or 200-250 ml of beetroot juice daily. You can maintain this dietary practice consistently as part of your regular diet.

Description

Beetroot is a vegetable rich in dietary nitrates, which may help improve cardiovascular health and exercise performance.

How it helps

Beetroots are rich in dietary nitrate, which converts into nitric oxide in the body. Nitric oxide helps dilate blood vessels, improving blood flow and helping to prevent or reduce the hardening of arteries.

Nine crossover and three parallel trials from 2008-2014, involving 246 participants, showed improved vascular function with inorganic nitrate and beetroot consumption. Effects may vary with age and cardiometabolic risk [\[R\]](#).

A systematic review of 43 studies until November 2020 found that beetroot inorganic nitrate supplementation improved arterial stiffness and endothelial function but had no significant impact on other cardiovascular parameters. This suggests a potential benefit for cardiovascular health [\[R\]](#).

In 34 studies, inorganic nitrate intake significantly lowered resting blood pressure, improved endothelial function, reduced arterial stiffness, and decreased platelet aggregation [\[R\]](#).

28



Soy

IMPACT

2 / 5

EVIDENCE

3 / 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

A diet high in soy may help reduce cholesterol. The benefit may be stronger in women [\[R\]](#), [\[R\]](#), [\[R\]](#).

In women who have gone through menopause, **soy supplements** may also help. Helpful types include [\[R\]](#):

- **Soy protein** (25-40 g/day)
- **Soy isoflavones** (50-150 mg/day)

When combined with a low-fat diet, soy protein may support healthy blood vessel function [\[R\]](#).

Soy may help the body break down cholesterol and clear it from the blood [\[R\]](#), [\[R\]](#).

29



Curcumin

IMPACT

2 / 5

EVIDENCE

3 / 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 (up to 2,000 mg/day for 1-3 months) may help [R, R, R, R]:

- Decrease fats in the blood
- Maintain healthy blood vessel function
- Reduce oxidative stress and inflammation

Note that curcumin is hard to absorb. Look for supplements with *nanocurcumin* or other forms of curcumin that are easier to absorb. Combining it with [piperine](#) (a compound in black pepper) may also help [R, R, R].

Please note: curcumin may interfere with iron absorption due to its iron-chelating properties, potentially exacerbating anemia or making it harder to manage. If you have anemia, consult your healthcare provider before using curcumin or turmeric supplements [R, R, R].

30



Whey Protein

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

Mix one scoop (approximately 25-30 grams) of whey protein powder with 8-12 ounces of water, milk, or your preferred beverage. Consume this drink 1-2 times per day, ideally post-workout or as a meal replacement.

TYPICAL STARTING DOSE

25 g

Description

Whey protein is a complete protein derived from milk during cheese production. It is rich in essential amino acids and is used to support muscle recovery, promote muscle growth, and provide a convenient protein source for athletes and fitness enthusiasts.

Whey is the liquid that separates from milk when cheese is made. [Whey protein](#) is full of amino acids (protein building blocks) that the body needs [\[R\]](#), [\[R\]](#).

Whey protein usually comes in the form of a powder that can be added to soft foods and drinks. People often use it to help with [\[R\]](#), [\[R\]](#):

- Athletic performance
- Nutritional deficiencies

How it helps

A meta-analysis of 16 trials concluded that supplementation with whey protein increases FMD (by 1.09%) but has no effect on arterial stiffness measures or NO levels [\[R\]](#).

31



Sleep for 7+ Hours

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

Ensure you allocate enough time in your schedule to achieve a minimum of 7 hours of sleep each night. This might involve going to bed earlier or adjusting your evening routine to promote relaxation and make it easier to fall asleep.

Description

Optimizing sleep involves adopting healthy sleep habits and creating a sleep-conducive environment to ensure restorative and sufficient sleep duration. It supports cognitive function, mood stability, and overall physical health. Most experts recommend getting **at least 7 hours of good-quality sleep each night**.

[Sleep](#) supports your body and mind [\[R, R\]](#). More precisely, sleep helps:

- Support brain health [\[R, R\]](#)
- Maintain a healthy weight and appetite [\[R, R, R\]](#)
- Regulate blood pressure [\[R, R\]](#)
- Balance blood sugar [\[R, R\]](#)

Ways to sleep better include [\[R\]](#):

- Reducing your bright light exposure (screen time) in the evenings
- Sticking to a regular sleep schedule
- Avoiding hunger or large meals before bed
- Avoiding nicotine, caffeine, and alcohol before bed
- Maintaining a sleep area that’s cool, dark, and quiet

How it helps

Poor sleep is associated with a high risk of artery hardening. Disrupted sleep patterns include [\[R, R, R, R, R, R\]](#):

- Sleep fragmentation
- Short sleep (especially less than 5 -6 h/night)
- Long sleep (more than 5 -6 h/night)
- Poor sleep quality

They may be linked to artery hardening by increasing the risk of [\[R, R\]](#):

- Inflammation
- Blood clots
- Blood vessel dysfunction

32

Maintain Optimal Vitamin D Levels

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Check your vitamin D levels, they should ideally be in the 30-66 ng/mL range. If your levels are lower than that, take a vitamin D supplement, 1000-4000 IU daily, to reach an optimal range.

TYPICAL STARTING DOSE
1000 iu

Description

Vitamin D, often referred to as the "sunshine vitamin," can be synthesized by the skin when exposed to sunlight, as well as being found in fish, eggs, and fortified milk. It helps regulate calcium absorption, promoting strong bones and a healthy immune system. Vitamin D deficiency can lead to conditions like rickets in children and osteoporosis in adults.

Your body needs [vitamin D](#) for strong bones. Vitamin D also plays a role in [\[R\]](#):

- Mood
- Immunity
- Heart health
- Blood sugar control

[Sunlight](#) is our main source of vitamin D. 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 [\[R\]](#), [\[R\]](#).

Foods like fish, eggs, and fortified milk provide small amounts of vitamin D. **People lacking vitamin D should consider taking a supplement** [\[R\]](#).

How it helps

Vitamin D deficiency is associated with artery hardening [\[R\]](#), [\[R\]](#), [\[R\]](#).

In line with this, vitamin D (2,000-4,000 IU/day for at least 12 weeks) may help with artery hardening by improving blood vessel function [\[R\]](#), [\[R\]](#).

However, not all studies found this benefit [\[R\]](#), [\[R\]](#).

Please note: *Experts recommend getting 600-800 IU of vitamin D per day. Medical bodies recommend against taking more than 4,000 IU per day* [\[R\]](#).

33



Soy Protein

IMPACT2 / 5

EVIDENCE3 / 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 (10-25 g/day for 6-8 weeks) may support healthy blood vessel function and slow down artery hardening, especially in menopausal women [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Soy protein may help by lowering blood cholesterol levels [\[R\]](#), [\[R\]](#), [\[R\]](#).

34



Niacin Supplements

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Take a 20 mg niacin supplement daily, preferably with a meal to aid in absorption and minimize potential stomach upset.

TYPICAL STARTING DOSE

20 mg

Description

Niacin is an essential B vitamin that plays a vital role in metabolism, supporting heart health, maintaining healthy cholesterol levels, and promoting overall cellular function when included in a balanced diet or as a supplement.

[Niacin](#) (vitamin B3) is found in many foods. It supports your nervous system, skin, gut, and more [\[R\]](#).

Adults should get **16 mg** of niacin a day, and most people get enough from their diets [\[R\]](#).

Experts recommend getting niacin from food rather than supplements [\[R\]](#), [\[R\]](#).

How it helps

Niacin (1-3 g/day for at least 6 months) may help with artery hardening by slowing down plaque build-up in the arteries [\[R\]](#).

Niacin may also help reduce the risk of heart disease. However, not all studies found this benefit [\[R\]](#), [\[R\]](#).

Please note: *Niacin has been linked to liver damage and strokes. It may also cause flushing, bruises, and bleeding. Most doctors do not recommend taking niacin unless a person can't take statins and has close medical supervision. Talk to your doctor before taking niacin* [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

35



Aquatic Exercise

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Participate in aquatic exercise sessions, such as swimming or water aerobics, for 60 minutes, 3 to 5 times per week. Ensure the exercise intensity is moderate, allowing you to talk but not sing during the activity. Consistency over time is key, so aim to incorporate this into your weekly routine for at least 3 to 6 months to observe benefits.

TYPICAL STARTING DOSE

1 hour

Description

Aquatic exercise involves physical activity performed in water, such as swimming, water aerobics, or aquatic therapy. It is gentle on the joints, making it suitable for individuals with mobility issues, and can help improve cardiovascular fitness and muscle strength.

Aquatic exercise is any type of low-impact physical activity performed in a pool. In this type of cardio exercise, water helps the body float, which reduces gravity and makes the practice more comfortable and tolerable [\[R\]](#), [\[R\]](#).

Compared to land-based exercise, aquatic exercise may be better by [\[R\]](#):

- Reducing the stress and impact on joints
- Lowering fracture risk

Hence, it is usually **recommended for the elderly**. Aquatic exercise is also suitable for people who don't know how to swim [\[R\]](#).

How it helps

Aquatic exercise in waist-to-chest-deep water (for 2-12 weeks) may reduce artery hardening and improve heart function, exercise tolerance, and strength. Studied aquatic exercises include [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Water walking
- Aquatic high-intensity interval training (HIIT)
- Cardio plus calisthenics

Aquatic exercise may help by reducing risk factors such as [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- High blood pressure
- High cholesterol

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Relaxation Techniques

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Incorporate relaxation techniques such as deep breathing exercises, meditation, or yoga into your daily routine. Spend at least 15-30 minutes each day practicing one of these techniques, preferably in a quiet, comfortable space without interruptions.

TYPICAL STARTING DOSE

30 minutes

Description

Relaxation techniques encompass various methods like deep breathing, yoga, meditation, and progressive muscle relaxation, aimed at reducing stress and promoting mental and physical relaxation. Practicing these techniques regularly can help manage stress, improve mental clarity, and enhance overall emotional well-being.

We all get stressed from time to time.

[Stress](#) can help you deal with a challenge or avoid danger. However, **it’s not healthy to be stressed for a long time** [\[R\]](#), [\[R\]](#).

Relaxation techniques such as [yoga](#) and [meditation](#) can relieve stress in different ways. Most of them focus on breathing and help you get rid of negative thoughts and emotions [\[R\]](#).

People use relaxation techniques to improve conditions like [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Anxiety
- Depression
- Chronic pain

Progressive muscle relaxation is another relaxation technique. In this technique, you focus on tensing and relaxing different parts of your body. It is common to start with the toes and slowly work your way up to the neck and head [\[R\]](#), [\[R\]](#).

Autogenic training is a relaxation technique that a person may carry out on their own. It uses exercises that take the mind’s attention to bodily sensations such as warmth and heaviness [\[R\]](#), [\[R\]](#).

How it helps

Stress may contribute to artery hardening and heart problems [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

This may be because stress increases [\[R\]](#), [\[R\]](#):

- Oxidative stress and inflammation
- Levels of cholesterol in the blood
- Blood pressure

Relaxation techniques such as [yoga](#) may help reverse these effects. In this way, yoga may help prevent and slow the progression of artery hardening [\[R\]](#), [\[R\]](#), [\[R\]](#).

Meditation may also help reduce some signs of artery hardening [\[R\]](#).



PERSONALIZED TO YOUR GENES

Your ***NRG1*** gene variant is linked to artery hardening. Stress may have a stronger impact on artery hardening in men with this variant [R, R].

YOUR GENETIC VARIANTS

GENE

NRG1

SNP

rs35753505

GENOTYPE

TT

EVIDENCE

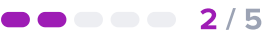


Coenzyme Q10 (CoQ10)

IMPACT



EVIDENCE



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 (150-300 mg/day for 4-12 weeks) may help with artery hardening by improving blood vessel function [R, 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].

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Cocoa

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Incorporate 30-60 grams of high-quality dark chocolate (with at least 70% cocoa content) into your daily diet. Enjoy it as a snack or dessert to reap the potential heart health benefits.

Description

[Cocoa](#) comes from the beans of the *Theobroma cacao* tree. It is found any many foods and drinks, and people have also used it as a medicine for thousands of years. The numerous active components of cocoa can help with weight control, fatigue, mood, and digestion, among others.

[Cocoa](#) comes from the beans of the *Theobroma cacao* tree. It’s often used for making chocolate, hot chocolate, and pastries. People have also used it as a medicine for over a thousand years [\[R, R\]](#).

Cocoa contains many active components that likely help [\[R, R, R, R\]](#):

- Control weight
- Lower fatigue
- Boost mood
- Improve digestion
- Balance blood sugar
- Support heart health

Note that pure cocoa is likely a healthier choice than chocolate. If you eat chocolate, choose dark chocolate with more cocoa and less sugar and fat.

How it helps

Cocoa may help with artery hardening by [\[R, R, R, R, R\]](#):

- Reducing inflammation
- Lowering blood cholesterol
- Maintaining healthy blood vessel function

Studied forms include [\[R, R, R, R\]](#):

- Cocoa powder (12-40 g/day for 4 weeks)
- Cocoa drink (450-900 mg/day of flavonols for 6 weeks)

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Magnesium

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take up to 350 mg of magnesium daily as a supplement, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

250 mg

Description

Magnesium is an essential mineral involved in various bodily functions, including muscle contractions, nerve signaling, and bone health. Maintaining adequate magnesium levels through diet or supplements can support overall well-being and reduce the risk of magnesium deficiency-related health issues.

[Magnesium](#) is an essential mineral. Your body needs it for [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Muscle, nerve, and bone function
- Blood sugar and blood pressure control
- DNA and protein production
- Strong immunity

Women need **310-320 mg** of magnesium per day, while men need **400-420 mg** [\[R\]](#).

Foods rich in magnesium include **nuts, seeds, and leafy greens**. Magnesium is also available as a supplement [\[R\]](#).

How it helps

Magnesium (300-1,200 mg/day for 1-6 months) may help support healthy blood vessel function and slow the progression of artery hardening. In people with hardened arteries, it may help maintain healthy blood sugar levels and reduce oxidative stress [\[R\]](#), [\[R\]](#), [\[R\]](#).

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Walking

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Incorporate at least 30 minutes of brisk walking into your daily routine, aiming for a minimum of five days a week. This can be done in one continuous session or broken into shorter periods, such as three 10-minute walks throughout the day.

TYPICAL STARTING DOSE

30 minutes

Description

Walking is a low-impact form of exercise that can contribute to cardiovascular fitness, weight management, and improved overall health. It is used to support physical activity goals, enhance mood, and promote better cardiovascular health.

How it helps

In a meta-analysis of 5 trials involving 719 people with peripheral artery disease (PAD), supervised treadmill exercise improved walking distance by 32.9m, while home-based walking exercise improved it by 50.7m. Home-based walking showed better improvement in 6MW distance but worse in treadmill walking distance [\[R\]](#).

A systematic review of 18 trials (1200 PAD patients) found intensive walking exercise significantly improved walking distance and performance, regardless of diabetes or baseline walking ability [\[R\]](#).

Nordic walking was studied in cardiovascular patients. In coronary artery disease, it improved exercise capacity and balance. In peripheral artery disease, it showed larger improvements in exercise duration and oxygen uptake. Further research is needed [\[R\]](#).

Contradicting studies exist. In a review of 5 trials (294 PAD patients), Nordic walking showed no significant advantage over standard walking in maximum walking distance. Partially supervised or home-based programs favored Nordic walking due to one trial's results [\[R\]](#).

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Avoid Refined Sugar

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Eliminate foods and beverages high in refined sugars, such as sodas, candies, pastries, and white bread, from your diet. Replace them with natural sugars found in fruits and whole grains. Implement this change immediately and maintain it indefinitely for long-term health benefits.

Description

Reducing the consumption of refined sugar and high-sugar foods can help prevent dental problems, manage blood sugar levels, and support weight management.

How it helps

Experts suggest that a heart-healthy diet low in refined sugars may help prevent or slow artery hardening [\[R\]](#).

In a study of 1,093 healthy women, those who consumed the most sugar-sweetened soda had a 2.6% increase in the thickness of their artery walls and were twice as likely to have artery hardening compared to those who drank the least. This effect was especially pronounced in older and postmenopausal women. However, not all studies suggest that sugary foods and drinks influence artery hardening [\[R\]](#), [\[R\]](#).

People with artery hardening are more likely to have insulin resistance, which is linked to regular consumption of sugar [\[R\]](#).

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Avoid Processed High Phosphate Foods

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

To follow this recommendation, remove or significantly reduce processed foods such as sodas, packaged snacks, processed meats, and canned foods from your daily diet. Instead, opt for fresh fruits, vegetables, whole grains, and lean proteins. It's helpful to read nutrition labels, aiming to keep your daily phosphate intake below 700 mg if possible.

Description

Processed foods often have high levels of phosphate. These include fast foods and soda. Extra phosphate can make bones brittle and damage your blood vessels over time. So, it's healthier to choose fresh foods over processed ones.

How it helps

Research in more than 3,500 people associated high-normal phosphate levels with early signs of artery hardening in young adults [\[R, R\]](#).

A high intake of ultra-processed foods (500 g/day) doubled the risk of artery hardening compared to lower intakes (100 g/day or less). Similarly, high dietary phosphate may increase the risk of artery thickening [\[R, R\]](#).

Elevated phosphorus in the body can lead to an increase in blood pressure and contribute to the hardening and narrowing of blood vessels by [\[R, R\]](#):

- Disrupting hormonal regulation (e.g., increasing parathyroid hormone levels)
- Promoting arterial calcification
- Increasing oxidative stress
- Impairing blood vessel function

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Mesoglycan

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take mesoglycan orally at a dose of 50-100 mg daily. It can be taken with or without food. Continue this regimen for a period as prescribed by your healthcare provider, usually for several months to assess its effectiveness for the intended treatment.

Description

Mesoglycan is a naturally occurring substance often used as a dietary supplement for its potential to support vascular health and circulation. It may help improve blood vessel elasticity and reduce the risk of certain cardiovascular issues.

Mesoglycan is a natural substance obtained from pig intestines or cow blood vessels. It is used for blood vessel health and wound healing [\[R, R, R\]](#).

How it helps

Mesoglycan (100-200 mg/day for 2-18 months) may help with artery hardening by [\[R, R, R, R\]](#):

- Slowing down plaque build-up in the arteries
- Improving blood vessel function
- Reducing inflammation

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Whole Grains

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Incorporate at least three servings of whole grains into your daily diet. This can include consuming foods such as whole grain bread, brown rice, whole grain pasta, and oats. Aim to replace refined grains with whole grains at each meal for optimal benefits.

Description

Whole grains encompass a variety of grains like wheat, oats, and quinoa, where the entire grain kernel is intact. They are rich in fiber, vitamins, minerals, and antioxidants, supporting heart health and reducing the risk of chronic diseases.

Unlike refined grains, whole grains contain nutritious parts of the grain like bran and germ.

Whole grains provide many crucial nutrients, including:

- Fiber
- B-vitamins
- Iron
- Magnesium
- Phosphorus

Due to their high fiber content, whole grains don’t tend to spike blood sugar like refined grains do.

How it helps

Experts suggest that a heart-healthy diet full of fruits, vegetables and whole grains may help prevent or slow artery hardening [\[R\]](#).

In a study of 1,178 people exploring the effects of whole-grain consumption on heart health, people who ate more whole grains had thinner walls in their carotid arteries, which could mean a lower risk of heart problems. The average whole-grain intake was less than one serving per day, but even this small amount was linked to healthier arteries [\[R\]](#).

Another study followed 229 postmenopausal women with heart disease over three years and found that those eating more than 6 servings of whole grains weekly experienced less narrowing and hardening of their heart arteries [\[R\]](#).

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Hydroxytyrosol And Punicalagin

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Take hydroxytyrosol and punicalagin in supplement form, typically available in capsules or tablets. The general dosage for hydroxytyrosol is around 5-10mg per day, and for punicalagin, it is about 300-600mg per day. Consult the specific product's label for exact dosing. It is recommended to take these supplements with a meal to enhance absorption. Continue this regimen daily for at least 8-12 weeks to assess effectiveness.

Description

Hydroxytyrosol is a natural phenolic compound found in extra virgin olive oil. It is known for its antioxidant properties and may contribute to the health benefits associated with the Mediterranean diet. Punicalagin is a polyphenol found in pomegranates and is known for its antioxidant properties. It may contribute to the health benefits of pomegranate consumption, such as heart health and potential anti-cancer effects.

How it helps

In a 20-week placebo-controlled trial with 84 subjects, supplementation of hydroxytyrosol (9.9 mg) and punicalagin (195 mg) significantly reduced LDL cholesterol, oxidized LDL, triglycerides, systolic and diastolic blood pressure, increased HDL cholesterol in all, and FMD in those with endothelial dysfunction. In an 11-day placebo-controlled trial with 36 participants, hydroxytyrosol supplementation (50-100 mg/day) lowered triglyceride levels by up to 21.64% [\[R\]](#), [\[R\]](#), [\[R\]](#).

46



Flaxseed

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Consume 2 tablespoons of ground flaxseed daily. You can add it to your breakfast cereal, smoothies, or salads.

TYPICAL STARTING DOSE

2 tbsp

Description

Flaxseed is a nutrient-dense food that's high in fiber and omega-3 fatty acids. It may contribute to heart health, promote digestive regularity, and help manage cholesterol levels when included in a balanced 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

In people with hardened arteries, flaxseed may reduce [\[R\]](#), [\[R\]](#):

- Blood fat
- Inflammation
- Blood pressure
- Oxidative stress

Studied forms include [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Flaxseed oil (1-5 g/day for 10-12 weeks)
- Ground flaxseed (30 g/day for 12 months)

47



Green Tea

IMPACT

2 / 5

EVIDENCE

2 / 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

Experts list green tea as one of the foods that may help prevent or slow artery hardening [\[R\]](#).

Research on over 400 people found that green tea consumption (2-4 cups/day) was associated with reduced risk of atherosclerosis, especially in men [\[R\]](#), [\[R\]](#), [\[R\]](#).

Consuming green tea may help by lowering [\[R\]](#), [\[R\]](#):

- Oxidized LDL cholesterol
- Inflammation
- Oxidative stress

Please note: polyphenols from green tea may bind to iron and form insoluble complexes, which reduces iron absorption in the gut. If you have anemia, consult your healthcare provider before using green tea [\[R\]](#).

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DASH Diet

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Adopt a dietary pattern that emphasizes fruits, vegetables, whole grains, lean proteins, and low-fat dairy, while reducing sodium, red meat, sweets, and sugary beverages. Aim for 4-5 servings of both fruits and vegetables per day, 6-8 servings of grains (with at least half being whole grains), and 2-3 servings of low-fat dairy. This diet should be followed daily to manage blood pressure effectively.

Description

The DASH (Dietary Approaches to Stop Hypertension) diet is a dietary plan designed to reduce high blood pressure. It emphasizes fruits, vegetables, lean proteins, and whole grains while limiting sodium intake.

Health experts developed the DASH diet to reduce blood pressure. This diet also helps support weight control while reducing inflammation and cholesterol [\[R\]](#).

It **limits salt, sweets, and saturated fat**, while promoting the intake of [\[R\]](#):

- Fruits (4-5 servings/day)
- Vegetables (4-5 servings/day)
- Whole grains (6-8 servings/day)
- Low-fat dairy (2-3 servings/day)
- Nuts, seeds, and legumes (4-5 servings/week)
- Fish and poultry (up to 6 ounces/day)

The DASH diet focuses on fresh, minimally processed food rich in nutrients. Magnesium, calcium, and potassium-rich foods are particularly important due to their beneficial effects on the heart and blood vessels [\[R\]](#).

Although similar to the [Mediterranean diet](#), DASH is lower in sodium (<2,300 mg a day) and omega-3 fatty acids. On the other hand, it’s higher in red meat and dairy [\[R\]](#).

How it helps

People who eat a low-salt diet (less than 1,500 mg/day) tend to have less plaque in their arteries [\[R\]](#), [\[R\]](#).

Some experts recommend the DASH diet to help with artery hardening. It is linked to a lower risk of developing the condition [\[R\]](#), [\[R\]](#).

The DASH diet may help by reducing blood pressure and inflammation [\[R\]](#), [\[R\]](#).

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Extra Virgin Olive Oil (EVOO)

IMPACT

2 / 5

EVIDENCE

2 / 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

A meta-analysis of 9 trials concluded that high-phenol olive oil lowers oxidized LDL by 0.29 U/L [\[R\]](#).

Polyphenol-rich olive oil (25 mL/day) consumed for 1-4 months also lowered oxidized LDL in 4 non-placebo-controlled trials of 111 participants not included in the meta-analysis [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

In a non-placebo-controlled trial of 82 patients with early atherosclerosis, consuming olive oil (30 mL) for 4 months improved endothelial function and inflammatory parameters (sICAM by 13 ng/mL, white blood cells by 2×108/L, monocytes from 4×107/L, and lymphocytes from 2.5×108/L [\[R\]](#).

In a double-blind crossover trial with chronic coronary artery syndrome patients, hydroxytyrosol-enriched olive oil (412.5 mg olive oil with 2.5 mg hydroxytyrosol for 1 month) significantly improved various cardiovascular markers compared to placebo. This included improved endothelial function, arterial health, and left ventricular diastolic function, while also reducing oxidative stress and inflammation markers [\[R\]](#).

50



Soy Isoflavones

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Take a soy isoflavone supplement containing 40 to 80 milligrams daily, ideally with food to improve absorption. This dosage can be continued on a daily basis for several months, but it's recommended to reevaluate its effectiveness and any potential side effects with a healthcare provider periodically.

TYPICAL STARTING DOSE

40 mg

Description

Soy isoflavones are natural compounds found in soybeans and soy products. They are phytoestrogens, which means they can mimic the effects of estrogen in the body and are associated with potential health benefits like menopausal symptom relief and improved heart health.

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

A meta-analysis of 8 studies found that soy isoflavones decreased arterial stiffness compared to placebo. Subgroup analyses found no differences based on intervention duration or gender [\[R\]](#).

51



Alpha-Linolenic Acid (ALA)

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Incorporate foods high in alpha-linolenic acid (ALA) into your daily diet. This means eating about a tablespoon (14 grams) of flaxseeds or chia seeds, a quarter cup (30 grams) of walnuts, or using one tablespoon of flaxseed oil every day.

Description

Alpha-linolenic acid (ALA) is a type of omega-3 fatty acid found in plant-based sources like flaxseeds, chia seeds, and walnuts. It is essential for maintaining heart and brain health and is considered a healthy dietary fat.

How it helps

Experts suggest that alpha-linolenic acid may help reduce cholesterol levels and high blood pressure, two major risk factors for artery hardening [\[R\]](#).

Research on over 2,000 people associated the highest dietary intake of alpha-linolenic acid with a 65% lower risk of artery hardening. Alpha-linolenic acid may help by lowering inflammation [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

52



Pomegranate

IMPACT

2 / 5

EVIDENCE

2 / 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 may help with artery hardening by [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Reducing plaque buildup
- Lowering “bad” cholesterol
- Decreasing blood pressure
- Improving oxidative stress

Studied forms include [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Juice (3x/week for 12 months)
- Extract (1 g/day for at least 2 months)

Please note: *Pomegranate root, stem, and peel may be harmful if consumed in large amounts* [\[R\]](#).

53



Pomegranate Juice

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

Drink 8 ounces (about 240 milliliters) of 100% pomegranate juice daily, ideally in the morning to incorporate it into your daily routine. Continue this practice regularly as part of your daily diet.

Description

Pomegranate juice is made from the seeds and pulp of the fruit. It is rich in nutrients, including vitamin C, vitamin K, folate, potassium, and dietary fiber., and provides a source of dietary antioxidants that may provide addition benefits for inflammation and heart health.

[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

In 10 people with artery hardening, drinking pomegranate juice (for a year) led to a decrease in artery thickness and blood pressure, alongside boosts in antioxidant levels and reductions in LDL cholesterol oxidation [\[R\]](#).

Hemodialysis patients consuming pomegranate juice (3x/week) saw improvements in artery hardening, with a reduction in related health issues. Additionally, people with high cholesterol taking pomegranate extract (1 g/day for 2 months) experienced lowered oxidative stress and better cholesterol levels [\[R, R, R\]](#).

54



Lycopene

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

Take a lycopene supplement of 10 to 30 mg per day. It can be consumed with a fat-containing meal to enhance absorption. This supplementation can be ongoing daily to support overall health benefits such as heart health and antioxidant protection.

TYPICAL STARTING DOSE

10 mg

Description

Lycopene is a powerful antioxidant found in tomatoes and other red or pink fruits and vegetables. Consuming lycopene-rich foods may help reduce the risk of chronic diseases and support heart and prostate health.

[Lycopene](#) is a bright red substance that gives color to a number of fruits such as [R](#), [R](#):

- Tomato
- Watermelon
- Papaya
- Apricot

Lycopene has antioxidant properties. It may help support [R](#), [R](#), [R](#):

- Heart health
- Prostate health
- Cognition

How it helps

In an 8-week study with 126 healthy men, lycopene supplementation (15 mg/day) led to increased serum lycopene levels, improved endothelial function, reduced inflammation, and enhanced antioxidant activity. These benefits were more pronounced in individuals with initial endothelial dysfunction [R](#).

55



Plant Sterols & Stanols

IMPACT1 / 5

EVIDENCE3 / 5

How to implement

Consume a total of 300 mg of plant sterols and stanols per day. This can be achieved by incorporating foods fortified with these compounds, such as certain margarines, orange juice, and yogurt drinks, into your daily diet or by taking a specific supplement that meets this dosage requirement.

TYPICAL STARTING DOSE

300 mg

Description

Plant sterols and stanols are plant compounds found in foods like fruits, vegetables, and whole grains. They are known for their cholesterol-lowering properties and can be beneficial when included in a diet aimed at reducing LDL cholesterol levels and promoting heart health.

Sterols and stanols are compounds in plants that are similar to cholesterol [\[R\]](#), [\[R\]](#).

They are naturally found in foods like **nuts, vegetable oils, and fruits**. However, people usually don’t eat enough of these [\[R\]](#).

Some companies add sterols and stanols to foods like **orange juice and margarine** [\[R\]](#), [\[R\]](#).

How it helps

Eating plants rich in sterols may help reduce the risk of artery hardening [\[R\]](#).

Sources of plant sterols and stanols that may reduce cholesterol include:

- **Nuts** like walnuts, pistachios, and almonds (at least 60 g/day) [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#)
- **Rice bran oil** (18-50 g/day) [\[R\]](#), [\[R\]](#)
- **Avocado** (135-500 g/day) [\[R\]](#), [\[R\]](#)
- Plant sterol and stanol supplements (2-9 g/day for 4-6 weeks) [\[R\]](#)

Both supplements and foods fortified with plant sterols may help the body manage cholesterol. This may help maintain healthy blood vessel function. In turn, these improvements may make the arteries less likely to harden [\[R\]](#), [\[R\]](#), [\[R\]](#).

However, not all fortified foods are healthy and good for your cholesterol and heart health.

56



Stair Climbing

IMPACT

1 / 5

EVIDENCE

3 / 5

How to implement

Incorporate stair climbing into your daily routine by choosing stairs over elevators or escalators whenever possible. Aim for at least 10 minutes of continuous stair climbing or multiple shorter sessions that add up to 10 minutes per day. This practice can be continued indefinitely to maintain or improve cardiovascular health and lower body strength.

TYPICAL STARTING DOSE

10 minutes

Description

Stair climbing is a great way to get a full-body workout, improve your cardiovascular health, and burn calories. It can also help to improve your balance and coordination.

How it helps

A large study involving 458,860 adults found that those climbing more than five flights of stairs daily had a 20% lower risk of developing artery hardening over a median follow-up of 12.5 years. As the number of flights climbed increased, the risk lowered [\[R\]](#).

A study involving 41 postmenopausal women with stage 2 hypertension found that a stair climbing regimen (4 days/week, 192 steps 2-5 times/day for 12 weeks) improved arterial stiffness, blood pressure, and leg strength. Reduction in arterial stiffness explained some of the blood pressure and strength improvements. Stair climbing may help prevent vascular issues and muscle weakness in menopause and aging [\[R\]](#).

57



Strength Training

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Engage in strength training exercises, such as weight lifting or bodyweight exercises, for 60 minutes per session, 2 to 3 times per week. Ensure you work all major muscle groups and rest each muscle group for at least 48 hours before exercising it again.

TYPICAL STARTING DOSE

1 hour

Description

Strength training, also called resistance or *anaerobic* training, contracts the muscles against an external resistance for short periods of time. This helps gain muscle strength, tone, and mass. This can include activities like weight lifting, pushups, and crunches.

Strength training, also known as resistance training, is a type of physical exercise that uses resistance to build strength, anaerobic endurance, and size [R]. Some of the most common strength training methods include [R]:

- Weight lifting
- Bodyweight exercises like push-ups, pull-ups, squats, and lunges.
- Resistance bands
- Plyometrics or explosive force exercises

The benefits of strength training are numerous, and include [R]:

- Increased muscle strength
- Improved bone health
- Reduced risk of injury
- Improved balance and coordination
- Enhanced mood
- Boost metabolism

Consult with a doctor before starting any new exercise program, especially if you have any health conditions.

How it helps

Strength training may improve blood vessel function in both healthy people and those with heart and metabolic diseases [R, R].

How to implement

TYPICAL STARTING DOSE

200 iu

Description

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 supplementation may help with artery hardening by [\[R, R, R\]](#):

- Improve blood vessel function
- Decrease arterial stiffness
- Lowering oxidative stress

Vitamin E supplementation (400-800 IU/day) may also decrease the risk of a heart attack and death from any cause in people with artery hardening [R, R, R, R].

However, experts warn about the potential risks associated with vitamin E supplementation [R].

Please note: While dietary vitamin E is generally considered safe, vitamin E supplements have been linked to prostate cancer. They may also not be the best option for pregnant people. Those who have heart disease, bleeding disorders, or other conditions may also need to avoid them. Consult your doctor before taking vitamin E supplements [R].

59



Blueberry Supplements

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Take a blueberry supplement capsule, usually ranging from 500 mg to 1000 mg, once daily. It's best to consume it with a meal to enhance absorption. Continue this regimen daily for at least 4 weeks to observe benefits.

TYPICAL STARTING DOSE

500 mg

Description

Blueberry supplements often contain concentrated extracts of blueberry compounds, including antioxidants like anthocyanins. They are used to support cognitive function, eye health, and overall antioxidant protection.

[Blueberries](#) are enjoyed all around the world for their sweet taste and nutritional benefits. They may support [\[R\]](#):

- Heart health
- Cognitive function
- Normal blood sugar levels

In addition to eating the fruits, people can take different blueberry supplements, such as **blueberry powder or extract**.

How it helps

In a placebo-controlled trial of 44 adults, consuming a blueberry smoothie 2x/day for 6 weeks improved endothelial function. Consuming a blueberry beverage with 766-1791 mg flavonoids acutely improved vascular function (increased FMD) in 2 placebo-controlled trials of 21 healthy men. However, drinking a beverage with 25 g freeze-dried blueberries daily for 6 weeks only reduced oxidative stress but had no effects on endothelial function in a placebo-controlled trial of 18 male volunteers. Similarly, consuming blueberries (300 g) failed to acutely improve vascular function in a placebo-controlled trial of 10 healthy volunteers [\[R, R, R, R\]](#).

In a placebo-controlled trial of 48 participants with metabolic syndrome, consuming a freeze-dried blueberry beverage (50 g in 960 mL water) daily for 8 weeks decreased oxidized LDL and MDA levels. Consuming 22 g/day freeze-dried blueberry powder for 8 weeks reduced blood pressure and arterial stiffness in a placebo-controlled trial of 48 postmenopausal, hypertensive women. In a placebo-controlled trial of 25 sedentary men and postmenopausal women, consuming blueberry powder (equivalent to 250 g/day berries) for 6 weeks improved augmentation index and aortic systolic pressures [\[R, R, R\]](#).

Blueberries may also improve the lipid profile (especially triglycerides) according to 3 meta-analyses, but the results are mixed [\[R, R, R\]](#).

60



Grape Polyphenols

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Take a grape polyphenol supplement with a dose of 150-300 mg daily, ideally with a meal to enhance absorption. This practice should be consistent for at least 3 to 6 months to observe benefits.

TYPICAL STARTING DOSE

150 mg

Description

Grape polyphenols, found in grape skin and seeds, have antioxidant properties that can help protect cells from oxidative damage and support cardiovascular health. They are a key component of red wine and grape-derived supplements, offering potential benefits for overall well-being.

How it helps

Nine studies found that grape polyphenol intake significantly increased FMD levels within 120 minutes compared to controls. Subgroups showed greater improvement in FMD for healthy subjects and those with cardiovascular risk factors [\[R\]](#).

How to implement

TYPICAL STARTING DOSE

500 mg

Description

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

Low vitamin C intake may be associated with an increased risk of artery hardening in adults with high cholesterol [R].

In line with this, vitamin C supplementation (500-2,000 mg/day) may improve blood vessel function in people with artery hardening. The benefit may be greater in older people and those with low vitamin C levels. However, more research is needed to confirm this benefit [R, R, R, R].

Vitamin C may help by decreasing oxidative stress [R, R, R].

Please note: Supplementing with vitamin C is linked to a slightly higher risk of kidney stones in men. Talk to your doctor before taking vitamin C [R, R, R].

62



Cocoa Extracts

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Take 500 to 1000 mg of cocoa extract daily, in supplement form, preferably with meals to enhance absorption. This dosage can be adjusted based on the concentration of the active compounds within the extract, and should be continued regularly for at least two to four weeks to observe benefits.

TYPICAL STARTING DOSE

500 mg

Description

Cocoa extracts and cocoa flavanols, derived from cocoa beans, have shown promise in supporting heart health by helping to reduce blood pressure and improve endothelial function, although further research is needed to fully understand their potential benefits.

How it helps

Cocoa flavanols boost production of nitric oxide, a molecule that helps widen and relax your arteries. This may help prevent artery hardening by improving blood flow and reducing blood pressure.

Seventeen studies (615 participants) on dark chocolate and six studies (179 participants) on flavonoids' effect on flow-mediated dilation (FMD) showed that chronic consumption of dark chocolate and flavan-3-ols increased FMD significantly. Flavonoid consumption above 40g/day had the highest FMD mean, while a non-linear dose-response was observed for dark chocolate, with the most impact at doses below 20g/day [\[R\]](#).

In a cross-sectional study comparing NASH, FLD, and control groups, patients with NASH and FLD exhibited higher Nox2 activity and isoprostanes, along with lower FMD and NOx compared to controls, with a gradient from FLD to NASH. In a 14-day intervention study with 19 NASH subjects, dark chocolate (high polyphenol content) improved FMD and NOx, while milk chocolate (low polyphenol content) did not. Linear regression showed FMD changes were associated with changes in Nox2 activity, isoprostanes, and NOx levels. Similar results were found for smokers [\[R\]](#), [\[R\]](#).

How to implement

Description

How it helps

Lead exposure can raise blood pressure and promote arterial plaque buildup.

64



Propionyl-L-Carnitine

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Take 500 mg to 2 g of propionyl-L-carnitine orally with meals to enhance absorption, divided into two or three doses throughout the day. Continue this regimen daily for a minimum of several weeks to observe benefits.

TYPICAL STARTING DOSE

500 mg

Description

Propionyl-L-carnitine is a naturally occurring compound that plays a role in energy production and cardiovascular health. It is often used as a dietary supplement to support circulation and reduce symptoms of conditions like peripheral artery disease.

Propionyl-L-carnitine is a supplement that people use to improve athletic performance, heart health, and more. It provides [L-carnitine](#), a compound that helps your body get energy from fat [\[R\]](#), [\[R\]](#).

How it helps

Propionyl-L-Carnitine may help in artery hardening (atherosclerosis) by improving blood circulation and reducing inflammation in the arteries. It also helps to prevent the buildup of fatty substances on the artery walls, reducing heart disease risk and promoting better heart health.

A systematic review and meta-analysis of clinical trials up to September 2010 evaluated the use of propionyl-L-carnitine (PLC, 1 g orally, twice daily) for claudication in patients with peripheral artery disease. PLC was found to significantly improve peak walking distance (PWD) by 16 meters compared to placebo, suggesting potential clinical relevance [\[R\]](#).

A study investigated the effects of propionyl-L-carnitine (PLC) on patients with chronic critical limb ischemia (CLI) unsuitable for surgery. PLC improved microcirculation and endothelial function, and reduced pain perception in CLI patients [\[R\]](#).

65



CBD

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a CBD supplement in a dosage ranging from 10 to 40 milligrams per day. Start with the lowest dose and gradually increase it based on your body's response. This can be taken orally in the form of capsules, edibles, or oil drops under the tongue. For ongoing issues, such as anxiety or chronic pain, it may be used daily, while for acute issues, it might be used as needed.

TYPICAL STARTING DOSE

10 mg

Description

CBD is a non-psychoactive compound found in cannabis plants and is used in various forms, including oils and creams. It may have potential benefits for pain relief, anxiety reduction, and overall relaxation, although more research is needed to fully understand its effects.

[Cannabidiol](#) (CBD) is a compound found in cannabis. Unlike its cousin THC, CBD is not psychoactive and can’t get you “high” [\[R\]](#).

People use CBD to:

- Reduce anxiety [\[R, R\]](#)
- Relieve pain [\[R, R, R\]](#)
- Prevent seizures [\[R\]](#)
- Improve sleep [\[R\]](#)

How it helps

CBD may help reduce artery hardening by reducing inflammation and acting as an antioxidant. This can potentially improve heart health and promote better circulation.

In a placebo-controlled trial of 26 healthy men, supplementation with CBD (600 mg/day) for 7 days reduced blood pressure during stress and arterial stiffness [\[R\]](#).

In a placebo-controlled trial of 16 people with untreated hypertension, supplementation with CBD (150 mg every 8 hours) for 24 hours lowered arterial stiffness (by 0.7 m/s), systolic blood pressure (by 5 mmHg), and mean arterial pressure (by 3 mmHg). Supplementation with CBD for 5 weeks lowered blood pressure and serum catestatin in a placebo-controlled trial of 54 hypertensive patients [\[R, R\]](#).

Please note: CBD can interact with medications and raise the levels of liver enzymes. It may not be safe for pregnant women. Never use CBD without consulting your doctor. Also, make sure to verify the legality of CBD in your country or state [\[R, R, R, R, R\]](#).

66



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 contains an amino acid called L-citrulline, which may help to lower blood pressure and reduce the thickness and stiffness of the arterial walls. The water content in the fruit also helps to hydrate the body and flush out excess sodium that may contribute to artery hardening.

In a double-blind crossover study with 12 healthy young women, a beverage with 90g of wild watermelon extract reduced lower limb arterial stiffness (PWV), increased blood flow in the posterior tibial artery, and raised plasma NOx levels [\[R\]](#).

67



Blood Orange Juice

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate 8-12 ounces of blood orange juice into your daily diet, preferably consumed in the morning or with a meal to maximize nutrient absorption and minimize potential blood sugar spikes.

Description

Blood orange juice is a bright and flavorful beverage that is squeezed from blood oranges. It's packed with vitamin C which helps to strengthen your immune system and overall health. The juice's red color comes from anthocyanins, a type of antioxidant that fights off harmful substances in your body. Therefore, regularly consuming blood orange juice not only refreshes you but also boosts your health.

How it helps

A study with 19 at-risk individuals found that drinking 500 mL of red orange juice daily for one week improved endothelial function and reduced inflammation markers compared to a placebo group [\[R\]](#).

68



Dragon Fruit

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate dragon fruit into your diet by eating it raw or adding it to salads, smoothies, or yogurt. Aim for consuming dragon fruit 2-3 times a week to enjoy its benefits. Simply slice it in half and scoop out the flesh to eat.

Description

Dragon fruit is a colorful tropical fruit rich in antioxidants, vitamins, and fiber. Consuming dragon fruit as part of a balanced diet can support overall nutritional wellness and may offer benefits such as improved digestion and skin health.

How it helps

In a placebo-controlled trial of 19 healthy volunteers, consuming dragon fruit powder (24 g/day) for 14 days increased acute FMD while reducing pulse-wave velocity and Alx [\[R\]](#).

Dragon fruit is rich in antioxidants, which prevent the oxidation of cholesterol, a building block of arterial plaques. It also has fiber that lowers high cholesterol levels, reducing the risk of artery hardening.

69



Dietary Magnesium

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Increase your intake of magnesium-rich foods such as leafy green vegetables, nuts, seeds, and whole grains. Aim to include these foods in your diet daily, following the recommended dietary allowance of 320 mg per day for women and 420 mg per day for men.

Description

Magnesium is a vital mineral involved in over 300 biochemical reactions in the body. It supports various functions, including muscle and nerve function, bone health, and blood sugar regulation.

Magnesium is an essential mineral. Your body needs it for [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Muscle, nerve, and bone function
- Blood sugar and blood pressure control
- DNA and protein production
- Strong immunity

Women need **310-320 mg** of magnesium per day, while men need **400-420 mg** [\[R\]](#).

Foods rich in magnesium include **nuts, seeds, and leafy greens**. Magnesium is also available as a supplement [\[R\]](#).

How it helps

Research involving about 27,000 people revealed that low levels of blood magnesium may be linked to an up to 30% higher risk of developing artery hardening over 24.4 years. Low magnesium may be linked to artery hardening by increasing the risk of [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Inflammation
- Artery plaques
- Blood clots

Low magnesium levels in people with artery hardening may also increase the risk of neurological complications, such as strokes [\[R\]](#).

70



Dietary Polyphenols

IMPACT

1 / 5

EVIDENCE

1 / 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

In a study involving 1,139 elderly people at high risk for heart issues, a high intake of polyphenols was linked to lower levels of inflammation related to artery hardening and improved “good” cholesterol levels, blood pressure, and heart health after one year [R].

71



Hot Water Bathing

IMPACT

1 / 5

EVIDENCE

1 / 5

Description

Hot water bathing is a deeply comforting and therapeutic practice that has been cherished across cultures for centuries. Immersing yourself in hot water can do more than just cleanse the body; it offers a myriad of health benefits that contribute to overall well-being. Here are some of the notable advantages [R, R, R]:

- Muscle relaxation
- Stress reduction
- Improved mood
- Better sleep

How it helps

A study involving 873 people found that those who bathed in hot water five or more times per week had lower indicators of artery hardening and lower progression of the disease. Hotter water and higher frequency may offer greater benefits [R].

72



Pycnogenol

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 100 mg of pycnogenol supplement daily. This can be taken in a single dose or divided into two doses of 50 mg each, one in the morning and one in the evening.

TYPICAL STARTING DOSE

100 mg

Description

Pycnogenol (pine bark extract) is derived from the bark of the maritime pine (Pinus pinaster). It has been used in traditional n European folk medicine for centuries, and more recently as a supplement. The extract contains a group of bioactive compounds known as proanthocyanidins, which may be beneficial in supporting cardiovascular health, promoting skin health, and aiding in the management of various conditions related to inflammation and oxidative stress.

Pycnogenol comes from the bark of pine trees that grow in the Mediterranean [\[R\]](#), [\[R\]](#).

It may improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Athletic performance
- Seasonal allergies
- Cognitive function
- Joint health
- Varicose veins

How it helps

In a small study in 23 people with heart artery disease, pycnogenol (200 mg/day for 8 weeks) combined with standard therapy improved blood vessel function while reducing oxidative stress [\[R\]](#).

73



Hesperidin

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 500 mg of hesperidin supplement daily with water, preferably with a meal for better absorption. This should be maintained for at least a few weeks to gauge effectiveness, and adjustments should be made based on personal tolerance and results.

TYPICAL STARTING DOSE

500 mg

Description

Hesperidin is a flavonoid, a type of plant compound that has antioxidant and anti-inflammatory properties. It is found in citrus fruits, such as oranges, grapefruits, lemons, and tangerines.

People take hesperidin to reduce [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Inflammation
- Blood sugar
- Cholesterol

How it helps

In a crossover trial with 24 individuals having metabolic syndrome, 500 mg/day of oral hesperidin for 3 weeks improved endothelial function, as indicated by increased flow-mediated dilation and reduced inflammatory biomarker levels compared to a placebo [\[R\]](#).

74



Bromelain

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 500mg of bromelain supplement two to three times daily, preferably with food to reduce the risk of gastrointestinal discomfort. It is recommended to use for short-term relief, typically not exceeding several months, unless supervised by a healthcare provider.

Description

Bromelain is an enzyme found in pineapple that may have anti-inflammatory and digestive benefits. It's often used as a dietary supplement to aid digestion and reduce swelling associated with injuries or surgery.

[Bromelain](#) is an extract from pineapples. It’s rich in enzymes that break down proteins [\[R\]](#).

Bromelain may have some health benefits. People use it to [\[R\]](#):

- Maintain joint health
- Help with burns
- Support heart health

How it helps

Healthy adults (n 18, age 24 (sd 4) years) received Bromelain (BE) or placebo in a randomized crossover design. Brachial artery flow-mediated dilation (FMD), BP, TAC, resting heart rate, oxygen utility capacity, and fatigability were measured pre and post-BE and placebo intake. The BE group showed significantly increased FMD, reduced systolic BP, and improved oxygen utility capacity compared with the placebo group [\[R\]](#).

75



Coconut Sugar

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Substitute regular table sugar with coconut sugar in your diet. Use it in the same quantities as you would normal sugar for cooking, baking, and in beverages like coffee or tea. Implement this change gradually, starting with one meal or drink a day, and adjust according to your taste and dietary needs.

Description

Coconut sugar is a natural sweetener derived from the sap of coconut palm trees. It is considered a healthier alternative to refined sugars because it has a lower glycemic index, which may help stabilize blood sugar levels, and contains small amounts of nutrients like potassium and iron.

How it helps

In a study with 19 middle-aged adults, taking 1.5 g/day of CSP reduced brachial systolic BP but not carotid SBP. It also decreased Young's and Peterson's elastic moduli, with some potential impact on CCA β -stiffness and compliance. There were no changes in cfPWV or biomarkers [\[R\]](#).

76



Blackcurrant Juice

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Drink 200-250 ml of blackcurrant juice daily, ideally in the morning or with a meal to optimize nutrient absorption. Continue this practice daily for at least 4-6 weeks to observe potential health benefits.

Description

Blackcurrant juice is a flavorful beverage rich in vitamin C and antioxidants, which can help support the immune system and protect cells from oxidative stress.

How it helps

A study with 66 participants investigated the impact of blackcurrant juice drink on oxidative stress and vascular function in individuals with low fruit and vegetable intake. They consumed 250ml of placebo or blackcurrant juice drink (low or high polyphenols) four times daily for 6 weeks. The high blackcurrant juice group showed improved flow-mediated dilation (FMD), increased plasma vitamin C, and lower F2-isoprostane concentrations, indicating reduced oxidative stress and enhanced vascular health, particularly when vitamin C levels increased [\[R\]](#).

77



Chinese Rhubarb

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take a supplement containing Chinese rhubarb extract, typically available in tablet or capsule form. The common dosage ranges from 500 to 1,000 mg per day, taken with water. It is advised to consult with a healthcare provider for the exact dosage based on individual health needs. Use this supplement daily for a period as recommended by the healthcare provider, usually not exceeding 8 weeks without medical advice.

TYPICAL STARTING DOSE

500 mg

Description

Chinese rhubarb is another traditional Chinese herbal remedy known for its potential to support digestive health and relieve constipation. It contains compounds that may have mild laxative effects.

[Rhubarb](#) (also named *Rhei* or *Dahuang*) is one of the most ancient herbs in traditional Chinese medicine. Rhubarb includes approximately 60 species of plants of the genus *Rheum* L. [\[R\]](#), [\[R\]](#).

The rhubarb rhizome is considered a top medicinal plant in Chinese medicine. It is used for [\[R\]](#), [\[R\]](#):

- Constipation
- Kidney disease
- Herpes
- Gum disease

It may help due to its antibacterial and anti-inflammatory effects [\[R\]](#).

How it helps

In a study of 103 atherosclerosis patients, one group received a placebo, while the other received rhubarb in addition to their 6-month baseline therapy. After completion, 83 patients showed decreased total cholesterol and LDL cholesterol in the rhubarb group, with significantly improved brachial artery endothelial function (FMD) [\[R\]](#).

Chinese rhubarb is rich in anthraquinones, which may help reduce plaque in your arteries. It can also help lower cholesterol and triglycerides.

Please note: *Be careful with rhubarb if you are prone to allergies. High doses of rhubarb may cause diarrhea and abdominal cramps. Avoid long-term use due to dependence risk. Rhubarb is not safe for people with gut conditions, women who are pregnant or breastfeeding, and children under 12 years of age. Make sure to consult your doctor before taking rhubarb* [\[R\]](#), [\[R\]](#).

78



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

In a study with 51 participants having moderate endothelial dysfunction and elevated LDL cholesterol, those taking ubiquinol (200 or 100 mg/day) for 8 weeks saw improved endothelial function, increased CoQ10 levels, enhanced serum NOx, and better LDL oxidation lag time compared to placebo [R].

79



Cranberry

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Consume one to two 8-ounce servings of unsweetened cranberry juice daily, or take 500 mg of cranberry supplements twice daily. Continue this practice consistently for at least several weeks to potentially observe benefits.

Description

Cranberries are known for their high antioxidant content and potential to promote urinary tract health by preventing bacterial adhesion. Consuming cranberries or cranberry products may help reduce the risk of urinary tract infections and provide antioxidant benefits.

Cranberries are fruits rich in vitamins, minerals, and antioxidants. They are available in different forms, including [R]:

- Dried fruits
- Juice
- Powder
- Pills

How it helps

In a placebo-controlled trial of 35 men, drinking cranberry juice (500 mL/day) for 4 weeks decreased the augmentation index in obese participants [R].

Cranberries are rich in antioxidants, which help lower LDL cholesterol and raise HDL cholesterol levels. They also contain polyphenols that reduce cell damage involved in artery hardening.

80



Pomegranate Extract

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 250 to 500 mg of pomegranate extract once daily, preferably with a meal to enhance absorption. This should be continued consistently for at least 4 weeks to observe potential health benefits.

TYPICAL STARTING DOSE

250 mg

Description

Pomegranate extract is derived from the fruit of the pomegranate tree, a plant that has been used traditionally for thousands of years, from the Mediterranean to Asia. Pomegranate extract is often used today in supplements due to its high levels of antioxidants like punicalagins and anthocyanins, which may support heart health and reduce inflammation.

[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

People with high cholesterol taking pomegranate extract (1 g/day for 2 months) experienced lowered oxidative stress and better cholesterol levels [\[R\]](#).

81



Hazelnuts

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate a handful of hazelnuts (about 1 ounce or 28 grams) into your diet daily. You can eat them as a snack, sprinkle chopped hazelnuts over salads, or use hazelnut butter in smoothies. Ensure they are unsalted to keep your sodium intake low.

Description

Hazelnuts are a nutrient-dense nut rich in healthy fats, fiber, and essential vitamins and minerals. Incorporating hazelnuts into your diet can support heart health, provide energy, and contribute to overall nutritional wellness.

Hazelnuts are a good source of manganese, magnesium, as well as being really good for vitamin E, B6, and healthy fats. A 1-ounce serving provides 1.6 mg of manganese or 70%DV.

How it helps

Consuming a diet enriched with hazelnuts (18-20%) for 4 weeks increased FMD (by 56.6%) and HDL cholesterol (by 6.07%), while lowering total cholesterol (by 7.8%), triglycerides (by 7.3%), LDL cholesterol (by 6.17%), oxidized-LDL, hs-CRP, and sVCAM-1 levels in a non-placebo-controlled trial of 21 hypercholesterolemic participants. In a non-placebo-controlled trial of 61 healthy volunteers, consuming unpeeled hazelnuts increased HDL cholesterol (by 7.3%) and brachial artery peak systolic velocities (by 43.4-60.7%). Their combination with cocoa further increased the beneficial effects [\[R, R\]](#).

82



Emoxypine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Emoxypine is typically available in oral capsules, tablets, or injectable forms, with the dosage depending on the condition being treated. For general antioxidant or neuroprotective purposes, the oral dose ranges from 125–250 mg taken 2–3 times daily, while more intensive treatments may require higher doses or injectable administration under medical supervision. It is usually recommended to take Emoxypine with meals to minimize gastrointestinal discomfort. Treatment duration can vary from a few weeks to several months, depending on the therapeutic goal.

Description

Emoxypine (2-ethyl-6-methyl-3-hydroxypyridine succinate) is a synthetic antioxidant and nootropic compound primarily used in Russia and some Eastern European countries. It is derived from pyridoxine (vitamin B6) and known for its neuroprotective, anti-stress, and anti-inflammatory properties.

Emoxypine can reduce anxiety, stress, and symptoms of depression by normalizing neurotransmitter levels and protecting brain cells from oxidative stress. Additionally, it has applications in managing cognitive impairment, improving memory, and protecting against age-related neurodegeneration. Emoxypine is also used for cardiovascular health, as it can improve blood flow and protect tissues from ischemia-reperfusion injuries.

Emoxypine works by scavenging free radicals, enhancing membrane fluidity, and improving the body's antioxidant defenses.

How it helps

A 3-week course of Emoxypine reduced lipid peroxidation and pain in a study of patients with atherosclerosis in the abdominal aorta [\[R\]](#).

83



Chondroitin

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 400 mg of chondroitin sulfate orally, three times a day or 800 mg once daily. This supplement regimen is typically followed for up to 6 months to support joint health.

TYPICAL STARTING DOSE

800 mg

Description

Chondroitin is often used as a supplement to support joint health and reduce the symptoms of osteoarthritis. It may help improve joint mobility and reduce discomfort in individuals with joint-related issues.

Chondroitin is a major component of cartilage. It helps keep cartilage healthy, and it provides the building blocks for the body to produce new cartilage.

People often combine chondroitin with glucosamine as supplements for joint health [\[R\]](#), [\[R\]](#).

How it helps

In a non-placebo-controlled trial of 48 patients with atherosclerosis, supplementation with chondroitin sulfate isomers (4.5 g/day) for 64 months reduced mortality, lowered cholesterol, prolonged thrombus formation time by 150%, and reduced thrombus weight. Chondroitin polysulfate was most effective [\[R\]](#).

Chondroitin may help by maintaining the flexibility of arteries, as it forms part of the arterial walls. It can also reduce inflammation, which is a significant factor in artery hardening.

84



Decaffeinated Coffee

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Replace your regular coffee intake with decaffeinated coffee. Aim to consume it in the same quantities and at the same times you would normally drink caffeinated coffee. This adjustment can be made indefinitely to reduce caffeine intake without altering your routine significantly.

Description

Decaffeinated coffee allows individuals to enjoy the flavor and aroma of coffee without the stimulating effects of caffeine, making it a suitable choice for those who are sensitive to caffeine or want to reduce their intake. It can still provide antioxidants and potential benefits like improved alertness.

How it helps

Decaffeinated coffee contains antioxidants that may reduce inflammation and limit the hardening of arteries. It's also free from caffeine which can raise blood pressure, a risk factor for artery hardening.

A meta-analysis of 14 short-term RCTs revealed a positive impact of coffee on endothelial function (EF) as measured by flow-mediated dilation (FMD). In contrast, three long-term RCTs showed no such effect on FMD, indicating potential unfavorable effects on arterial stiffness (AS) [\[R\]](#).

A meta-analysis of 14 short-term RCTs showed coffee intake positively affected endothelial function (EF) via flow-mediated dilation (FMD). Long-term RCTs, however, found no FMD improvement, suggesting potential adverse effects on arterial stiffness (AS) [\[R\]](#).

Please note: polyphenols and tannins from coffee may bind to iron and form insoluble complexes, which reduces iron absorption in the gut. If you have anemia, consult your healthcare provider before using coffee or coffee supplements.

85



Alpha-Lipoic Acid and Acetyl-L-Carnitine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 600 mg of alpha-lipoic acid and 1000 mg of acetyl-L-carnitine daily, preferably with meals to enhance absorption. This combination should be taken consistently for at least 3 to 6 months to observe potential benefits.

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. 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.

How it helps

In a study involving 36 individuals with coronary artery disease, a combined treatment of alpha-lipoic acid and acetyl-L-carnitine improved vasodilator function by increasing brachial artery diameter and showed potential in reducing systolic blood pressure, particularly in those with higher baseline blood pressure and metabolic syndrome [R].

86



Gotu Kola

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a Gotu Kola supplement, available in capsule or powder form, daily. Dosages typically range from 500mg to 2000mg daily, divided into two or three doses. It's recommended to start with the lower dose to assess tolerance and then increase if necessary. Continue for 4 to 6 weeks to evaluate the benefits.

Description

Gotu kola is an herb used in traditional medicine for its potential to improve cognitive function, reduce inflammation, and support skin health.

[Gotu kola](#) or Pennywort (*Centella asiatica*) is an herb used in Tai-Chi tradition and Ayurvedic and Chinese Traditional Medicine.

Gotu kola is used as an antioxidant and anti-inflammatory. Traditional uses include:

- Wound healing [R].
- Improving leg circulation [R]

How it helps

Supplementation with Gotu kola (180-200 mg/day for 12 months) may stop plaque build up in the arteries and improve blood vessel function [R, R].

87



Curcumin Theracurmin

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 90 mg of Theracurmin curcumin twice daily with meals. Continue this regimen for at least 8 weeks to observe potential benefits.

TYPICAL STARTING DOSE
180 mg

Description

Curcumin Theracurmin is another formulation of curcumin designed for enhanced absorption and bioavailability. It may offer various health benefits, including anti-inflammatory and antioxidant effects.

How it helps

In a placebo-controlled trial of 39 patients with mild COPD, supplementation with curcumin Theracurmin (90 mg, 2x/day) for 24 weeks reduced the levels of an artery hardening marker associated with future cardiovascular events [R].

Curcumin Theracurmin may help by reducing inflammation and oxidation, two key factors in the progression of artery hardening.

Please note: curcumin may interfere with iron absorption due to its iron-chelating properties, potentially exacerbating anemia or making it harder to manage. If you have anemia, consult your healthcare provider before using curcumin or turmeric supplements [R, R, R].

88



Transcendental Meditation

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Practice transcendental meditation for 20 minutes twice a day, once in the morning before breakfast and once in the afternoon or early evening. Sit comfortably in a quiet place, close your eyes, and silently repeat a mantra given to you by a certified transcendental meditation teacher.

TYPICAL STARTING DOSE
20 minutes

Description

Transcendental Meditation is a technique for mindfulness and stress reduction that involves silently repeating a specific mantra to attain a state of deep relaxation and heightened awareness. It is associated with reduced stress, improved focus, and enhanced overall well-being.

How it helps

In a non-placebo-controlled trial of 60 hypertensive participants, practicing transcendental meditation for 6-9 months decreased carotid intima-media thickness (by 0.098 mm) [R].

89

Cold Exposure

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Gradually expose yourself to cold temperatures for short periods, starting with 1-2 minutes and increasing up to 5-10 minutes. This can be achieved through cold showers, outdoor exposure in cold weather, or ice baths. Aim to do this 2-3 times per week.

TYPICAL STARTING DOSE

1 minutesute

Description

Cold exposure, when done safely and gradually, can have potential health benefits like increased calorie burn, improved circulation, and enhanced resilience to cold temperatures. Cold exposure techniques, such as cold showers or outdoor winter activities, may help boost metabolism and promote overall well-being when practiced mindfully.

Please note: rapid instead of gradual cold exposure causes dangerous, and even fatal, changes in the breath and heart rates, known as the cold shock response. Be cautious with any form of sudden temperature change in your environment, especially if you have heart disease or other chronic conditions [\[R\]](#).

How it helps

Taking brief dips in cold water (30 seconds at about 4-8°C, 3x/week for 5 months) may make your arteries less stiff and lower inflammation and bad cholesterol levels, according to a study of 35 healthy people [\[R\]](#).

However, being in mild cold (12°C) may not change artery stiffness [\[R\]](#).

Please note: *Rapid cold exposure can cause life-threatening changes in your breathing and heart rate. This is called the cold-shock response. Be cautious of any form of sudden temperature change in your environment, especially if you have heart disease or other health conditions* [\[R\]](#).

90



Panax Notoginseng

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take 200-400mg of Panax notoginseng extract daily, preferably with food to enhance absorption. This can be done indefinitely for general health benefits or specifically for certain conditions as directed by a healthcare provider.

Description

Panax notoginseng (Sanqi) is a plant native to China and other parts of Asia. It has been utilized in traditional Chinese medicine for centuries and in recent decades as a supplement, to promote cardiovascular health, reduce bleeding, and alleviate pain. The primary active compounds are saponins called notoginsenosides, and it is commonly consumed in the form of herbal teas, capsules, or powders.

[Ginseng](#) is a plant people use to improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Sexual function
- Immunity
- Fatigue
- Attention

There are many different types of ginseng. The most common ones are [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Korean red ginseng, also called Asian ginseng (*Panax ginseng*)
- [American ginseng](#) (*Panax quinquefolius*)
- Chinese notoginseng, also called Sanchi (*Panax notoginseng*)

How it helps

Panax Notoginseng supplementation may improve artery hardening when combined with standard therapy according to research in 1,032 people. However, the supporting studies are small and low-quality [\[R\]](#).

91



Broccoli Sprouts

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Consume 2-4 tablespoons of fresh broccoli sprouts daily. They can be added to salads, sandwiches, or smoothies to make them easier to consume. Continue this practice daily for at least 3 months to potentially see benefits.

TYPICAL STARTING DOSE

2 tbsp

Description

Broccoli and broccoli sprouts are nutrient-dense vegetables packed with vitamins, minerals, and antioxidants. They are known for their potential to support a healthy immune system, protect against chronic diseases, and promote overall nutritional wellness.

How it helps

In a study with 72 participants (23 in group A, 26 in group B, and 23 in group C), a 4-week treatment with 10g/d of BSP significantly reduced serum triglycerides, OX-LDL/LDL ratio, and the atherogenic index of plasma (p<0.05). Group A also showed a significantly higher HDL-C concentration compared to group B and the placebo (p<0.01) [R].

A study involving 40 hypertensive individuals without diabetes and normal cholesterol levels found that ingesting 10g of dried broccoli sprouts daily for 4 weeks did not significantly improve endothelial function (measured by flow-mediated dilation, FMD) compared to a control group [R].

92



Green Tea Extract

IMPACT1 / 5

EVIDENCE1 / 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 (400 mg/day for 12 weeks) improved artery hardening in 20 people with type 2 diabetes [\[R\]](#).

Please note: polyphenols from green tea may bind to iron and form insoluble complexes, which reduces iron absorption in the gut. If you have anemia, consult your healthcare provider before using green tea [\[R\]](#).

93



Apples

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate at least one whole apple into your daily diet, either as a snack or part of your meals, ensuring to eat them consistently every day for an ongoing period to derive potential health benefits.

Description

Apples are a nutritious fruit known for their fiber content and antioxidant-rich skin. They support overall health by aiding digestion, reducing the risk of chronic diseases, and promoting heart health.

Apples (*Malus domestica Borkh.*) are one of the most widely consumed fruits in the world. They have a high nutritional value and content of antioxidants [\[R\]](#), [\[R\]](#).

Eating apples is associated with a lower risk of [\[R\]](#), [\[R\]](#):

- Heart disease
- Asthma
- Diabetes

How it helps

Apples are rich in dietary fiber and antioxidants, which help to lower bad cholesterol levels, reducing the risk of artery hardening. They also contain flavonoids that promote cardiovascular health by lowering blood pressure and reducing inflammation.

Consuming two apples daily reduced total and LDL cholesterol, triglycerides, and cell adhesion molecules while increasing uric acid and microvascular vasodilation in mildly hypercholesterolemic volunteers. No impact on blood pressure or other cardiovascular markers was observed [\[R\]](#).

A 5x4 weeks dietary crossover study with 23 healthy volunteers investigated apple-related supplements' effects on lipoproteins and blood pressure. Whole apples, pomace, and cloudy juice showed potential LDL-cholesterol reduction, while clear juice increased LDL-cholesterol. No impact on other parameters was observed [\[R\]](#).

A randomized crossover trial with 30 healthy participants found that apple, spinach, and apple+spinach treatments improved blood vessel function and lowered blood pressure compared to the control, with apple and spinach also reducing systolic blood pressure significantly. No significant impact on diastolic blood pressure was observed [\[R\]](#).

Out of 22 eligible studies (7 randomized controlled trials, 1 nonrandomized trial, and 14 prospective observational studies), apple intake in RCTs lowered BMI but had no notable impact on body weight, serum lipids, blood glucose, or blood pressure [\[R\]](#).

However, a double-blind study with 30 hypercholesterolemic volunteers found no difference in vascular function or cardiovascular risk factors after consuming polyphenol-rich and polyphenol-poor apples for 4 weeks each [\[R\]](#).

94

Hydroxytyrosol And Extra Virgin Olive Oil (EVOO)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a supplement containing at least 5 mg of hydroxytyrosol daily, and incorporate 1-2 tablespoons of extra virgin olive oil into your diet. This can be done by using the olive oil as a dressing for salads, drizzling it over cooked vegetables, or using it in low-temperature cooking.

TYPICAL STARTING DOSE

5 mg

Description

Hydroxytyrosol is a natural phenolic compound found in extra virgin olive oil. It is known for its antioxidant properties and may contribute to the health benefits associated with the Mediterranean diet. Extra virgin olive oil is a key component of the Mediterranean diet and is rich in monounsaturated fats and antioxidants like hydroxytyrosol. It is associated with heart health and may have anti-inflammatory properties.

How it helps

In a double-blind crossover trial with chronic coronary artery syndrome patients, hydroxytyrosol-enriched olive oil (412.5 mg olive oil with 2.5 mg hydroxytyrosol for 1 month) significantly improved various cardiovascular markers compared to placebo. This included improved endothelial function, arterial health, and left ventricular diastolic function, while also reducing oxidative stress and inflammation markers [\[R\]](#).

Hydroxytyrosol and extra virgin olive oil may help by decreasing inflammation and oxidation in the artery walls. Moreover, they may help strengthen the endothelium. This can provide resistance against plaque buildup.

95



Dietary Omega-3 Fatty Acids

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Incorporate foods high in omega-3 fatty acids into your diet daily. This includes eating fish such as salmon, mackerel, and sardines at least twice a week. Alternatively, include a tablespoon of flaxseed oil or chia seeds in your daily diet.

Description

[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. **EPA and DHA are vital for mental and heart health** [\[R\]](#), [\[R\]](#), [\[R\]](#).

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

- Salmon
- Tuna
- Herring
- Sardines

For optimal health, 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

Maintaining blood omega-3 levels between 4% and 8% may reduce the risk of heart disease by 30% [\[R\]](#).

96



Yoga

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Practice yoga for at least 20 to 30 minutes a day, most days of the week. Choose a style that matches your fitness level and goals, and consider attending a class or using online resources to guide your practice.

TYPICAL STARTING DOSE

30 minutes

Description

Yoga is a mind-body practice that combines physical postures, breathing exercises, and meditation. It enhances flexibility, strength, and mental well-being and is used for stress reduction, relaxation, and overall health improvement.

[Yoga](#) combines breathing, stretching, and relaxation techniques. Practicing yoga may help [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Reduce [stress](#)
- Improve fitness
- Lower blood pressure and heart rate
- Manage pain

How it helps

Experts recommend managing stress through relaxation techniques, such as yoga. They may reduce the risk of developing artery hardening [\[R\]](#).

A lifestyle yoga intervention reduced the progression of artery hardening in 42 people with heart disease [\[R\]](#).

97



Lactobacillus Plantarum

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a probiotic supplement containing *Lactobacillus plantarum* 299V daily. The typical dosage is 10 billion colony-forming units (CFUs). Continue for at least 4 weeks to assess benefits on digestive health.

TYPICAL STARTING DOSE
10 billion CFU

Description

[Lactobacillus plantarum](#) is a [probiotic](#) bacterium found in many fermented plant products such as sauerkraut, pickles, brined olives, and Korean kimchi [\[R\]](#).

People take *L. plantarum* supplements to improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Diarrhea
- Skin appearance
- IBD
- High cholesterol

How it helps

In a placebo-controlled trial of 20 men with stable CAD, supplementation with *L. plantarum* Lp299v (20 billion cfu/day) for 6 weeks improved vascular endothelial function and decreased systemic inflammation [\[R\]](#).

98



Mango Powder

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take 1 to 2 teaspoons (about 5 to 10 grams) of mango powder mixed with water or added to a smoothie. Do this once daily, preferably in the morning or as directed on the product packaging.

TYPICAL STARTING DOSE

5 g

Description

Mango powder is a versatile ingredient known for its natural sweetness and flavor. It's used in culinary applications and can be a convenient way to add the nutritional benefits and flavor of mangoes to a variety of dishes and beverages.

How it helps

Mango powder is rich in vitamins C, E, and K, which help in the prevention of artery hardening by reducing inflammation and oxidative stress. It's also packed with dietary fiber, which promotes healthy cholesterol levels.

A study found that daily doses of 100 mg or 300 mg of mango fruit powder had positive effects on microcirculation, glucose metabolism, and endothelial function in healthy individuals over 4 weeks. The 100 mg group showed increased microcirculatory reactive hyperemia flow, while the 300 mg group had lower postprandial glucose levels and improved endothelial function [\[R\]](#).

99



Meditation

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Set aside 10-20 minutes each day in a quiet space without distractions to practice meditation. Focus on your breath or perform guided meditation using an app or audio track.

TYPICAL STARTING DOSE

30 minutes

Description

Meditation is a mindfulness practice that can reduce stress, improve mental clarity, and promote relaxation. Regular meditation is associated with numerous mental and emotional health benefits, including reduced anxiety and enhanced emotional well-being.

Meditation is a relaxation technique that trains your mind to focus and redirect your thoughts. Some of the main types of meditation are [\[R\]](#):

- Mindfulness
- Focused
- Transcendental
- Mantra
- Moving

People use meditation to improve [\[R\]](#), [\[R\]](#):

- Stress and anxiety
- Mood
- Sleep disturbances
- Pain

How it helps

A stress-reduction program based on transcendental meditation (for 6-9 months) artery hardening in 60 healthy people [\[R\]](#).

100



Black Raspberry Extract

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take 300 to 600 milligrams of black raspberry extract daily, divided into two or three doses. It can be taken with or without food. Continue for at least 6 to 12 weeks to assess its benefits.

TYPICAL STARTING DOSE

300 mg

Description

Black raspberry extract is derived from black raspberries, which are rich in antioxidants like anthocyanins. This extract is used for its potential to promote heart health, protect cells from oxidative stress, and support overall health.

How it helps

In a double-blind crossover trial with 10 healthy males, consuming 200g and 400g of red raspberries rich in polyphenols resulted in significant improvements in artery hardening at both 2 hours and 24 hours after consumption compared to a control drink [\[R\]](#).

In a 12-week study on patients with metabolic syndrome, those taking 750 mg/day of black raspberry extract exhibited significant improvements compared to the placebo group. These improvements included greater reductions in [\[R\]](#):

- Total cholesterol levels and total cholesterol/HDL ratio
- Artery hardening
- Inflammatory markers such as IL-6 and TNF

In a study involving obese adults with type 2 diabetes, raspberry supplementation led to lower serum glucose levels at 2 and 4 hours postprandial during both acute and 4-week daily supplementation phases. **No effects were noted on fasting glucose and lipids, CRP, and arterial elasticity** [\[R\]](#).

101



Glutamine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 5 to 10 grams of glutamine powder, mixed with water or another beverage, daily. It can be divided into two servings, one in the morning and the other in the evening. This supplementation is generally considered safe for long-term use, but it's best to consult with a healthcare provider for personalized advice.

TYPICAL STARTING DOSE

5 g

Description

Glutamine is an amino acid that plays a role in various bodily functions, including immune support and gut health. It may help with muscle recovery and overall well-being, particularly for individuals engaging in strenuous exercise.

L-glutamine is an amino acid produced by the body. Its levels may decrease during periods of stress or illness. It is important for protein and energy production, and helps control kidney pH balance [\[R\]](#).

Some people take L-glutamine as a supplement to help with [\[R\]](#):

- Gut health
- Immunity
- Exercise recovery and muscle performance
- Brain health

How it helps

Glutamine aids body's nitrogen balance, promoting the production of nitric oxide. This could potentially help strengthen and increase flexibility in arterial walls, ultimately combating hardening.

In a placebo-controlled trial of 30 healthy men, supplementation with glutamine (0.3 g/kg body weight) for 14 days lowered IL-6, leptin, total cholesterol, oxidized LDL cholesterol, and oxidized LDL to HDL ratio [\[R\]](#).

102

TUDCA (Tauroursodeoxycholic Acid)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 250 to 1500 mg of TUDCA (tauroursodeoxycholic acid) per day, divided into two or three doses with meals. This recommendation is based on general guidelines from clinical studies; for specific conditions or as directed by a healthcare professional, dosages may vary.

TYPICAL STARTING DOSE

250 mg

Description

TUDCA is a bile acid derivative naturally produced in small quantities in the human body and also found in the bile of bears. It is often used as a supplement due to its potential to support liver health, reduce inflammation, and protect against bile acid buildup, making it valuable in managing liver conditions like cholestasis and certain liver diseases.

TUDCA, short for tauroursodeoxycholic acid, is a [bile acid](#) that naturally occurs in the body. It consists of ursodeoxycholic acid (UDCA) and taurine [\[R\]](#).

TUDCA is known for its liver-protective effects. People often use it as a dietary supplement to support liver health and promote overall well-being [\[R\]](#).

How it helps

In a placebo-controlled trial of 12 healthy volunteers, supplementation with TUDCA (1500 mg) prevented FMD decrease after an oral glucose load [\[R\]](#).

PERSONALIZED TO YOUR GENES

People with your [SLCO1B](#) gene variant may absorb TUDCA better [\[R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
SLCO1B1	rs4149056	TC	

103



Genistein

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a genistein supplement daily, with a usual dosage range between 30 mg to 100 mg. It is best taken with food to enhance absorption. Continue this regimen daily for at least six months to evaluate its benefits fully.

TYPICAL STARTING DOSE
30 mg

Description

Genistein is an isoflavone found in soy products that may offer potential health benefits, including antioxidant and anti-inflammatory properties. It has been studied for its potential role in hormone regulation and the reduction of certain cancer risks.

How it helps

In one study in postmenopausal women with metabolic syndrome, 1-year genistein supplementation (54 mg/day) alongside a Mediterranean-style diet and exercise improved cardiac function, particularly left ventricular ejection fraction and left atrium remodeling [R].

Another study involving 79 healthy postmenopausal women showed that 1-year genistein therapy (54 mg/day) had a similar positive effect on endothelial function as estrogen/progestin therapy, brachial artery flow-mediated dilation, and nitric oxide metabolism [R].

Genistein may help by improving the elasticity and health of your blood vessels. It works by promoting the production of nitric oxide.

104



Plum Juice

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Consume 8 ounces of plum juice daily, ideally in the morning to help improve digestion and potentially alleviate constipation. Continue this practice daily for at least 2 weeks to assess effectiveness.

Description

Plum juice, derived from the plum fruit, is rich in dietary fiber, vitamin C and K, as well as potassium and antioxidants. People drink it to support digestive health and regularity.

How it helps

Plum juice contains potent antioxidants that may help prevent the buildup of plaque in your arteries, slowing down the process of artery hardening. Its high Vitamin K content aids in clotting prevention, thus promoting smoother, healthier blood flow.

In a study involving 16 participants who consumed a high-fat, high-energy meal with either Queen Garnet Plum juice (rich in anthocyanins) or apricot juice (control), those in the anthocyanin group exhibited significantly higher 2-hour postprandial flow-mediated dilatation (+1.14%) and increased microvascular post-occlusive reactive hyperemia (+0.10 perfusion units per mmHg) compared to the control group [R].

105



GABA Supplement

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a GABA supplement in a dose up to 500 mg, three times daily. This supplementation should be taken with water, preferably with food to minimize gastrointestinal discomfort. The duration of supplementation can vary, but many users may start to see benefits within a few weeks of consistent use.

TYPICAL STARTING DOSE

1500 mg

Description

GABA is an amino acid that acts as an inhibitory neurotransmitter in the brain. It is used in some supplements for its potential to promote relaxation and reduce anxiety.

How it helps

In a double-blind clinical trial involving 432 patients with cerebrovascular disorders, GABA was compared to pyridoxine and placebo. Patients took 12 tablets (3 g) of GABA or 3 tablets (600 mg) of pyridoxine daily for 8 weeks. GABA showed significantly better global improvement rates at both 4 and 8 weeks compared to the other two groups. It was particularly effective in treating cerebral arteriosclerosis and showed superior improvement in subjective complaints and psychiatric findings [R].

GABA supplements may indirectly benefit artery hardening by reducing stress levels.

106



Mulberry

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a mulberry supplement at a dosage of 500mg to 1,000mg per day, preferably with meals to enhance absorption. This should be continued daily for at least 3 months to observe potential health benefits.

Description

Mulberries are the fruit of the mulberry tree, often used in traditional medicine and cuisine. It is a source of vitamins and antioxidants, potentially offering health benefits such as blood sugar control and immune support.

How it helps

In a placebo-controlled trial of 160 patients with coronary heart disease, supplementation with mulberry leaf extract (150 mg/day) for 1 year improved antioxidant and anti-inflammatory properties and serum lipid profile, and reduced carotid intima-media thickness [R].

Mulberry supplementation may help by reducing inflammation and oxidative stress, which are key contributors to artery hardening. Moreover, it can improve blood lipid profiles and reduce the plaque buildup that leads to artery hardening.

107



Avoid PAHs Exposure

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Minimize your exposure to Polycyclic Aromatic Hydrocarbons (PAHs) by avoiding or reducing consumption of charred, grilled, or smoked foods, not smoking or avoiding secondhand smoke, and limiting time spent in areas with heavy traffic or industrial fumes. Use exhaust fans in kitchens and ensure proper ventilation when cooking at high temperatures to reduce indoor levels of PAHs.

Description

PAHs or Polycyclic Aromatic Hydrocarbons are harmful substances found in smoke and grilled foods. Try to limit exposure to them for better health. For example, avoid inhaling smoke from cigarettes or barbeques and choose alternative cooking techniques over grilling. Minimizing PAHs can reduce the risk of several health issues, particularly lung and skin diseases.

How it helps

A study of 1005 participants associated high urinary 1-hydroxynaphthalene, 2-hydroxynaphthalene, and 1-hydroxypyrene with respectively 2.19, 2.22-, and 2.15-fold higher risk of severe abdominal artery calcification [\[R\]](#).

PAHs can cause oxidative stress and inflammation, which contribute to the buildup of plaque in the arteries.

108



Alpha-Lipoic Acid

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

100 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 a potent antioxidant that may help prevent artery hardening by reducing oxidative stress and inflammation in the blood vessels. It also helps boost the function of other antioxidants, which could further protect your arteries.

In a double-blind study with 58 subjects having metabolic syndrome, 4 weeks of therapy with irbesartan, lipoic acid, or their combination improved endothelium-dependent vasodilation and reduced interleukin-6 and plasminogen activator-1 levels compared to placebo [\[R\]](#).

109



Mitoquinone Mesylate (MitoQ)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take MitoQ supplement by swallowing one capsule each morning with water, preferably on an empty stomach to aid in its absorption. This should be done daily for an extended period, often several months, to notice a significant benefit in conditions related to mitochondrial dysfunction or to support overall mitochondrial health.

Description

Mitoquinone mesylate is a novel antioxidant compound that targets mitochondria, the energy-producing organelles in cells. It has the potential to support cellular health and may have applications in promoting overall well-being.

How it helps

In a placebo-controlled trial of 20 older adults, supplementation with mitoQ (20 mg/day) for 6 weeks increased brachial artery flow-mediated dilation by 42% and reduced aortic stiffness [\[R\]](#).

A single 80-mg dose increased brachial FMD (by 26%) and popliteal FMD (by 3.3%) in a placebo-controlled trial of 11 patients with peripheral artery disease [\[R\]](#).

110



Bitter Melon Supplement

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a bitter melon supplement in the form of capsules or tablets, typically ranging from 500 mg to 1000 mg per day, split into two to three doses before meals. It's recommended to follow the dosage instructions on the product label or consult a healthcare provider for personalized advice. Continue for as long as recommended by the healthcare provider, usually a few weeks to months, to monitor effectiveness and tolerance.

TYPICAL STARTING DOSE
500 mg

Description

Bitter melon supplements are often used in traditional medicine for their potential to support blood sugar control. They contain compounds that may help regulate glucose metabolism and promote overall metabolic health.

How it helps

Bitter melon has hypolipidemic properties, meaning it can help lower the levels of bad cholesterol in your body, thus reducing plaque build-up in your arteries. Furthermore, it can improve blood circulation, potentially reducing the risk of hardening arteries.

In a 10-week study with 95 diabetes patients, three groups were formed: Group I and Group II received bitter melon (2 g/day and 4 g/day, respectively), while Group III received glibenclamide (5 mg/day). Parameters such as blood lipids, atherogenic index, body weight, and SBP improved in Group I and Group II but worsened in Group III [\[R\]](#).

111



Hawthorn Extract and Japanese Knotweed

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 300mg of Hawthorn extract and 100mg of Japanese Knotweed supplement orally, three times daily with meals. This routine should be followed for at least three to six months to observe potential cardiovascular benefits.

Description

Hawthorn extract is used in herbal medicine for its potential to support cardiovascular health, including regulating blood pressure and improving circulation. Japanese knotweed is a plant known for its rich source of resveratrol, an antioxidant that may have various health benefits, including anti-inflammatory properties and potential cardiovascular support.

How it helps

In a study exploring the effects of Japanese knotweed and hawthorn extracts (2x/day for 6 months), 64 people with carotid artery disease experienced reduced artery thickness and plaque and lower levels of inflammation [\[R\]](#).

112



Onion

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate raw or cooked onions into your daily meals, aiming for about a half to one whole onion per day, depending on your taste preference and tolerance. This can be done by adding onions to salads, sandwiches, soups, or as a cooked ingredient in various dishes.

Description

Onions are a flavorful and versatile vegetable grown around the world. They are rich in antioxidants, vitamins, and minerals, like B-vitamins, vitamin C, phosphorus, and magnesium. Incorporating onions into your diet may promote heart health, improve immune function, and contribute to overall well-being.

How it helps

In a placebo-controlled study of 72 healthy overweight and obese participants, capsules of onion peel extract (100 mg quercetin/day, 50 mg quercetin 2x/day for 12 weeks) improved endothelial function (defined by flow-mediated dilation), and increased circulating endothelial progenitor cells counts [\[R\]](#).

113



Almonds

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Incorporate a handful of almonds (about 23 kernels) into your daily diet. You can eat them as a snack, add them to your breakfast cereals or yogurt, or include them in salads and other dishes. Do this consistently for ongoing health benefits.

Description

Almonds are a good source of omega-6s, protein and vitamins, making for a great snack food. A 1-ounce serving provides 3700 mg of omega-6.

Almonds are nutritious tree nuts that originate from the *Prunus dulcis* tree. They are packed with essential nutrients, including healthy fats, fiber, vitamin E, and magnesium, which collectively contribute to heart health, support weight management, and may help regulate blood sugar levels.

How it helps

Almonds are high in healthy monounsaturated fats and fiber that can help reduce the levels of bad cholesterol linked to artery hardening. They are also rich in magnesium, which can promote the relaxation and health of your veins and arteries.

Twenty-seven overweight volunteers underwent a randomized 2-period, crossover, controlled intervention study. the almond diet tended to improve FMD (p=0.06) and significantly decreased sVCAM (p=0.004) [R].

114



Raspberries

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate a half cup to one cup of fresh or frozen raspberries into your daily diet. You can add them to your breakfast cereal, blend them into a smoothie, or snack on them throughout the day.

Description

Raspberries are a type of berry native to Europe and Asia, known for their high vitamin C and dietary fiber content. They have astringent properties, can support immune health, and aid in digestion.

How it helps

In a double-blind crossover trial with 10 healthy males, consuming 200g and 400g of red raspberries rich in polyphenols resulted in significant improvements in artery hardening at both 2 hours and 24 hours after consumption compared to a control drink [R].

In a 12-week study on patients with metabolic syndrome, those taking 750 mg/day of black raspberry extract exhibited significant improvements compared to the placebo group. These improvements included greater reductions in [R]:

- Total cholesterol levels and total cholesterol/HDL ratio
- Artery hardening
- Inflammatory markers such as IL-6 and TNF

In a study involving obese adults with type 2 diabetes, raspberry supplementation led to lower serum glucose levels at 2 and 4 hours postprandial during both acute and 4-week daily supplementation phases. **No effects were noted on fasting glucose and lipids, CRP, and arterial elasticity** [R].

115



Royal Jelly

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a royal jelly supplement daily, starting with a dose of approximately 300 mg to 500 mg. It can be consumed either in capsule form or directly, depending on your preference, for a period ranging from 3 to 6 months to observe the potential health benefits.

TYPICAL STARTING DOSE

300 mg

Description

Royal jelly is a nutrient-rich substance secreted by worker bees to feed bee larvae and the queen bee. Royal jelly contains protein B-vitamins, calcium and iron. It is taken as a supplement for it's potential energy-boosting and immune-supporting properties.

How it helps

In a placebo-controlled trial of 100 healthy volunteers, supplementation with royal jelly (690 mg/day) for 4 weeks **improved vascular endothelial function (21.4% higher RH-PAT index)** [R].

116



Lutein

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Increase your intake of lutein by eating more dark, leafy greens such as spinach and kale, as well as other foods like corn, peas, and egg yolks. Aim to include these in your daily diet, consuming at least one serving of lutein-rich foods per meal. It can also be taken as a supplement.

Description

Lutein is an antioxidant pigment found in the eye, and may support eye health. It is commonly found in leafy green vegetables.

Lutein is an antioxidant pigment found in the eye. Many plants contain lutein, including [\[R\]](#), [\[R\]](#):

- Leafy greens (kale, spinach, leeks, lettuce)
- Cantaloupe
- Corn
- Peas
- Peppers
- Herbs (basil, parsley)

Lutein may help support eye health [\[R\]](#), [\[R\]](#).

How it helps

Lutein, a type of antioxidant, helps to prevent artery hardening by reducing inflammation and preventing the build-up of harmful substances on artery walls. Therefore, it can improve cardiovascular health by promoting better blood flow throughout your body.

In a 12-month study with 144 subjects aged 45-68, those taking 20 mg lutein or lutein + lycopene daily experienced a significant reduction in CAIMT (artery thickness) by 0.035 mm and 0.073 mm, respectively. Increased serum lutein was linked to reduced CAIMT [\[R\]](#).

117



Dietary Iron From Plant Sources

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Include plant-based sources of iron such as lentils, chickpeas, beans, tofu, cooked spinach, and quinoa in at least two meals daily. To enhance iron absorption, pair them with vitamin C-rich foods like oranges, strawberries, bell peppers, and broccoli in the same meal.

Description

Dietary iron from plant sources is a good source of iron for people who are trying to reduce their intake of animal products. Plant-based iron is found in foods like beans, lentils, spinach, and tofu.

How it helps

Genetically higher iron levels are linked to slightly lower odds of artery hardening [\[R\]](#) [\[R\]](#).

Please note: Increased iron intake from meat is linked to higher odds of diabetes and heart disease. Try to find a balance between plant and animal iron sources [\[R\]](#) [\[R\]](#) [\[R\]](#) [\[R\]](#).

118



Methylfolate

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take an L-methyl folate supplement (400-800 micrograms daily), ideally with a meal, to improve absorption. This dosage is recommended for adults, including pregnant women, to support overall health, especially to reduce the risk of neural tube defects in developing fetuses. Continue daily use as part of your regular supplement routine.

TYPICAL STARTING DOSE

400 mcg

Description

Folate, a B-vitamin, is crucial for DNA synthesis, cell growth, and the formation of red blood cells. Adequate folate intake supports overall health and reduces the risk of neural tube defects during pregnancy.

[Vitamin B9](#) (*folate*) plays an essential role in [\[R\]](#) [\[R\]](#) [\[R\]](#):

- Making DNA
- Metabolism
- Energy production

SelfDecode recommends L-methylfolate as the preferred folate supplement for those who need one. It is superior to folic acid because it doesn't require activation, but the research is still ongoing [\[R\]](#) [\[R\]](#).

How it helps

Supplementation with folate may reduce the risk of artery hardening more in people with certain gene variants [\[R\]](#).

119



Punicalagin

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take punicalagin as a supplement in the form of capsules or powder. Typically, the dosage ranges from 300 mg to 600 mg daily, divided into two doses taken with meals. Continue this regimen daily for at least one month to assess its effects.

TYPICAL STARTING DOSE

300 mg

Description

Punicalagin is a natural compound found in pomegranates and is known for its potent antioxidant properties. It is one of the primary compounds responsible for pomegranate's health benefits. Consuming punicalagin-rich foods or supplements may help protect cells from oxidative stress and inflammation.

How it helps

In a 20-week placebo-controlled trial with 84 subjects, supplementation of hydroxytyrosol (9.9 mg) and punicalagin (195 mg) significantly reduced LDL cholesterol, oxidized LDL, triglycerides, systolic and diastolic blood pressure, increased HDL cholesterol in all, and FMD in those with endothelial dysfunction. In an 11-day placebo-controlled trial with 36 participants, hydroxytyrosol supplementation (50-100 mg/day) lowered triglyceride levels by up to 21.64% [\[R\]](#), [\[R\]](#), [\[R\]](#).

This study evaluated the effect of an oral supplement containing HT and PC (SAx) on dyslipidemia in an adult population. A randomized, double-blind, controlled, crossover trial was conducted over a 20-week period. SAx significantly reduced TG and LDL and increased HDL [\[R\]](#).

In a 20-week randomized, double-blinded, placebo-controlled, crossover trial, a supplement (SAx) containing 9.9 mg of HT and 195 mg of PC showed significant improvements in endothelial function, as measured by flow-mediated dilatation (FMD), compared to placebo. SAx also reduced oxLDL levels in subjects with higher baseline levels, and decreased blood pressure in individuals with prehypertension and hypertension [\[R\]](#).

A study was divided into three groups receiving different doses of SOFE (olive fruit extract) or a placebo. Group 2 (500 mg SOFE) showed the most significant reduction in CAVI scores and increased energy intensity. Triglyceride levels notably dropped in Group 2 [\[R\]](#).

120



Japanese Knotweed

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take a Japanese knotweed supplement at a dosage of 200-400 mg per day, orally. This should be divided into two doses, once in the morning and once in the evening. Continue daily for at least 4-8 weeks to assess effectiveness.

TYPICAL STARTING DOSE

200 mg

Description

Japanese knotweed is an herb that has been used in traditional medicine for various health benefits, including potential antioxidant and anti-inflammatory effects. It may contribute to overall well-being when used in herbal remedies.

How it helps

In a study exploring the effects of Japanese knotweed and hawthorn extracts (2x/day for 6 months), 64 people with carotid artery disease experienced reduced artery thickness and plaque and lower levels of inflammation [\[R\]](#).

121



Hawthorn Extract

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 300mg to 600mg of hawthorn extract divided into two or three doses throughout the day. It's recommended to continue this regimen daily for at least 3 to 6 months to observe potential benefits.

Description

Hawthorn extract is used in herbal medicine for its potential to support cardiovascular health, including regulating blood pressure and improving circulation. It contains compounds that may help strengthen the heart and promote overall cardiovascular well-being.

[Hawthorns](#) (*Crataegus spp.*) are thorny trees or bushes with white flowers and red berries. Hawthorns are native to Europe, North America, and Asia. They belong to the same family as roses and edible fruits such as apples and pears [\[R, R\]](#).

Hawthorn is one of the oldest known medicinal plants in Europe. In European and American folk medicine, it is traditionally used for [\[R, R, R\]](#):

- Heart disease
- Digestive issues
- Anxiety and insomnia
- Diabetes
- Asthma

How it helps

In a study exploring the effects of Japanese knotweed and hawthorn extracts (2x/day for 6 months), 64 people with carotid artery disease experienced reduced artery thickness and plaque and lower levels of inflammation [\[R\]](#).

122



Hydroxytyrosol

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take a hydroxytyrosol supplement at a dose of 5 to 10 mg per day, with or without food. This supplement should be taken daily for at least 8 to 12 weeks to observe potential health benefits.

TYPICAL STARTING DOSE

5 mg

Description

Hydroxytyrosol is a natural phenolic compound found in extra virgin olive oil. It is known for its antioxidant properties and may contribute to the health benefits associated with the Mediterranean diet.

How it helps

In a 20-week placebo-controlled trial with 84 subjects, supplementation of hydroxytyrosol (9.9 mg) and punicalagin (195 mg) significantly reduced LDL cholesterol, oxidized LDL, triglycerides, systolic and diastolic blood pressure, increased HDL cholesterol in all, and FMD in those with endothelial dysfunction. In an 11-day placebo-controlled trial with 36 participants, hydroxytyrosol supplementation (50-100 mg/day) lowered triglyceride levels by up to 21.64% [\[R\]](#), [\[R\]](#), [\[R\]](#).

Next Steps

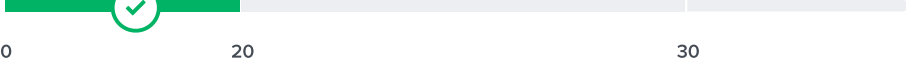
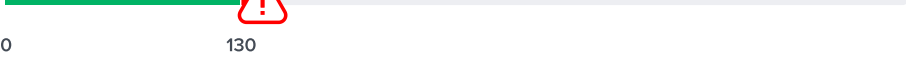
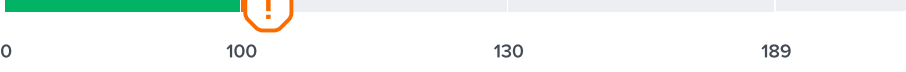
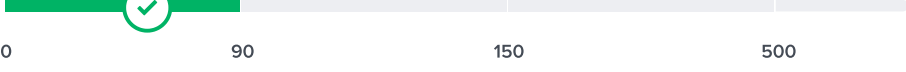
Remember, your genes only tell one important part of your health story!

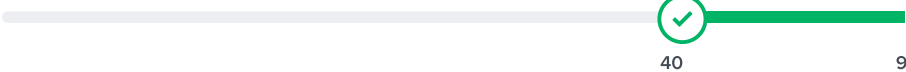
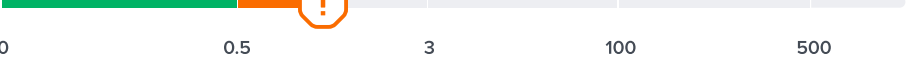
Now that you've seen your DNA-based results for this health topic, let's take a look at other contributing factors.

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.

	Apolipoprotein A1	119.5 mg/dL		9 Nov 2025
	Cystatin C	0.57 mg/L		9 Nov 2025
	Phosphorus	2 mg/dL		9 Nov 2025
	VLDL Cholesterol	11 mg/dL		9 Nov 2025
	Non-HDL Cholesterol	140 mg/dL		9 Nov 2025
	Ferritin	102.2 ng/mL		9 Nov 2025
	LDL Cholesterol	103 mg/dL		9 Nov 2025
	Glucose, Fasting	97 mg/dL		9 Nov 2025
	Triglycerides	54 mg/dL		9 Nov 2025

	HDL Cholesterol	42 mg/dL		9 Nov 2025
	Homocysteine	12.84 umol/L		9 Nov 2025
	Lipoprotein(a)	85.6 mg/dL		9 Nov 2025
	hs-CRP	1.6 mg/L		9 Nov 2025
	Testosterone, Total	1500 ng/dL		9 Nov 2025
	Calcium	9.2 mg/dL		9 Nov 2025
	Cholesterol, Total	182 mg/dL		9 Nov 2025
	HbA1c (%)	4 %		29 Dec 2025
	Iron	228 mcg/dL		9 Nov 2025
	ApoB	108 mg/dL		9 Nov 2025