SelfDecode™

Coronary Artery Disease

Disease Report

REPORT CATEGORIES

HEART & BLOOD VESSELS

LONGEVITY

Sample Client

Report date: 01 September 2025

Powered by omicsedge

Table of Contents

Personal information

NAME

Sample Client

SEX AT BIRTH

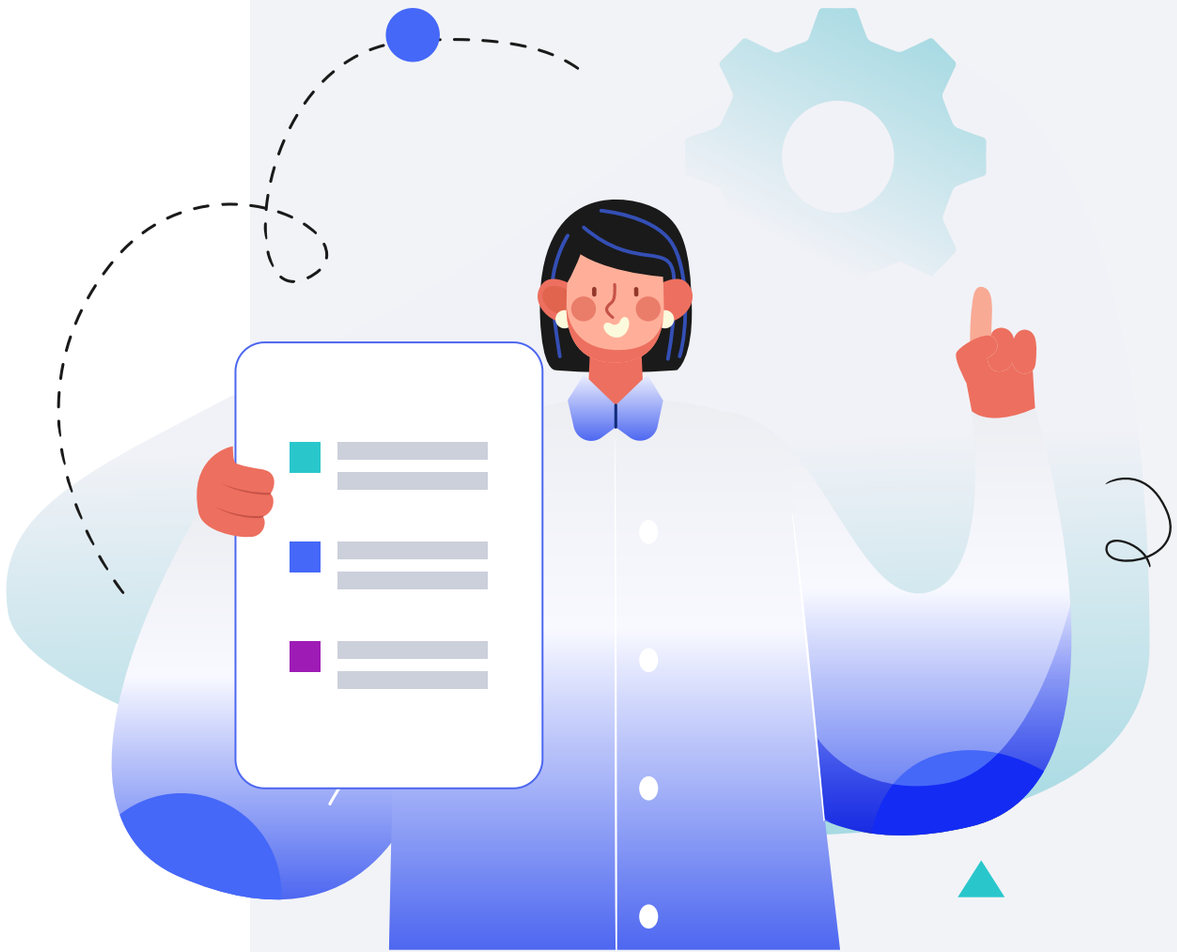
Male

HEIGHT

5ft 9" 175.0cm

WEIGHT

165lb 75.0kg



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.

Introduction

We all love a chocolate treat, whether it's a big slice of chocolate cake or a cup of hot chocolate huddled around the campfire. But what if we told you that a particular cup of cocoa a day might actually save your life?

The love affair between humans and chocolate is steeped in history. Cacao, the bean which is roasted to make cocoa, has been used in traditional medicine across the Americas for more than 5,000 years [R].

Explorers brought cacao to Europe around the 1500s, and we've been discovering the many delicious uses and benefits of this wonder bean ever since [R].

When most people think of eating chocolate, they don't immediately think "*healthy*."

That's because a lot of cocoa products like milk chocolate often contain high amounts of sugar and fat. **But processed correctly, chocolate may actually be a health-boosting superfood, as shown by the Guna**.

The Guna are an indigenous people that live on the San Blas islands of Panama. If you didn't know better, you'd think these islands have magical health-boosting properties.

This is because, compared to the mainland, the residents of these islands have much lower blood pressure regardless of their age. They also have lower rates of type 2 diabetes, heart attacks, stroke, and cancer.

Adding more to the mythical properties of the islands, islanders who move to the mainland are over 8% more likely to have high blood pressure, and this risk increases by 35% after age 60 [R].

But are the San Blas islands really magical? Scientists researching why the Guna are blessed with good heart health think they may have identified the culprit: **a 10 oz. cocoa drink consumed 3 times a day**! They actually consume 10 times more cocoa on these islands than their Panamanian mainland counterparts [R].

But how would cocoa confer these benefits?

Well, the main benefits of cocoa stem from the fact that it contains antioxidants called flavonoids. Flavonoids are potentially great for your heart, as they lower your blood pressure, improve blood flow, and balance your cholesterol [R, R, R, R].

In fact, **eating 30 g of chocolate products 3 times per week may reduce your risk of heart disease by as much as 10%** [R]. That's huge!

Now, is cocoa the only secret of Guna? Probably not. Eating a diet low in fat and having an active lifestyle probably plays an even larger role [R]. But these aren't the only ways to optimize your heart health.

Sadly we can't all move to the tropical San Blas islands for our heart health. But don't worry, because you might already have the secret to the benefits of this tropical paradise hidden within your genetic code!

The people of the San Blas islands have spent thousands of years perfecting their heart health-boosting diet and lifestyle. We don't have time for that. Thanks to science, you can take a shortcut to optimal heart health by revealing the secrets

hidden in your genes.

This report focuses on the genetics of CAD. Read more to find out:

- How your genetics play a role in heart health
- Your genetic risk score based on over 11,000 genetic variants
- Personalized recommendations based on your genetics

Longevity Screener

Longevity Screener analyzes your DNA and biometric data to holistically determine your risk of developing serious medical conditions.

Your lifetime risk is Normal

Your 10-year risk is Normal

Summary or results

Your results are indicating a Normal risk of developing Coronary Artery Disease in your lifetime and within the next decade.

Monitor your risk by regularly checking your related labs and implementing the recommendations provided.

The risk of developing Coronary artery disease can be influenced by non-genetic factors such as High blood pressure, elevated BMI, Type 2 diabetes, Type 1 diabetes.

What to do if you get a High risk

Analyze your labs

Analyze your lab results to establish a baseline and track any changes or improvements in your health markers over time.

Find out your out-of-optimal labs

We will pinpoint any values that fall outside the optimal range, allowing you to focus on what matters most.

Optimize labs

Aim to bring all your lab results to optimal levels through lifestyle changes, treatments, and ongoing monitoring for the best health outcomes.

Disclaimer

The Longevity Screener feature is designed to provide insights based on genetic predispositions and basic health data to help you understand factors that may influence your longevity. This tool is for informational purposes only and does not constitute medical advice, diagnosis, or treatment. Always consult with a qualified healthcare provider before making any decisions related to your health, lifestyle, or medical treatments. The information provided by the Longevity Screener is based on current scientific research and should be used as a supplementary tool in conjunction with professional medical advice.

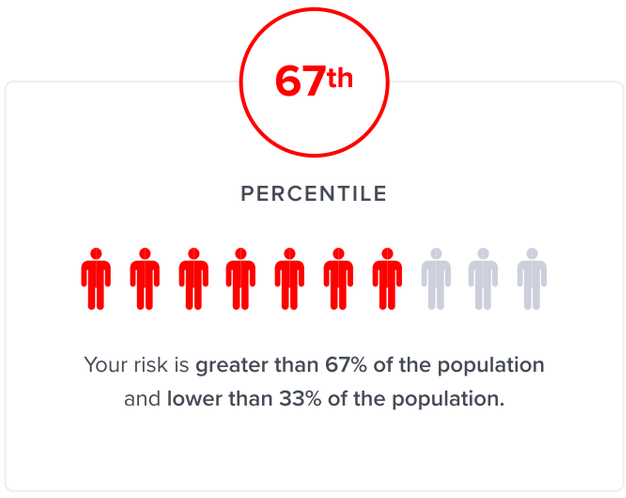
About Coronary Artery Disease

Key Takeaways:

- Over **18 million** people have heart disease in the U.S. A third of deaths from heart disease are preventable.
- Up to **40%** of differences in people's chances of getting coronary artery disease may be due to genetics.
- Other risk factors include excess weight, stress, sedentary lifestyle, smoking, and more.
- If you have a high genetic risk, take action on modifiable risk factors. Even with a low genetic risk, having other risk factors will still make you prone to heart disease.
- Click the **next steps** tab for relevant labs and lifestyle factors.

MORE LIKELY

More likely to have coronary artery disease based on 1,049,366 genetic variants we looked at



Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
NOS3	rs2070744	TC
PEMT	rs12936587	GA
COMT	rs4680	AG
PCSK9	rs11591147	GG
ATG16L1	rs10210302	TT
NKX2-3	rs10883365	GG
FHL3	rs190569784	GG
SERPINA1	rs112635299	GG
ANGPTL4	rs116843064	GG
APOE	rs7412	CC
IRGM	rs1000113	TC
LDLR	rs6511720	GG
IL23R	rs11805303	CT
/	rs72711827	GG
SORT1	rs12740374	GG
PHACTR1	rs9349379	GG
FBXL20	rs72823390	CC
PLPP3	rs17114046	AA
/	rs2457480	AA
ADO	rs10761659	AG

In the US, 1 in 3 deaths from heart disease could be prevented. That's about 92,000 deaths each year. **Imagine if we could save all those lives by striving to prevent heart disease** [R]!

Coronary artery disease is the most common type of heart disease. It affects the coronary arteries -- the large blood vessels that feed the heart. When these vessels become narrowed or blocked, they can't deliver as much oxygen to the heart. Because of this, heart muscle tissue can start to die off [R, R].

If a coronary artery is blocked suddenly, it can cause a heart attack. If the artery narrows slowly over a long period of time, it can cause chest pain and other problems [R].

Many factors can increase your risk of heart disease. These include [R, R]:

- Excess weight
- Unhealthy diet
- Stress

- Lack of exercise
- Smoking
- Air pollution
- Age
- High blood pressure
- High cholesterol
- Diabetes
- Genetics

According to the CDC, **over 18 million adults in the US have coronary artery disease**, and the rates keep increasing. However, death rates have been going down. This is likely due to improved diagnosis and treatment [R, R, R, R]!

Medications that doctors often prescribe for coronary artery disease include [R]:

- Low doses of aspirin, to help prevent blood clots
- Statins, to reduce cholesterol and slow down fat buildup in blood vessels
- Beta-blockers, to lower blood pressure and relax the heart

It's much easier to prevent heart disease than to treat it. To avoid heart disease, experts recommend a "heart-healthy" lifestyle, which includes [R]:

- Not smoking cigarettes
- Eating a healthy diet
- Staying physically fit
- Getting good-quality sleep

Up to 40% of differences in people's chances of getting coronary artery disease may be attributed to genetics. Genes that may contribute to coronary artery disease influence [R]:

- Fat metabolism (*APOE*, *APOB*, *LPL*, *LPA*, *PCSK9*)
- Inflammation (*IL5*, *IL6R*)
- Blood clotting (*SERPINA1*)
- Blood vessel function (*NOS3*, *TGFB1*, *VEGFA*, *ANGPTL4*)

Genetically higher levels of the following markers are causally associated with a higher risk of heart disease [R, R, R, R, R, R, R, R, R, R, R]:

- White blood cells
- Fasting insulin

GENE	SNP	GENOTYPE
MCTP2	rs28607113	TT
PHOSPHO1	rs191896574	TC
FAM177B	rs17465982	AA
NOS3	rs3918226	CT
MRPS6	rs28451064	AG
LPA	rs73596816	AG
PEMT	rs7946	CT
TWIST1	rs2107595	AG
EDNRA	rs17612693	TA
TCF21	rs1966248	AT
DDI1	rs2128739	AC
FGD5	rs148880716	GG
LPA	rs140570886	TT
LPA	rs147555597	GG
PTGER4	rs17234657	TT
LPA	rs55730499	CC
SEH1L	rs2542151	TT
NOD2	rs17221417	CC
BSN	rs9858542	GG
MAP3K4	rs145099029	AA
CDKN2B	rs145542470	GG
NBEAL1	rs72934535	TT
SCAF11	rs1291621	GG
MTRNR2L7	rs4934855	AA
LPL	rs7011846	GG
SOX11	rs79576311	GG
SMIM11A	rs149487184	CC
BMP1	rs73225842	CC
BAG2	rs223290	CC
LRRC25	rs11670056	CC

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

- IGF-1
- ApoB
- Neutrophils
- L-carnitine

In contrast, genetically high total testosterone and EPA may be causally associated with a lower risk of coronary heart disease [R, 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
1	Mediterranean Diet	
2	Choose Healthy Fats	
3	Strength Training	1 hour
4	Sleep for 7+ Hours	
5	Practice Exercise Snacks	1 minutesute
6	Avoid Secondhand Smoke	
7	Walking	30 minutes
8	Avoid Processed High Phosphate Foods	
9	Swimming	30 minutes
10	Stair Climbing	10 minutes
11	Avoid PAHs Exposure	
12	Avoid Vitamin E Supplements	
13	Fermented Dairy	
14	Omega-3 (Fish Oil)	500 mg
15	Eat Fiber-Rich Foods	

1

Mediterranean Diet

IMPACT 5 / 5

EVIDENCE 4 / 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

European experts recommend the Mediterranean diet for heart disease [R].

Following the Mediterranean diet may reduce your chances of getting heart disease by **about 30%** [R, R, R, R, R].

The Mediterranean diet limits foods that can contribute to heart disease. Instead, it promotes the intake of healthy fats and fiber. As a result, this type of diet may **reduce inflammation and protect the heart** [R, R].

PERSONALIZED TO YOUR GENES

In people with your *MTHFR* gene variant, the Mediterranean diet may prevent fat from clogging up blood vessels [R, R].

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
MTHFR	**rs1801133**	AA	

2

Choose Healthy Fats

IMPACT 4 / 5

EVIDENCE 5 / 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

Some experts agree that eating a lot of saturated and trans fats may increase the odds of heart disease. Large amounts of these fats raise “bad” (LDL) cholesterol levels, which can damage your heart [R, R, R, R, R, R].

Although limiting your saturated fat intake may help reduce cholesterol, some research suggests it may not affect your risk of heart disease [R, R, R, R, R].

The effect of saturated fat may depend on what food you’re getting it from. For example, **eating a lot of processed meat may raise the odds of dying from heart disease** [R].

Eating more trans fat is linked to 21-22% higher odds of heart disease. Replacing just 2% of your calories from trans fat with healthy unsaturated fats may lower your odds by **21-24%** [R, R, R].

In line with this, experts recommend limiting processed food, red meat, and dairy. They also recommend eating more healthy unsaturated fats from [R, R, R]:

- Fish
- Nuts
- Seeds

3

Strength Training

IMPACT 4 / 5

EVIDENCE 4 / 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

Experts agree that exercising helps reduce the risk of heart disease [R, R, R].

It likely helps control [R, R, R, R, R, R]:

- Weight
- Blood sugar
- Cholesterol
- Blood pressure
- Inflammation

Strength training may help by improving heart function. Experts recommend practicing it 2 times per week, in addition to cardio [R, R].

In people who already have heart disease, exercise may prevent complications and hospital visits. It may even boost the quality of life [R, R, R, R, R].

Please note: ***If you have heart disease, speak to your doctor before changing your exercise regimen.***

4

Sleep for 7+ Hours

IMPACT 4 / 5

EVIDENCE 4 / 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

Short sleep (less than 6-7 hours/night) and **long sleep (more than 8-9 hours/night)** are both linked to higher odds of heart disease [R, R, R, R].

In fact, your risk of the condition may increase by **7-11% for every hour of sleep you lose.** It may also increase by **5-7% for every hour of excess sleep.** Short sleep duration may also be causally associated with heart disease [R, R, R].

Poor sleep contributes to many risk factors for heart disease, including [R, R, R]:

- High blood pressure
- High blood sugar
- Obesity

Sleep apnea may be associated with heart artery calcification. People with heart disease may be more likely to have sleep disorders, such as obstructive sleep apnea [R, R, R, R].

In line with this, continuous positive airway pressure (CPAP) may lower the risk of heart-related complications [R, R].

If you have an ongoing sleep problem, it's a good idea to discuss it with your doctor. Getting too much sleep or having trouble falling or staying asleep may be a sign of an underlying health issue.

5

Practice Exercise Snacks

IMPACT 4 / 5

EVIDENCE 4 / 5

How to implement

Integrate short bursts of physical activity, each lasting about 1 to 2 minutes, into your daily routine at least two to three times a day. These 'exercise snacks' can include activities like doing a set of stairs, rapid bodyweight exercises, pull-ups, push-ups, sit-ups, or brisk walking.

TYPICAL STARTING DOSE

1 minutesute

Description

Staying physically active is essential for maintaining overall health and well-being. **Exercise snacks** are brief, frequent bursts of physical activity integrated into daily routines, helping combat the health risks associated with prolonged sitting and sedentary behavior, such as obesity and cardiovascular issues. Examples include taking the stairs or doing quick exercises during work breaks.

Staying active can do wonders for your health. It can help you lose weight, improve your heart health, boost your mood, and more [R].

Exercise snacks are short, quick bursts of physical activity performed throughout the day, designed to break up prolonged periods of sitting or inactivity. These brief bouts of exercise can be as short as a few minutes and are incorporated into daily routines to boost overall physical activity levels.

Exercise snacks are crucial for health because they combat the negative effects of sedentary behavior, such as prolonged sitting, which is associated with an increased risk of obesity, cardiovascular diseases, diabetes, and musculoskeletal issues. They help improve blood circulation, regulate blood sugar levels, and enhance mood and cognitive function.

Examples of exercise snacks include taking the stairs instead of the elevator, doing a few minutes of bodyweight exercises (e.g., squats or push-ups) during work breaks, or walking briskly for a few minutes after meals. These short, frequent bursts of activity contribute to a more active lifestyle and can significantly benefit overall health by reducing the risks associated with excessive sitting.

How it helps

Experts agree that staying physically active helps reduce the risk of heart disease [R, R, R].

It likely helps control [R, R, R, R, R, R]:

- Weight
- Blood sugar
- Cholesterol
- Blood pressure
- Inflammation

Guidelines recommend a combination of [R, R, R]:

- **Cardio**: at least 150 min/week of moderate activity or 75 min/week of intense activity
- **Strength training:** 2 times/week

Strength and endurance training may help by improving heart function. Other forms of exercise that tend to help include cycling and tai chi [R, R, R, R].

In people who already have heart disease, exercise may prevent complications and hospital visits. It may even boost the quality of life [R, R, R, R, R].

Please note: ***If you have heart disease, speak to your doctor before changing your exercise regimen.***

6

Avoid Secondhand Smoke

IMPACT 4 / 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

Experts agree that tobacco increases the risk of heart disease [R, R, R, R, R].

This is because nicotine and other harmful substances in tobacco [R, R, R]:

- Damage blood vessels
- Promote blood clots
- Decrease blood flow
- Increase blood pressure

In fact, smoking as little as **1 cigarette per day** may increase the risk of heart disease by about **50%**. Secondhand smoke likely increases the risk by **up to 35%** [R, R, R, R, R, R, R].

Therefore, one of the best things you can do to prevent heart disease is to quit smoking. Once diagnosed with heart disease, quitting smoking may prevent a heart attack and early death [R, R, R, R, R].

Smokeless tobacco and e-cigarettes are likely bad for your heart, too. Smokeless tobacco in particular is linked to higher odds of dying from heart disease, especially in Europeans [R, R].

7

Walking

IMPACT 4 / 5

EVIDENCE 3 / 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

A meta-analysis of 295,177 participants showed that 30 minutes of walking, five days a week, reduces coronary heart disease risk by 19%, irrespective of gender, age, or duration. Nordic walking alongside conventional cardiovascular rehab has positive impacts on coronary artery disease, peripheral artery disease, and post-stroke survivors, although outcomes for heart failure are inconclusive. Another meta-analysis with 459,833 participants found that higher levels of walking were associated with a 31% lower risk of cardiovascular disease and a 32% lower risk of all-cause mortality. Walking pace is a stronger predictor (48%) than walking volume (26%) for risk reduction. Overall, walking contributes to cardiovascular health and may reduce healthcare costs associated with CHD [R, R, R, R, R, R].

8

Avoid Processed High Phosphate Foods

IMPACT 4 / 5

EVIDENCE 3 / 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

A high phosphate intake, especially from inorganic phosphate additives, is associated with a higher risk of bone loss, heart disease, and death from any cause in people with kidney disease [R, R].

In healthy people, a high dietary phosphorus intake (above 1,400 mg/day) is associated with death from any cause [R].

A high phosphate intake may affect heart health by increasing [R]:

- Tissue and blood vessel calcification
- Parathyroid hormone (PTH) production
- FGF-23 production

The inability to afford the desired quality and quantity of food, especially in black people, may increase the risk of high phosphate intake from processed foods [R].

9

Swimming

IMPACT 4 / 5

EVIDENCE 3 / 5

How to implement

Incorporate swimming into your routine for at least 30 minutes, 3 times a week. Choose a pace and stroke that keeps your heart rate elevated yet allows you to breathe comfortably. Continue this practice regularly for long-term health benefits.

TYPICAL STARTING DOSE

30 minutes

Description

Swimming is a whole-body workout that engages various muscle groups, promoting strength and endurance. It helps keep the heart and lungs healthy, improves flexibility, and can even help reduce stress. Regular swimming is a great way to maintain a balanced, fit, and healthy lifestyle.

How it helps

Experts agree that exercising helps reduce the risk of heart disease [R, R, R].

It likely helps control [R, R, R, R, R, R]:

- Weight
- Blood sugar
- Cholesterol
- Blood pressure
- Inflammation

Guidelines recommend a combination of [R, R, R]:

- **Cardio**: at least 150 min/week of moderate activity or 75 min/week of intense activity
- **Strength training:** 2 times/week

Engaging in vigorous exercise, including activities like swimming, is associated with a decreased risk of heart disease and heart attacks [R].

One study suggests that swimming may also help as part of a rehabilitation program for people with chronic heart failure and stable clinical conditions, without increasing their risk of heart-related complications [R].

Please note: *People with heart disease and history of myocardial ischemia due to exercise, which implies reduced blood and oxygen flow to the heart, should discuss the addition of swimming to their regular physical activity with their doctor. Precautions may need to be taken to monitor and manage the risk of myocardial ischemia* [R].

10

Stair Climbing

IMPACT 4 / 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

Experts agree that exercising helps reduce the risk of heart disease [R, R, R].

It likely helps control [R, R, R, R, R, R]:

- Weight
- Blood sugar
- Cholesterol
- Blood pressure
- Inflammation

Guidelines recommend a combination of [R, R, R]:

- **Cardio**: at least 150 min/week of moderate activity or 75 min/week of intense activity
- **Strength training:** 2 times/week

In a 12-week trial comparing traditional and stair climbing-based cardiac rehabilitation in individuals with coronary artery disease, only cardiac apical rotation increased after 4 weeks, suggesting a need for a greater training stimulus for other cardiovascular changes [R].

In people who already have heart disease, exercise may prevent complications and hospital visits. It may even boost the quality of life [R, R, R, R, R].

Please note: ***If you have heart disease, speak to your doctor before changing your exercise regimen.***

11

Avoid PAHs Exposure

IMPACT 4 / 5

EVIDENCE 3 / 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 meta-analysis of 9 studies and 27,280 participants associated urinary PAH metabolites with a 23% higher risk of cardiovascular diseases, but not coronary artery disease [R].

Similarly, 2 systematic reviews (the largest one with 20 studies) concluded that PAHs increase the risk of cardiovascular disease and cardiovascular risk factors such as hypertension and obesity [R, R].

PAHs can increase blood pressure and cause inflammation of the blood vessels, leading to cardiovascular diseases.

PERSONALIZED TO YOUR GENES

Exposure to PAHs may increase the risk of heart disease more in carriers of your *MTHFR* gene variant [R].

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
MTHFR	**rs1801133**	AA	

12

Avoid Vitamin E Supplements

IMPACT 4 / 5

EVIDENCE 3 / 5

How to implement

Do not purchase or consume vitamin E in supplement form. If you are currently taking vitamin E supplements, consider discontinuing their use.

Description

While vitamin E is an essential nutrient found naturally in various foods like nuts and seeds, supplements should possibly be avoided unless recommended by a healthcare professional, as excessive vitamin E intake can lead to potential adverse effects.

How it helps

Higher vitamin E levels may be causally associated with a higher risk of heart disease and heart attacks [R].

The evidence on vitamin E supplementation's effects on heart health is mixed [R, R].

Moreover, research on over 200,000 people found that vitamin E intake above the recommended daily allowance (RDA) of 15 mg/day increased the risk of death by 3%. However, not all studies found this association [R, R].

13

Fermented Dairy

IMPACT 4 / 5

EVIDENCE 1 / 5

How to implement

Incorporate fermented dairy products like yogurt, kefir, or aged cheeses into one or two of your daily meals. For example, you could have yogurt with breakfast and add kefir to your smoothie for an afternoon snack. This practice should be maintained consistently as part of your diet.

Description

Fermented dairy products like yogurt and kefir contain beneficial probiotic bacteria that can support gut health and enhance digestion. They are also excellent sources of calcium and protein.

Food fermentation is a traditional food preservation method. Fermented foods may support gut and skin health [R, R].

Food can be fermented by microbes that are naturally found in the product or by adding microbes (a starter culture) [R].

Fermented dairy products include [R, R, R]:

- Yogurt
- Kefir
- Cheese
- Buttermilk

How it helps

A study of 1,981 men followed up for about 20 years associated the intake of fermented milk (about 10 g/day) with a 37% reduced incidence of heart disease [R].

14

Omega-3 (Fish Oil)

IMPACT 3 / 5

EVIDENCE 4 / 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

Experts recommend increasing your intake of omega-3 from fatty fish to help prevent heart disease [R, R, R].

The following omega-3 sources may protect the heart:

- **At least 1 serving (100-114 g) of fatty fish per week** [R, R, R, R, R]
- **Fish oil supplements (0.5-3 g/day)** [R, R, R, R]

Omega-3s may help by [R]:

- Reducing triglycerides
- Lowering blood pressure
- Preventing blood clots

The FDA has even approved an omega-3-based drug for people at high risk of heart disease [R].

Please note: *Fish oil can interact with blood thinners (like aspirin, Plavix, Coumadin). Consult your doctor before taking fish oil* [R].

15

Eat Fiber-Rich Foods

IMPACT 3 / 5

EVIDENCE 4 / 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

Experts say that fiber can improve risk factors of heart disease. They recommend getting **35-45 g of fiber per day** to support heart health [R, R, R].

Fiber-rich foods that may be especially helpful for this condition include:

- Whole grains [R, R, R, R]
- Fruit [R, R]

The following fiber sources may protect the heart by lowering blood pressure and cholesterol [R, R]:

- Oats
- Psyllium
- Pectin
- Guar gum

PERSONALIZED TO YOUR GENES

People with your *LEP* variant may see a bigger drop in cholesterol from fiber (psyllium) supplementation. High cholesterol is a major risk factor for heart disease [R, R].

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
LEP	**rs7799039**	GG	