

Platelet Aggregation

Biohacker Report

REPORT CATEGORY —



HEART & BLOOD
VESSELS

Sample Client

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Personal information

NAME

Sample Client

SEX AT BIRTH

Male

HEIGHT

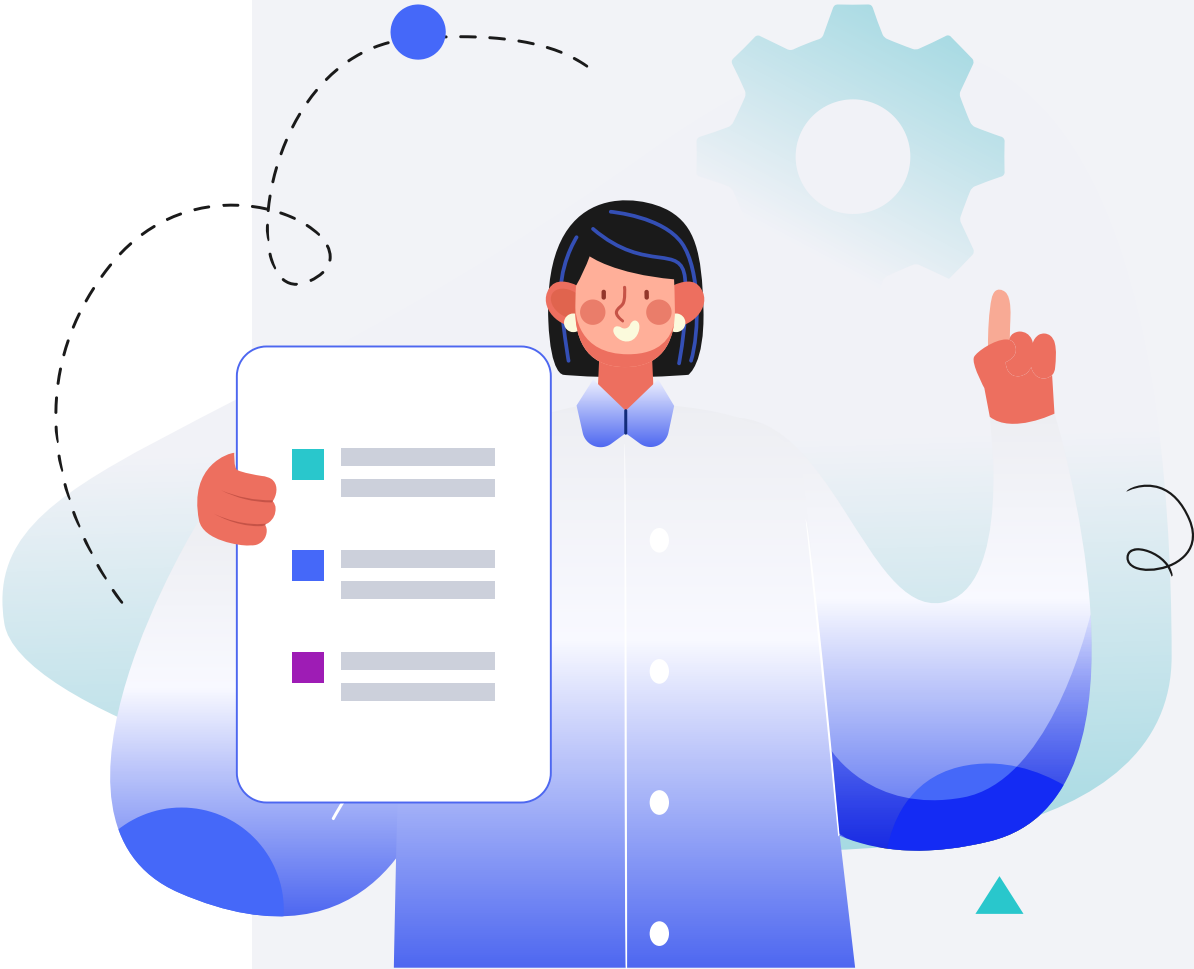
5ft 5" 165cm

WEIGHT

137lb 62kg

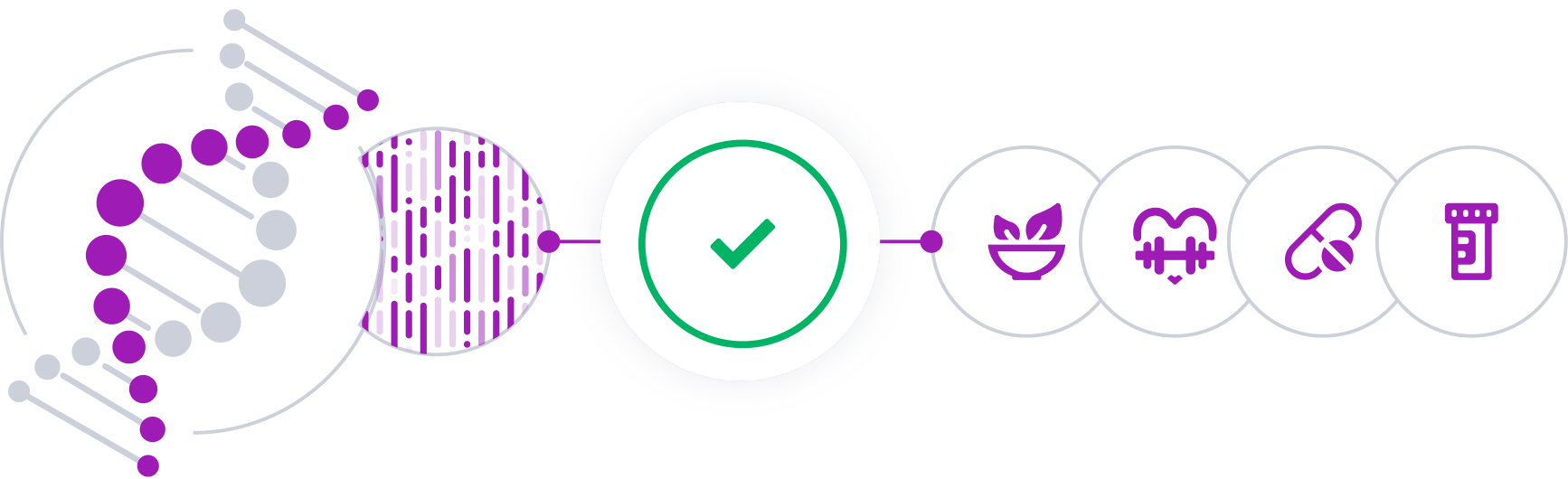
DISCLAIMER

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.

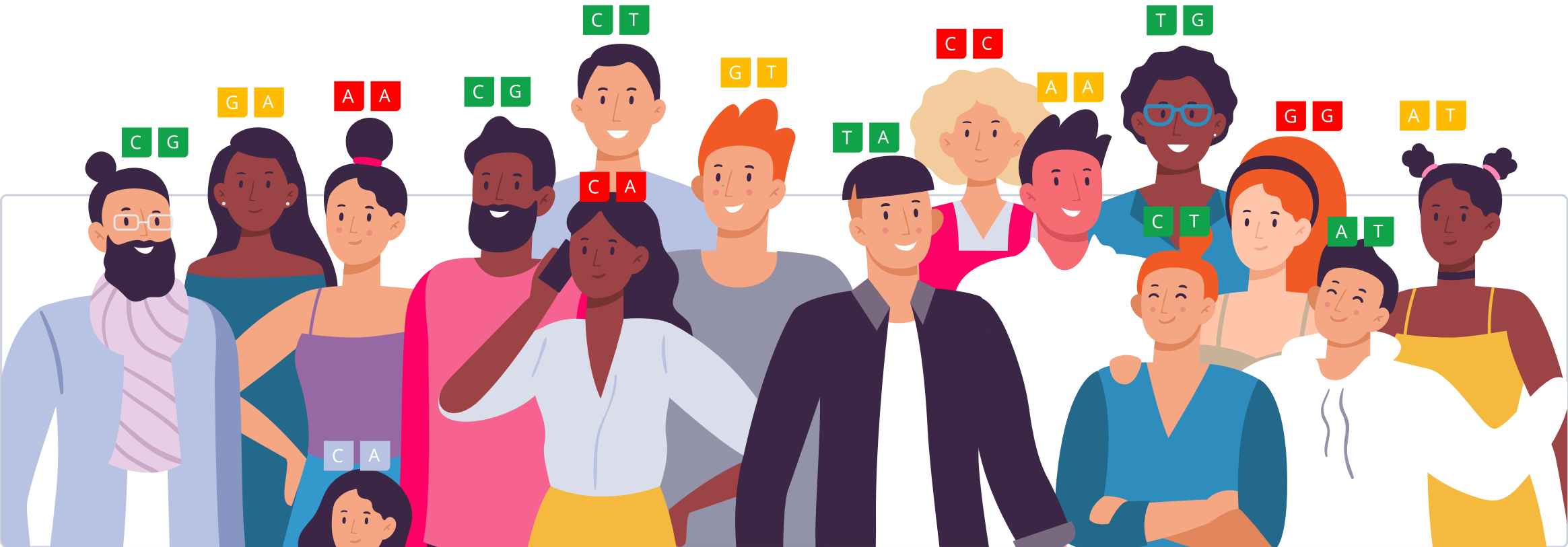


Similarly, our Trait Reports look at how your DNA influences your traits.



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

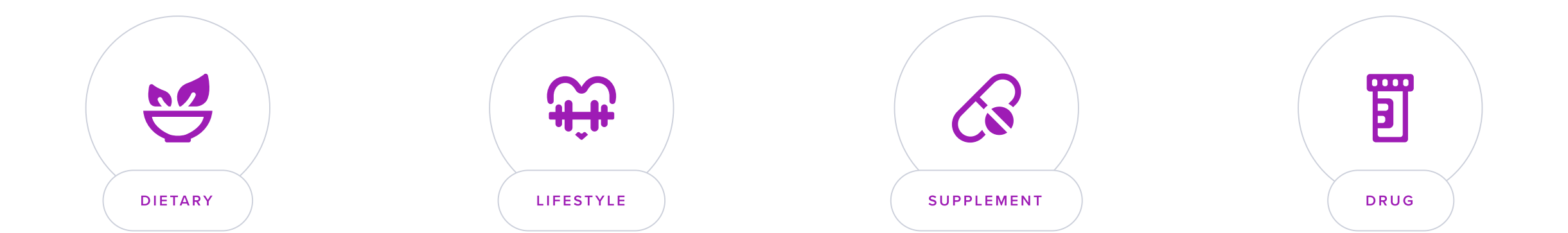
You have 2 risk alleles

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

Platelet aggregation refers to the clumping together of platelets in the blood. This process is vital for wound healing and stopping bleeding, as platelets aggregate to form a plug at the site of an injured blood vessel.

However, excessive or spontaneous platelet aggregation can be harmful and is a key factor in the formation of blood clots, which can lead to conditions like heart attacks, strokes, and deep vein thrombosis.

If there are concerns regarding excessive clotting or bleeding tendencies, it's important to undergo a comprehensive evaluation, which may include platelet function tests. A consultation with a hematologist or relevant healthcare professional can offer specific insights and management strategies based on individual platelet function and aggregation patterns.

Factors Influencing Platelet Aggregation

About 45-60% of the differences in platelet aggregation may be due to genetics [R].

Various gene variants have been linked to differences in platelet function, reactivity, and aggregation propensity. Heritability studies suggest a considerable genetic influence on platelet aggregation and responsiveness to antiplatelet therapies.

Other factors that can affect platelet aggregation include:

- **Medications:** Antiplatelet drugs, like aspirin and clopidogrel, are specifically designed to inhibit platelet aggregation. Conversely, certain medications might enhance platelet activity.
- **Diet:** Foods rich in omega-3 fatty acids, like fish, can reduce platelet aggregation. On the other hand, excessive alcohol or caffeine might increase it.
- **Smoking:** Tobacco smoking can increase platelet aggregation and is a risk factor for cardiovascular diseases.
- **Stress:** Acute or chronic stress can promote platelet aggregation.
- **Medical Conditions:** Diseases like diabetes and conditions associated with inflammation can increase platelet aggregation.
- **Surgery or Trauma:** Any form of vascular injury can stimulate platelet aggregation as a natural response to halt bleeding.
- **Hormonal Changes:** Some studies suggest that hormones, such as those fluctuating during menstrual cycles, can influence platelet function.



Predisposed to higher platelet aggregation based on 16 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
CSMD2	rs115780313	TT
GP6	rs1671152	GT
IRAG1	rs4909945	CT
FGFR1	rs7832232	AA
ADRA2A	rs4545476	TT
IRAG1	rs7940646	CC
ADRA2A	rs869244	GA
REEP3	rs10761779	GA
SHH	rs6943029	GA
HLA-B	rs2263316	GA
DTWD2	rs2914908	CT
PEAR1	rs12566888	GG
REEP3	rs10761731	TT
CCDC71L	rs342293	CC
MICB	rs9267673	CC
TSSK2	rs1052763	CC

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

Your Recommendations

Your recommendations are prioritized according to the likelihood of it having an impact for you based on your genetics, along with the amount of scientific evidence supporting the recommendation.

You’ll likely find common healthy recommendations at the top of the list because they are often the most impactful and most researched.

DOSAGE		DOSAGE			
1	Magnesium Citrate	200 mg	2	Exercise At Least One Hour a Day	1 hour
3	Green Tea	400 mg	4	Dietary Omega-3 Fatty Acids	
5	Garlic				

1



Magnesium Citrate

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 200-400 mg of magnesium citrate daily, preferably in the evening or before bedtime. It can be taken with or without food. If you experience any laxative effect, reduce the dosage. This supplement may be taken continuously, but it's advisable to reassess its necessity with a healthcare provider periodically.

TYPICAL STARTING DOSE

200 mg

Description

Magnesium citrate is a well-absorbed form of magnesium commonly used as a laxative to relieve occasional constipation. It can also contribute to overall magnesium intake and support digestive regularity when used as a dietary supplement.

How it helps

In a non-placebo-controlled trial of 41 healthy volunteers, supplementation with magnesium citrate (295.8 mg/day of elemental magnesium) for 1 month inhibited platelet aggregation as effectively as magnesium oxide monohydrate tablets (520 mg/day of elemental magnesium) [\[R\]](#).

2



Exercise At Least One Hour a Day

IMPACT

0 / 5

EVIDENCE

0 / 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

Consistent daily exercise reduces the likelihood of platelet clumping together. Physical activity decreases levels of clot-promoting factors in your blood, thereby reducing aggregation.

3



Green Tea

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

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

TYPICAL STARTING DOSE

400 mg

Description

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

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

Tea contains antioxidants called **flavonoids**, which may help prevent [\[R, R, R, R\]](#):

- Heart disease
- Cancer
- Diabetes

How it helps

Green tea contains catechins, which are known to reduce platelet aggregation. These compounds work by inhibiting the enzymes that cause platelets to clump together.

4



Dietary Omega-3 Fatty Acids

IMPACT

0 / 5

EVIDENCE

0 / 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

Omega-3 fatty acids, found in foods like fish and flaxseeds, have been shown in several studies to reduce platelet aggregation. They help make the blood less sticky, reducing the risk of clots.

5



Garlic

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate 1-2 cloves of raw garlic into your meals daily. This can be achieved by finely chopping or crushing the garlic and letting it sit for a few minutes before adding it to your dishes to maximize its health benefits.

Description

Garlic is a popular herb known for its potential cardiovascular benefits, including lowering blood pressure and cholesterol levels. It also possesses antimicrobial properties and may support immune function.

[Garlic](#) is a vegetable often used to flavor food. It’s been a part of traditional medicine for thousands of years [\[R\]](#).

Today, people take garlic to help control their blood pressure and cholesterol [\[R\]](#).

How it helps

Garlic has natural antiplatelet properties, which means it can help reduce the stickiness of platelets. This effect helps in preventing the formation of blood clots.

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.

