

Blood Clotting

DNA Health Report

REPORT CATEGORY —



HEART & BLOOD
VESSELS

Sample Client

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DISCLAIMER

This report does not diagnose this or any other health conditions. Please talk to a healthcare professional if this condition runs in your family, you think you might have this condition, or you have any concerns about your results.

Personal information

NAME

Sample Client

SEX AT BIRTH

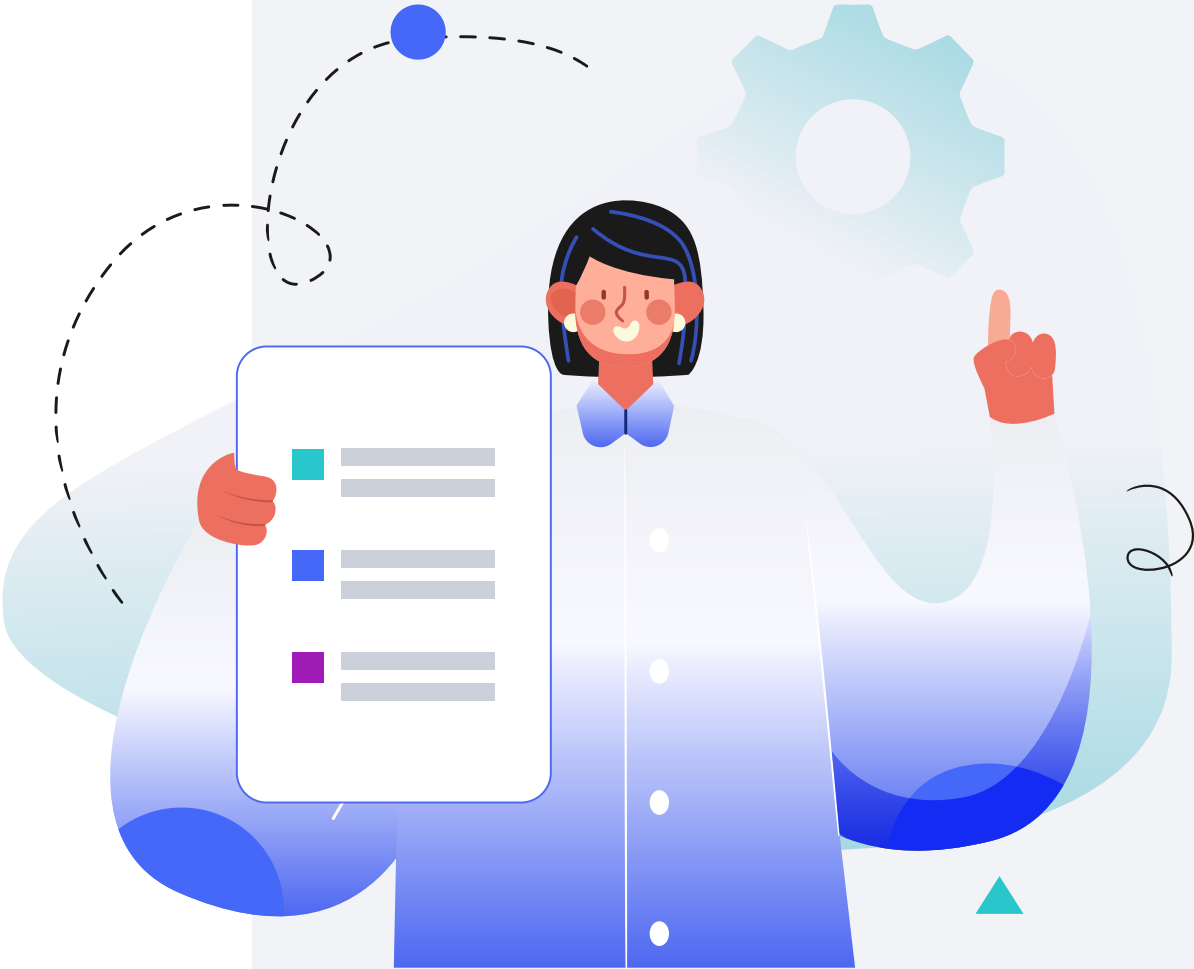
Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg



How this works

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



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



Your DNA is like an instruction manual — it contains a lot of information.
You can think of it as a blueprint for your body.

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



We use artificial intelligence and machine learning to analyze all this information.
We then summarize your results as a risk score or display it on a gauge.

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

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



Genotype color info:

AA

You don't have any risk alleles

AA

You have 1 risk allele

AA

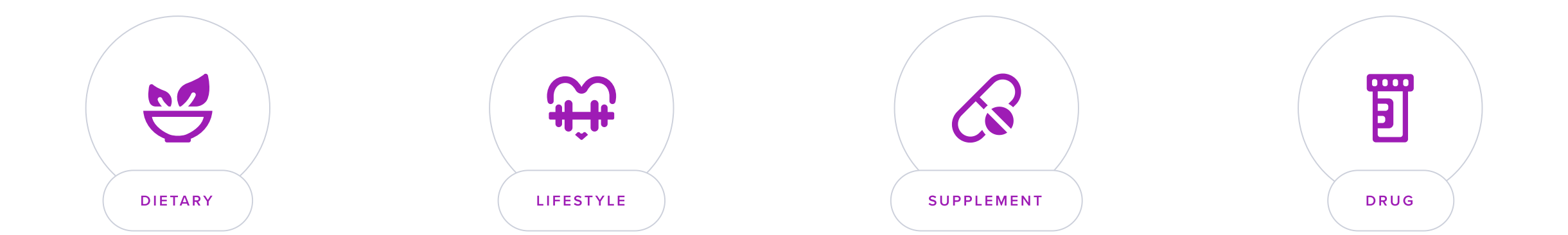
You have 2 risk alleles

Your risk is also displayed as a percentile. This will tell you how your risks compare to our sample population. The lower your percentile number, the lower your risk. The "50th percentile" would be an average risk.

Similarly, the gauge tells you your relative risk score compared to our sample population, or it indicates a specific trait or haplotype you are more likely to have based on your genetic variants.

When applicable, we also list top evidence-based recommendations that may help lower your risk. The focus is on recommendations that may be of benefit to you, based on your genetics.

Our recommendations come in four categories: lifestyle, diet, supplements and drugs.
The following icons tell you which category a recommendation falls into:



Our team of scientists also ranks each recommendation.
We rank based on impact and the strength of evidence in the medical literature.

Impact shows how strongly a recommendation will affect your health in a certain area.
Evidence is how much scientific support there is for the recommendation. Rankings are from 1 to 5 (low to high):



Impact

Impact scores range from 1-5. These scores reflect how much of an effect each recommendation can have. An impact score of 5 predicts the biggest effect.

When a recommendation affects something we can measure, we use those measurements to assign the impact score. For example, a recommendation that decreases cholesterol by 20% will have a higher impact score than one that decreases it by 5%.

Some recommendations affect things that we cannot directly measure, like stress or mood. For these, the impact score is based on how well they work relative to other recommendations and standard treatments. The best ones get the highest scores.

If there is a lot of research that shows a recommendation works especially well for your genotype, the impact score gets increased.

Recommendation Evidence

- 5 / 5
- Recommendations that are considered effective and generally recommended by experts and medical bodies.
-
- 4 / 5
- Recommendations that are considered likely effective and that have multiple independent meta-analyses and a great many studies supporting them.
-
- 3 / 5
- Recommendations that are considered possibly effective and have many studies supporting them
-
- 2 / 5
- Recommendations that have insufficient evidence, with two or several clinical trials supporting them, or many studies but with ambiguous results.
-
- 1 / 5
- Recommendations that have insufficient evidence, with a single clinical trial, or with many studies most of which didn't find support for the recommendation.
-
- 0 / 5
- No evidence in humans.

Genotype-specific Evidence

- High-quality
- Direct evidence that a recommendation helps more in people with your gene variant (many clinical trials, a few large clinical trials, or a meta-analysis).
- Medium-quality
- Direct evidence that a recommendation helps more in people with your gene variant (a few clinical trials or one large clinical trial).
- Low-quality
- Direct evidence that a recommendation helps more in people with your gene variant (a single clinical trial or more trials with inconsistent results).
- Indirect
- A recommendation may help more in people with your gene variant because it targets a specific gene or protein affected by your variant (e.g., MTHFR, dopamine).
- In theory
- A recommendation may help more in people with your gene variant because it targets a specific mechanism affected by your variant (e.g., inflammation, oxidative stress).

Some things to keep in mind:

- Genetics doesn’t play a considerable role in a condition or a trait.
- There is not enough research available to estimate a genetic predisposition.
- There are technical limitations to estimating or presenting a genetic predisposition.
- The topic is sensitive, and a genetic predisposition should only be estimated and presented by a healthcare professional.

Introduction

Thrombosis refers to the formation of a blood clot, known as a thrombus, within a blood vessel. This clot can impede blood flow within the vessel, leading to:

- Reduced oxygen supply
- Tissue damage

Depending on where it occurs, thrombosis can be classified as:

- Venous thrombosis (like deep vein thrombosis)
- Arterial thrombosis (like coronary thrombosis)

Common manifestations and complications of thrombosis include:

- Pain and swelling in the affected limb (common in deep vein thrombosis).
- Red or discolored skin over the affected area
- Warmth over the affected area
- Chest pain or discomfort, such as nausea, sweating, and shortness of breath (common in coronary thrombosis or heart attacks)
- Stroke symptoms, such as sudden numbness or weakness in the face, arm, or leg, especially on one side of the body

Risk Factors and Genetics

About **50%** of the differences in thrombosis may be due to **genetics** [R].

Other factors that might influence the risk of thrombosis include:

- Prolonged immobility (e.g., bed rest, long flights)
- Surgery, especially joint replacement surgery
- Injuries, especially those involving fractures or muscle damage
- Certain medications(e.g., oral contraceptives, hormone replacement therapy, chemotherapy drugs)
- Smoking
- Age, especially being over 60
- Pregnancy

Some health conditions may increase the risk of thrombosis, including:

- Obesity
- Chronic inflammatory diseases (e.g., lupus, inflammatory bowel disease)
- Blood clotting disorders
- Cancer



TYPICAL LIKELIHOOD

Typical likelihood of having thrombosis based on 1,669 genetic variants we looked at



Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
NOS3	rs1799983	TT
ITGB3	rs5918	TC
F5	rs4524	TT
ABO	rs657152	AA
MCMBP	rs12767946	TT
KIF26B	rs1756912	GG
GP6	rs1671152	GT
GP6	rs1613662	AG
HLA-DQA2	rs17202393	GG
NRG3	rs1649936	CC
NCAM2	rs62207434	CC
CSGALNAC T1	rs62496681	CC
/	rs72755680	AA
F5	rs6025	CC
F2	rs1799963	GG
CYP4V2	rs2289252	CC
PROCR	rs867186	AA
ENPP1	rs72983636	AA
RNASEL	rs55897462	TT
TAS2R5	rs145241704	TT
POLE4	rs74965230	TT
FAM174A	rs115887893	CC
PSG8	rs59559305	GG

GENE	SNP	GENOTYPE
NME7	rs16861990	AA
SELL	rs1018827	GG
/	rs687289	AA
PLRG1	rs6825454	TT

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	Clams	2	Horse Chestnut		
3	Red Vine Leaf Extract	360 mg	4	Pneumatic Compression Devices (PCDs)	1 hour
5	Compression Therapy		6	Avoid Iron Supplements (Unless Deficient)	
7	Omega-3 (Fish Oil)	2000 mg	8	Compression Stockings	
9	Walking	30 minutes	10	Aerobic Exercise (Cardio)	1 hour

1



Clams

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate cooked clams into your diet 2-3 times per week, either as part of main dishes, in soups, or salads. Each serving should be about 3-4 ounces (85-113 grams).

Description

Clams are a seafood source rich in essential nutrients like protein, vitamin B12, and minerals. Including clams in your diet can support healthy blood and nerve function, as well as overall nutritional well-being.

Clams provide manganese, vitamin B12, protein, and omega-3’s along with being a good source of riboflavin. A 3-ounce serving provides 0.9 mg of manganese or 39%D.

How it helps

Clams are rich in vitamin B12 and iron, which are crucial for optimizing red blood cell production and maintaining effective oxygen transport in the body. This nutrient profile supports blood health and may help mitigate complications associated with blood clotting disorders.

2



Horse Chestnut

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate horse chestnut supplements into your lifestyle by taking one 300mg capsule of horse chestnut seed extract daily, ideally with meals to improve absorption. This regimen is recommended for managing symptoms of chronic venous insufficiency, such as varicose veins, for a period of up to 12 weeks.

Description

Horse chestnut extract is sometimes used as a natural remedy for improving venous circulation and reducing symptoms of conditions like varicose veins and chronic venous insufficiency. Its active compounds may help strengthen blood vessel walls and reduce swelling.

Horse chestnut extracts are made from the leaves or seeds of the horse chestnut tree (*Aesculus hippocastanum*). This tree is native to parts of southeastern Europe [\[R, R\]](#).

Escin is an anti-inflammatory compound found in horse chestnut extracts. These extracts may help with [\[R, R\]](#):

- Circulation in the legs
- Irritable bowel syndrome (IBS)
- Male infertility

How it helps

Horse chestnut extract enhances venous circulation by strengthening blood vessel walls and reducing inflammation, which may alleviate symptoms associated with chronic venous insufficiency and improve overall blood flow, contributing to better management of blood clotting issues.

3



Red Vine Leaf Extract

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a red vine leaf extract supplement, usually available in capsule or tablet form, at a dose of 360-720 mg daily. This can be divided into two doses taken with meals to improve absorption. Continue this regimen for a period of 3-12 weeks to observe benefits, especially for chronic venous insufficiency symptoms.

TYPICAL STARTING DOSE

360 mg

Description

Red vine (*Vitis vinifera*) leaf extract is derived from the leaves of the red vine. It has been traditionally used in herbal medicine, particularly in Europe, for its potential benefits in improving circulation and reducing symptoms associated with chronic venous insufficiency (CVI), such as leg swelling and pain. Red vine leaf extract is rich in various bioactive compounds, including flavonoids and polyphenols.

Red vine leaf extract is made from the leaves of the red grape vine plant. It has anti-inflammatory and antioxidant properties [\[R\]](#).

People use it to potentially improve circulation and blood vessel health [\[R\]](#).

How it helps

Red vine leaf extract may enhance venous health by promoting blood circulation and reducing inflammation, which can alleviate symptoms of venous insufficiency, such as swelling and pain in affected limbs.

4



Pneumatic Compression Devices (PCDs)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Use the pneumatic compression device on the affected limb(s) for 1-2 hours daily. Simply wrap the sleeve around your limb, secure it, and allow the machine to inflate and deflate the sleeve to improve circulation. Repeat this process daily for at least 3 months to assess effectiveness.

TYPICAL STARTING DOSE

1 hour

Description

Pneumatic compression devices are medical devices that use air pressure to improve blood circulation in the limbs. These devices typically consist of inflatable cuffs that are wrapped around the affected limb and inflate and deflate rhythmically, helping to facilitate the movement of blood and lymphatic fluids, reduce swelling, and enhance overall circulation in the treated area.They are commonly used to alleviate conditions like lymphedema and deep vein thrombosis, promoting better vascular health and reducing the risk of complications.

How it helps

Pneumatic Compression Devices enhance venous return and reduce venous stasis, which is crucial for patients with blood clotting disorders like thrombosis. By promoting blood flow and lymphatic drainage, these devices help decrease the risk of clot formation and related complications.

5



Compression Therapy

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Wear compression stockings or sleeves daily, especially during long periods of standing or sitting. Choose a compression level appropriate for your condition (mild, moderate, or high), as advised by a healthcare professional. Start wearing them in the morning before swelling occurs and keep them on until bedtime.

Description

Compression therapy involves wearing specialized garments that apply pressure to the limbs, promoting better circulation and reducing swelling. It is commonly used to manage conditions like venous disorders and can help alleviate symptoms, improve vascular health, and enhance overall well-being.

In compression therapy, different methods are used to apply pressure to the legs. These methods include [\[R\]](#):

- Bandages
- Wraps
- Compression stockings
- Pneumatic pressure devices

Compression therapy supports blood flow. It may help [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Prevent blood clots and deep vein thrombosis (DVT)
- Reduce some kinds of swelling
- Reduce symptoms of restless legs syndrome

How it helps

Compression therapy enhances venous return by applying consistent pressure to the limbs, which reduces swelling and improves blood flow. This mechanism helps prevent further clot formation and alleviates symptoms associated with blood clotting disorders.

6



Avoid Iron Supplements (Unless Deficient)

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Only take iron supplements if a blood test shows you are iron deficient. If not deficient, do not use iron supplements. For those diagnosed with iron deficiency, follow your healthcare provider's instructions on the type and dosage of iron supplement to take.

Description

[Iron](#) (Fe) is an essential mineral. It helps make [hemoglobin](#), a protein that carries oxygen to cells. In this way, iron **increases energy** and supports **brain and immune system function** [\[R\]](#), [\[R\]](#), [\[R\]](#).

Avoiding unnecessary iron supplements, particularly without a confirmed deficiency, can prevent the risk of iron overload, which can lead to health issues like hemochromatosis and oxidative stress.

However, too much iron can be bad for the body. It can deposit into organs, such as the liver, heart and the pancreas. This can cause issues such as liver disease, heart problems and diabetes [\[R\]](#), [\[R\]](#).

How it helps

Genetically higher levels of iron may be associated with a 37% increased risk of deep vein thrombosis [\[R\]](#).

Please note: *Some people deficient in iron may need to take iron supplements. Your doctor should help you make that decision based on your actual iron levels.*

7



Omega-3 (Fish Oil)

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

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

TYPICAL STARTING DOSE

2000 mg

Description

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

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

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

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

- Salmon
- Tuna
- Herring
- Sardines

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

How it helps

Omega-3 fatty acids, found in fish oil, have antithrombotic properties that can reduce blood clot formation by decreasing platelet aggregation and promoting the production of anti-inflammatory compounds.

8



Compression Stockings

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Wear compression stockings during the day, especially when you expect to be sitting or standing for long periods. They should be put on before getting out of bed in the morning and removed before going to bed at night. Ensure they are the correct size and compression level as advised by a healthcare professional.

Description

Compression stockings are often worn to improve blood circulation in the legs and reduce the risk of conditions like varicose veins and deep vein thrombosis. They can be beneficial for individuals who spend long periods sitting or standing and those with certain medical conditions that affect blood flow.

How it helps

Compression stockings help improve blood flow in the legs, reduce swelling, and lower the risk of blood clots forming in the veins.

9



Walking

IMPACT

0 / 5

EVIDENCE

0 / 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

Walking encourages blood flow in the legs, which can help prevent blood from pooling and forming clots. It is a simple and effective way to keep the circulatory system active and healthy.

10



Aerobic Exercise (Cardio)

IMPACT

0 / 5

EVIDENCE

0 / 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

Aerobic exercise enhances blood circulation and can help prevent the formation of blood clots by keeping the veins in the legs active and reducing blood stasis.

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.

