Vitamin D

Trait

CATEGORIES

INCREASED NEED

Likely increased need for vitamin D

Client

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Vitamin D

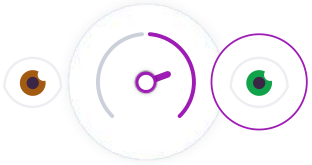
TRAIT

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.

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

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



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

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

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

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

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

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.

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

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.

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):

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

Impact

An impact score can range from 1-5. It can be assigned to a recommendation that helps with a measurable trait, such as cholesterol levels or blood pressure. In this case, the impact score will reflect how much the trait can change in a person who follows the recommendation. An impact score of 1 reflects the smallest change, while 5 reflects the largest.

An impact score can also be assigned to a recommendation that helps with stress levels, mood, or other traits that can't be measured directly. In this case, the recommendation is compared to other recommendations and standard treatments (if they exist). An impact score is assigned based on these relative comparisons.

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.

0 / 5

No evidence in humans.

Some things to keep in mind:

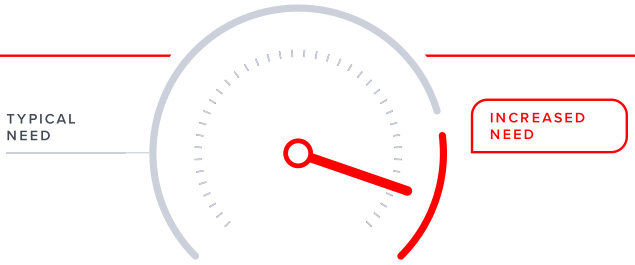
- The scores/gauges use the latest scientific studies. But they are not perfect and will change as the models improve.
- Results might be more accurate for some ethnic groups than others. This depends on the studies used in each report.
- Not everyone with risk variants will develop a health condition.
- People without risk variants can also develop health conditions.
- Genetics is not the whole story. Your health is most often a combination of genetics, lifestyle, and environmental factors.
- Great news, as this means that you can often change your lifestyle to lower your risk.
- It’s important to work with your doctor to better understand your risks. Our reports do not diagnose or treat any health condition. They are not a substitute for medical advice. If you're diagnosed with a certain health condition, follow your doctor's advice.

Summary

Your quick takeaway

GENETICS

Likely increased need for vitamin D based on 1,802 genetic variants we looked at



About Vitamin D

Vitamin D is an essential nutrient, which means your body can't produce enough on its own. **Your body needs vitamin D for strong bones**. It also plays a role in [R]:

- Mood
- Immunity
- Heart health
- Blood sugar control

There are two main forms of vitamin D [R]:

- **Vitamin D2 (ergocalciferol)** is made by plants, fungi, and yeasts
- **Vitamin D3 (cholecalciferol)** is made in the skin and found in animal products

Our skin naturally makes vitamin D when exposed to sunlight. Getting regular, moderate sun exposure is a safe way to maintain healthy vitamin D levels [R].

Many factors can impact the amount of vitamin D your skin makes. These include [R, R]:

- The time of day
- Season
- Sunscreen use
- Latitude
- Your skin pigmentation
- Your age

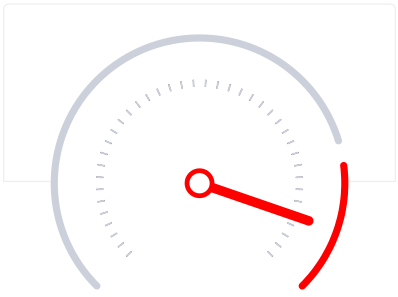
Experts recommend getting **at least 5-15 minutes of midday sun, 2-3 times per week.** People with darker skin and those living at high latitudes may need longer periods of sun exposure [R, R].

We also get small amounts of vitamin D from foods such as [R]:

- Fatty fish (salmon, tuna, mackerel, sardines)
- Cod liver oil
- Fortified foods (soy milk, dairy, orange juice, cereals)
- Beef liver
- Egg yolks
- Cheese
- Mushrooms (shiitake, portobello)

Most adults should get 800 IU of vitamin D per day. Different vitamin D supplements are available for those who can't maintain healthy levels through sun exposure and a balanced diet [R, R].

Vitamin D is fat-soluble. For this reason, it's better absorbed when consumed with food containing fat [R].



Likely increased need for vitamin D

Factors Influencing Vitamin D Levels

Around **20-40%** of differences in people's vitamin D levels may be due to genetics [R].

Genes that influence vitamin D levels may play a role in its [R]:

- Production
- Activation
- Transport
- Breakdown

Besides genetics, the following factors also influence vitamin D levels [R]:

- Sun exposure
- Skin color

- Age

PERSONALIZED TO YOUR GENES

Based on the genetic variants we looked at, you likely have an increased need for vitamin D.

However, keep in mind that genetics is just one of many factors influencing vitamin D levels.

A blood test is the only reliable way to determine vitamin D status [R].