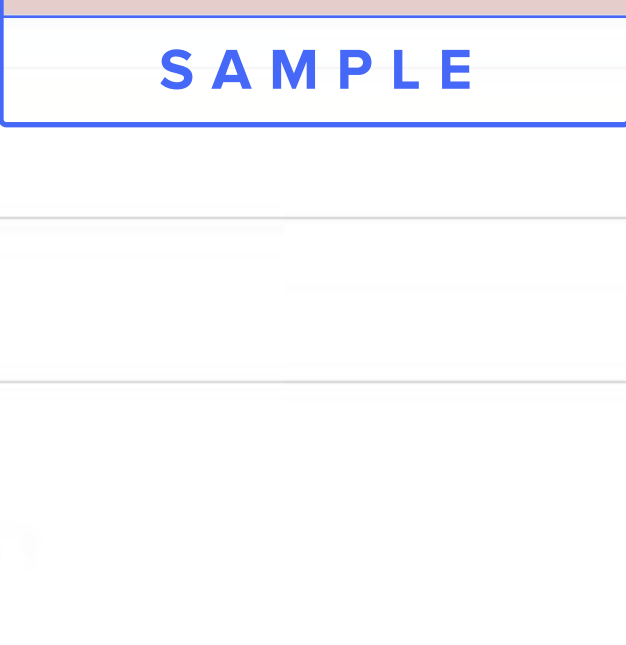


Blood Pressure

DNA Wellness Report



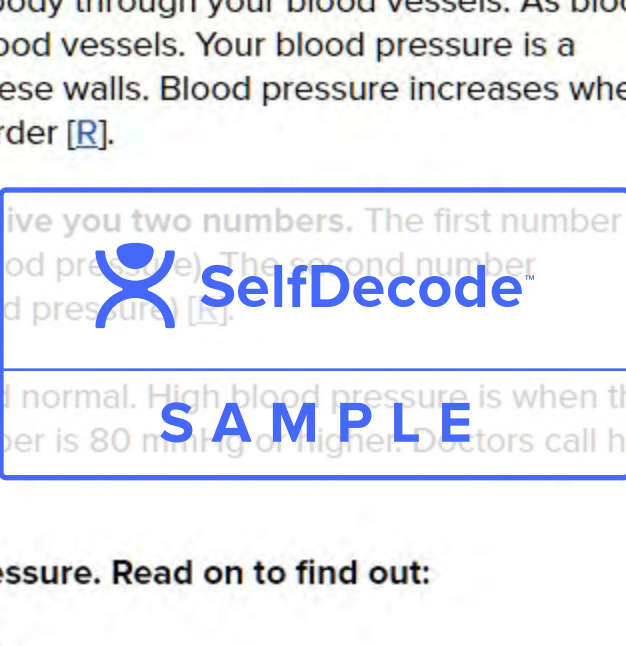
How this works

Your genetic risk summary

Blood Pressure
Slightly increased risk of high blood pressure

Your recommendations summary

- Exercise**
Get plenty of exercise.
- Avoid Cigarette Smoke**
Avoid cigarette smoke.
- DASH Diet**
Try the DASH diet.
- Maintain a Healthy Weight**
Maintain a healthy weight.
- Vitamin B2**
Consider supplementing with vitamin B2.
- Reduce Salt Intake**
Eat less salt.
- Reduce Stress**
Reduce your stress.



Welcome Jane Doe

Your Blood Pressure DNA Wellness Report

Introduction

Did you know that about 9 out of 10 Americans will develop high blood pressure at some point in their lives [R]? But what exactly is high blood pressure? And is there anything you can do about it?

When your heart beats, it pumps blood to your entire body through your blood vessels. As blood circulates, it pushes against the inner walls of these blood vessels. Your blood pressure is a measurement of how hard your blood is pushing on these walls. Blood pressure increases when the blood vessels narrow or when the heart pumps harder [R].

When a doctor measures your blood pressure, they describe the force when your heart beats (systolic blood pressure) and the force between heartbeats (diastolic blood pressure). Normal blood pressure is when the top number is 120/80 mmHg or lower and the bottom number is 130 mmHg or higher or the bottom number is 80 mmHg or lower. High blood pressure is when the top number is 130 mmHg or higher or the bottom number is 80 mmHg or lower. High blood pressure is called *hypertension*.

This report focuses on the genetics of high blood pressure. Read on to find out:

- How your genetics play a role in blood pressure
- Your genetic risk score based on around 1.2 million genetic variants
- Personalized recommendations based on your unique genetic data

Topics Covered

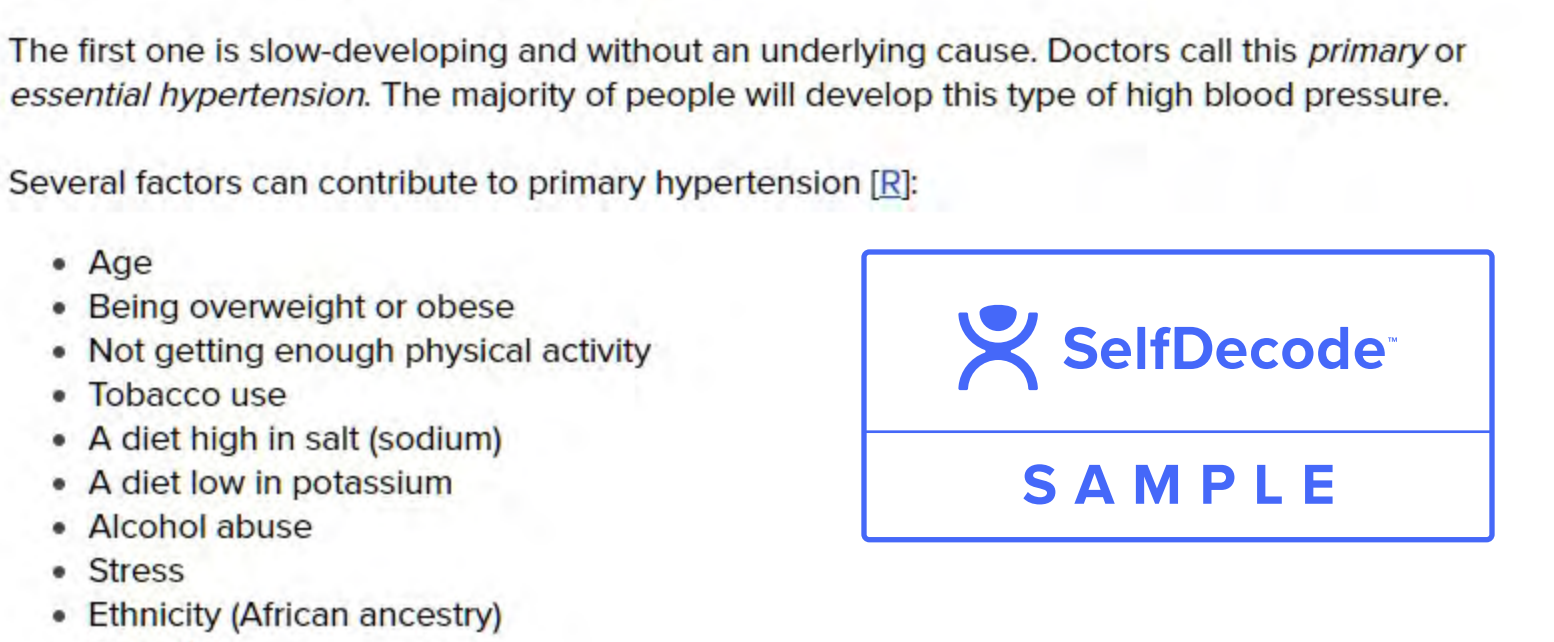
Blood Pressure

Genetics Overview

Your Blood Pressure DNA Wellness Report

Blood Pressure

Your Genetics Overview



There are two major types of high blood pressure. The first one is slow-developing and without an underlying cause. Doctors call this *primary* or *essential hypertension*. The majority of people will develop this type of high blood pressure. Several factors can contribute to primary hypertension [R]:

- Age
- Being overweight or obese
- Not getting enough physical activity
- Tobacco use
- A diet high in salt (sodium)
- A diet low in potassium
- Alcohol abuse
- Stress
- Ethnicity (African ancestry)
- **Genetics**

Sometimes, high blood pressure is the result of a known underlying cause. Doctors call this *secondary hypertension*. Some examples of things that can cause secondary hypertension include [R]:

- Abuse of recreational drugs, such as cocaine and amphetamines
- Some medications, such as birth control pills and painkillers
- Conditions such as obstructive sleep apnea, kidney disease, and blood vessel defects

High blood pressure usually doesn't produce any symptoms. Most people don't realize they have it until they visit their doctor for a routine checkup [R].

The danger is that high blood pressure increases your chances of heart attack and stroke. In 2018, high blood pressure contributed to the death of almost 500,000 Americans [R, R].

The good news is that high blood pressure is easy to detect and treat. Your doctor will work with you to reduce your blood pressure. They may recommend medication, a low-sodium diet, exercise, and other lifestyle changes [R].

Some strategies and recommendations may work better for you than others. This is partly due to genetics, which may account for up to 50% of your blood pressure differences [R].

Genes that influence blood pressure can affect:

- Blood volume (*SCN11A*, *NPR3*, *CSK*, *AGT*, and *ACE2*) [R, R, R, R]
- Blood vessel width (*AGT*, *ACE2*, and *MOS3*) [R, R, R]
- Stress response (*ADRB1* and *ADRB2*) [R, R]
- Breakdown of blood pressure-raising compounds, such as caffeine (*CYP1A2*) [R, R]

AGT and *ACE2* genes raise your blood pressure. They do this by increasing the amount of blood and making your blood vessels smaller. *ACE* inhibitors are blood pressure-lowering drugs that can counteract this [R, R, R].

It's important to remember that genetics isn't everything. Your lifestyle and environment account for about 50% of blood pressure differences [R].

Slightly increased risk of high blood pressure
Based on your genetics

We analyzed 973,816 genetic variants.

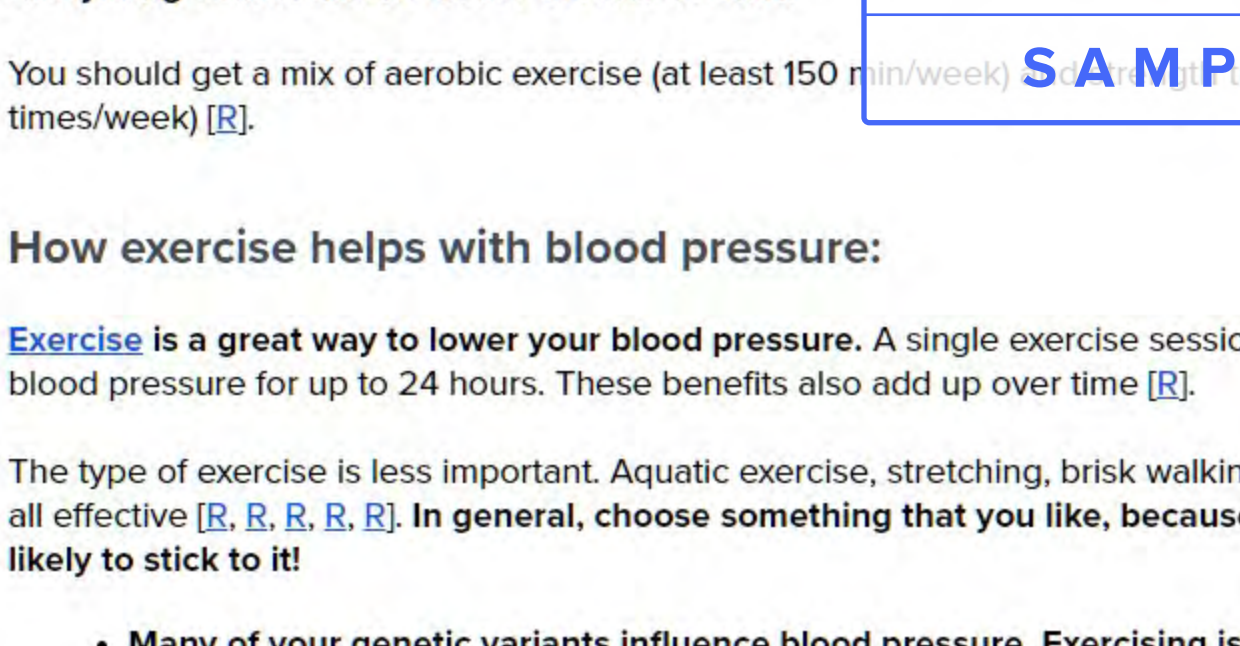
Have you ever been officially diagnosed with high blood pressure?
 YES NO

Prioritized Recommendations

Your Blood Pressure DNA Wellness Report

1 Exercise

Your Recommendation



Description

Exercise can do wonders for your health. It benefits your body and your brain. It can help you lose weight, improve your heart health, and boost your mood and self-esteem.

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

You should get a mix of aerobic exercise (at least 150 minutes/week).

How exercise helps with blood pressure:

Exercise is a great way to lower your blood pressure. A single exercise session can lower your blood pressure for up to 24 hours. These benefits also add up over time [R].

The type of exercise is less important. Aquatic exercise, stretching, brisk walking, tai chi, etc. are all effective [R, R, R, R]. In general, choose something that you like, because you'll be more likely to stick to it!

- Many of your genetic variants influence blood pressure. Exercising is a great way for you to target many of them at the same time [R].
- People with your *MOS3* gene variant may get bigger benefits from aerobic exercise [R].
- People with your *SCAP* gene variant who don't exercise have higher blood pressure. Exercise to reduce your risk [R].

Get plenty of exercise.

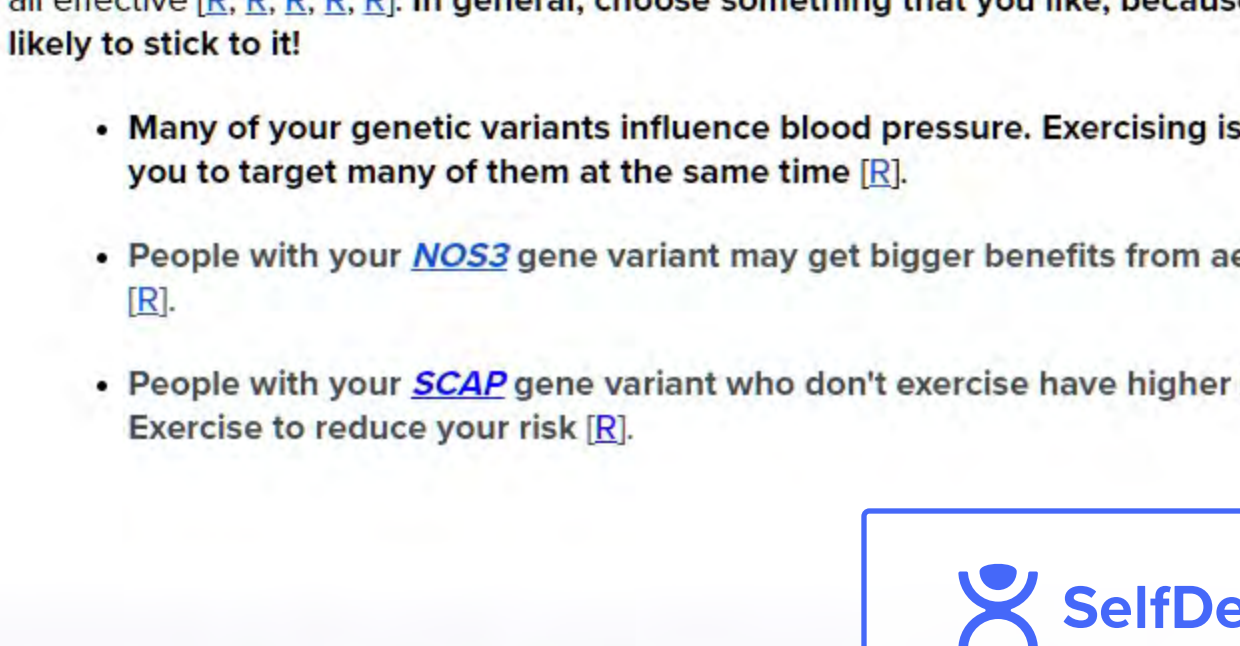
+ ADD TO MY REGIMEN

Helps with these: Blood Pressure

Was this recommendation helpful for you?

2 Avoid Cigarette Smoke

Your Recommendation



Description

If you're a smoker, you already know that tobacco is not great for your health. Smoking affects not only your lungs but your entire body. It can increase your risk of developing heart and lung disease.

And if you're not a smoker, it's important to know that secondhand smoke can cause many of the same health issues.

Yet there is good news. Quitting smoking can reverse many of the health issues it causes. It is a great way to dramatically improve your health.

How avoiding cigarette smoke helps with blood pressure:

Smoking narrows your blood vessels and increases your blood pressure [R, R, R].

Electronic cigarettes with nicotine may also raise blood pressure, but to a lesser extent [R, R].

Even passive smoke exposure may increase blood pressure in children and adolescents [R].

- Cigarette smoke may have a stronger effect on blood pressure in people with your *MNT* variant [R]. Take special care to avoid cigarette smoke.

Avoid cigarette smoke.

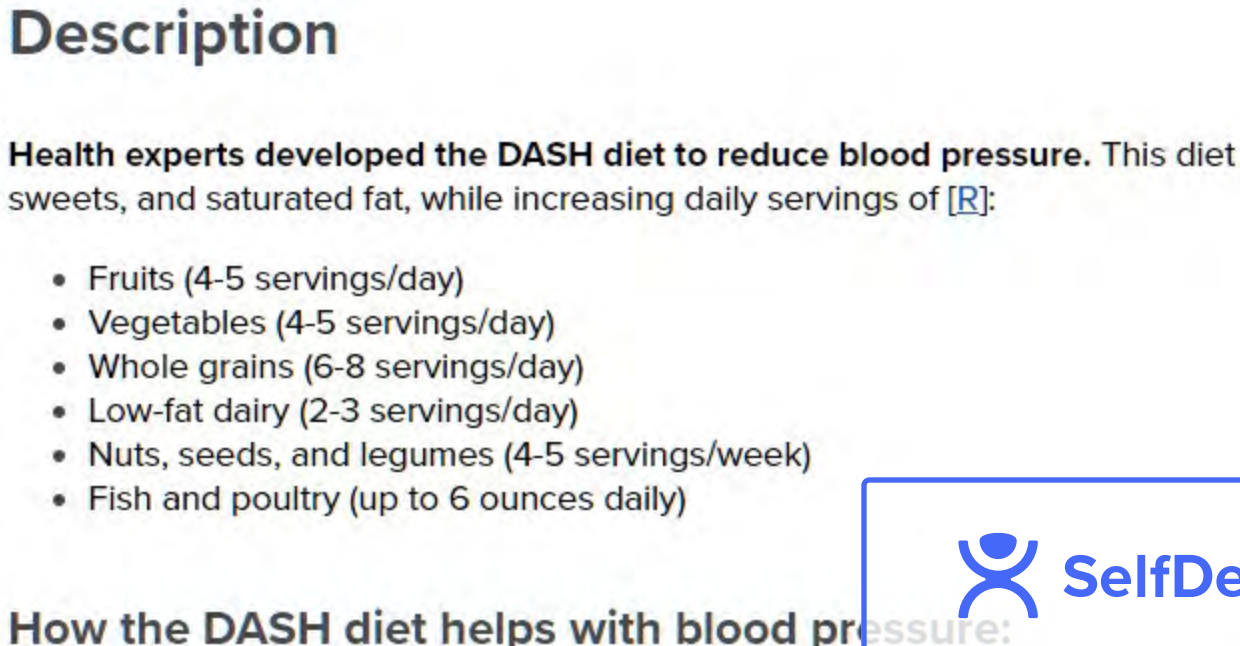
+ ADD TO MY REGIMEN

Helps with these: Blood Pressure

Was this recommendation helpful for you?

3 DASH Diet

Your Recommendation



Description

Health experts developed the DASH diet to reduce blood pressure. This diet limits salt, sweets, and saturated fat, while increasing daily servings 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 daily)

How the DASH diet helps with blood pressure:

The DASH diet is among the most effective diets for reducing blood pressure [R].

- The DASH diet is very good for people with higher genetic risk levels like you. This diet helps by targeting many different genes at the same time [R].
- The DASH diet may be more effective at lowering blood pressure in people with your *ADRB2* gene variant [R].
- People with your *AGT* gene variant do better on the DASH diet. This diet tends to lower blood pressure more when this variant is present [R].

Try the DASH diet.

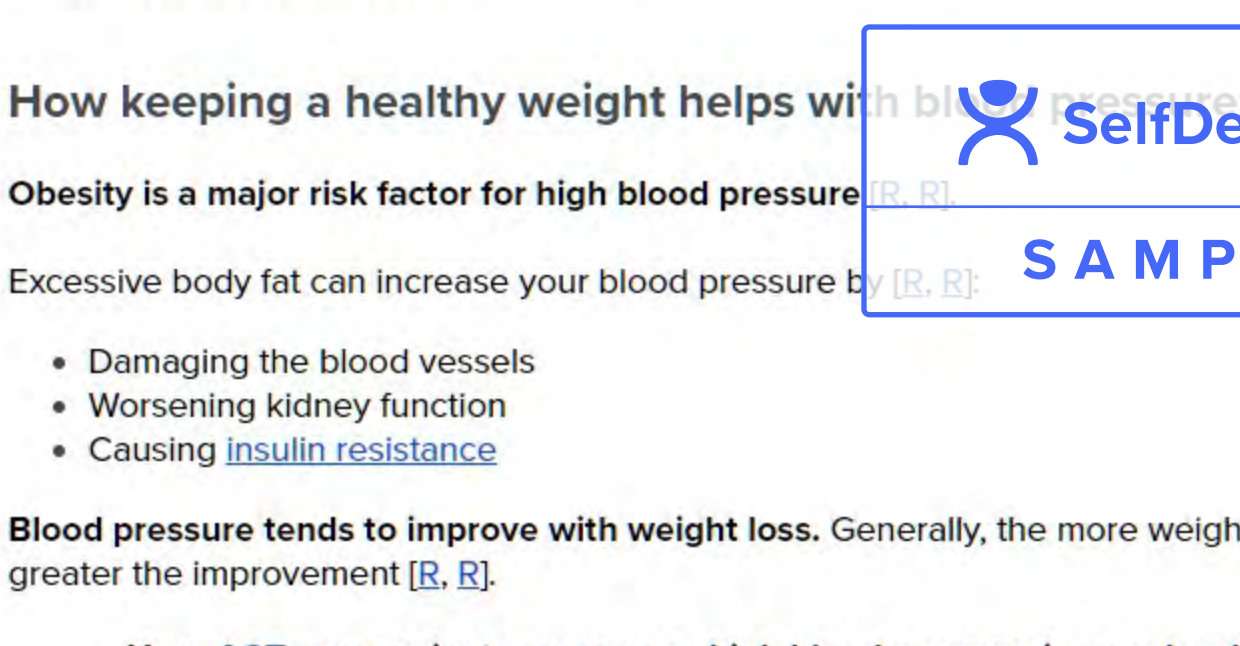
+ ADD TO MY REGIMEN

Helps with these: Blood Pressure

Was this recommendation helpful for you?

4 Maintain a Healthy Weight

Your Recommendation



Description

A healthy weight is important for your short- and long-term health. But what weight is healthy?

A healthy weight is when you don't have too much body fat. Doctors use BMI (body mass index) as a rough guide to figure this out. Your BMI (kg/m²) is your mass (in kg) divided by the square of your height (in meters). There are a lot of free online calculators that can do the math for you.

- In general, experts say that:
 - a BMI between 18.5 and 25 is healthy
 - a BMI over 25 is overweight
 - a BMI over 30 is obese

How keeping a healthy weight helps with blood pressure:

Obesity is a major risk factor for high blood pressure [R].

Excessive body fat can increase your blood pressure [R].

- Damaging the blood vessels
- Worsening kidney function
- Causing insulin resistance

Blood pressure tends to improve with weight loss. Generally, the more weight you lose, the greater the improvement [R, R].

- Your *AGT* gene variant may worsen high blood pressure in people who are obese. Maintain a healthy weight to reduce your risk [R].

Maintain a healthy weight.

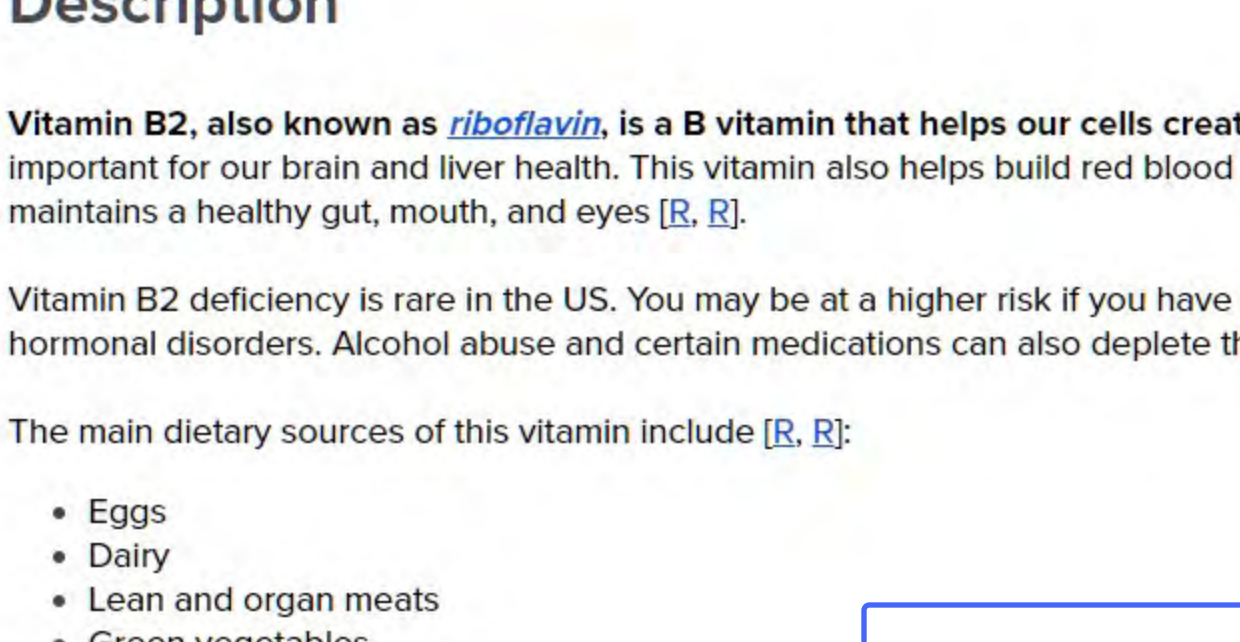
+ ADD TO MY REGIMEN

Helps with these: Blood Pressure

Was this recommendation helpful for you?

5 Vitamin B2

Your Recommendation



Description

Vitamin B2, also known as *riboflavin*, is a B vitamin that helps our cells create energy. It is important for our brain and liver health. This vitamin also helps build red blood cells and maintains a healthy gut, mouth, and eyes [R, R].

Vitamin B2 deficiency is rare in the US. You may be at a higher risk if you have gut, eating, or hormonal disorders. Alcohol abuse and certain medications can also deplete this vitamin [R, R].

The main dietary sources of this vitamin include [R, R]:

- Eggs
- Dairy
- Lean and organ meats
- Green vegetables
- Fortified cereals

How vitamin B2 helps with blood pressure:

Several studies found a link between low vitamin B2 intake and high blood pressure. Are you obese or taking blood pressure medication? Vitamin B2 may be especially beneficial in these conditions [R, R].

- Supplementing with vitamin B2 (1.6 mg/day) may help decrease blood pressure in people with your *MTHFR* variant [R, R, R, R].

Consider supplementing with vitamin B2.

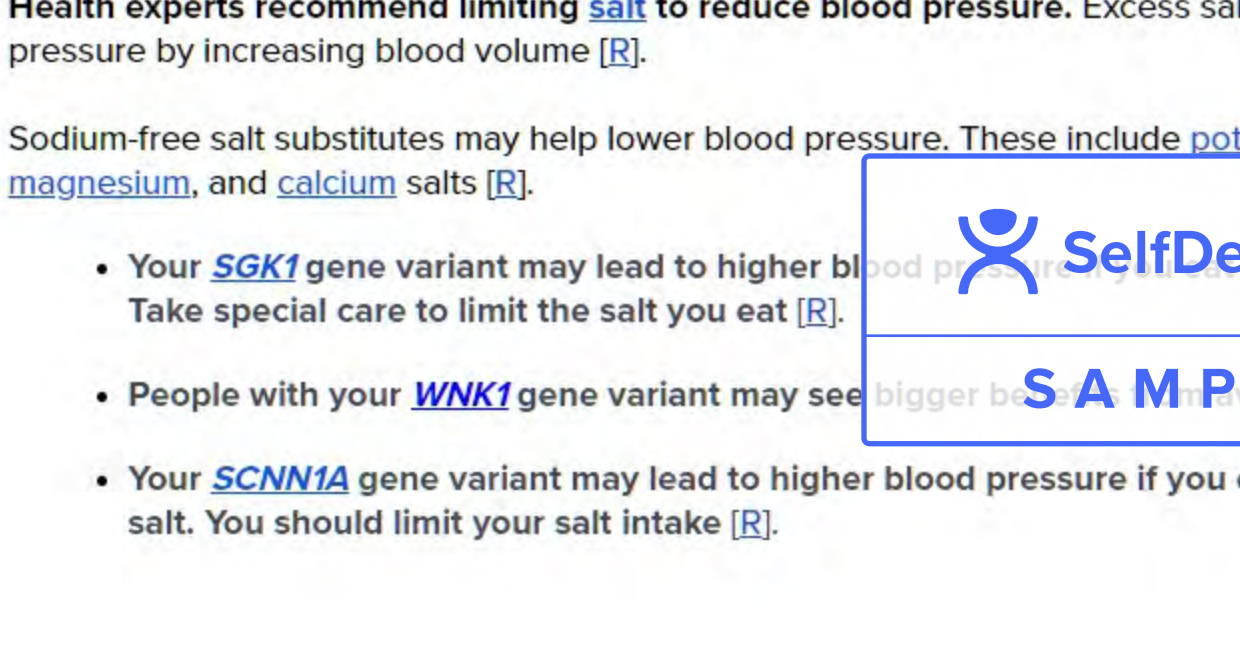
+ ADD TO MY REGIMEN

Helps with these: Blood Pressure

Was this recommendation helpful for you?

6 Reduce Salt Intake

Your Recommendation



Description

Your body needs a certain amount of sodium to function, which usually comes from salt. But Americans are getting more salt than they need! Too much salt leads to higher blood pressure and an increased risk of stroke and heart disease.

Most of this extra salt comes from packaged and prepared foods.

Try to limit your daily salt intake to 1 teaspoon (6 g) of salt [R].

How cutting back on salt helps with blood pressure:

Health experts recommend limiting salt to reduce blood pressure. Excess salt can raise blood pressure by increasing blood volume [R].

Sodium-free salt substitutes may help lower blood pressure. These include potassium, magnesium, and calcium salts [R].

- Your *SGKT* gene variant may lead to higher blood pressure. Take special care to limit the salt you eat [R].
- People with your *HNK1* gene variant may see bigger blood pressure increases from salt [R].
- Your *SCN11A* gene variant may lead to higher blood pressure if you eat too much salt. You should limit your salt intake [R].

Eat less salt.

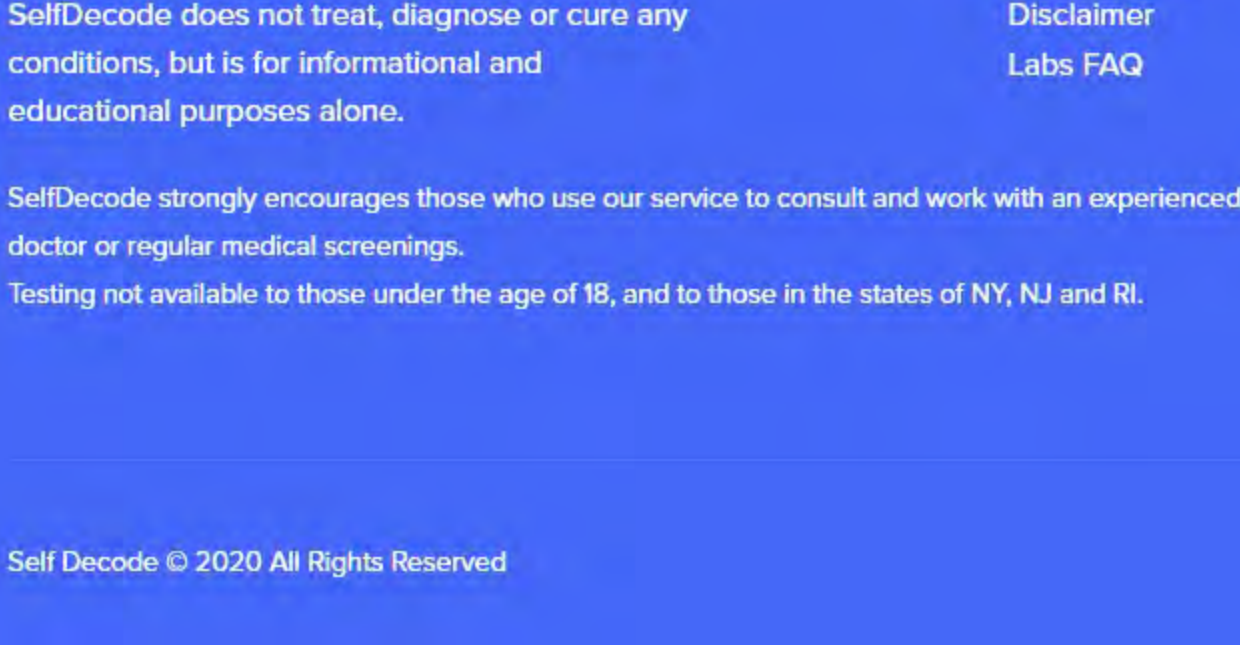
+ ADD TO MY REGIMEN

Helps with these: Blood Pressure

Was this recommendation helpful for you?

7 Reduce Stress

Your Recommendation



Description

Everyone gets stressed from time to time. Stress is a normal part of life — it can help us deal with a challenge or avoid danger.

But prolonged stress can take a serious toll on both mental and physical health [R, R].

How reducing stress helps with blood pressure:

Did you know that mental stress may more than double your risk of developing high blood pressure [R, R]?

For example, job strain increases blood pressure, especially in men [R, R].

Relaxation techniques help decrease stress and may help lower your blood pressure [R, R, R].

- Your *AGT* gene variant corresponds with higher blood pressure due to mental stress [R].

Reduce your stress.

+ ADD TO MY REGIMEN

Helps with these: Blood Pressure

Was this recommendation helpful for you?