SelfDecode™

High Blood Pressure

Disease Report

REPORT CATEGORIES

HEART & BLOOD VESSELS

LONGEVITY

Sample Client

Report date: 29 July 2025

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Table of Contents

Personal information

NAME

Sample Client

SEX AT BIRTH

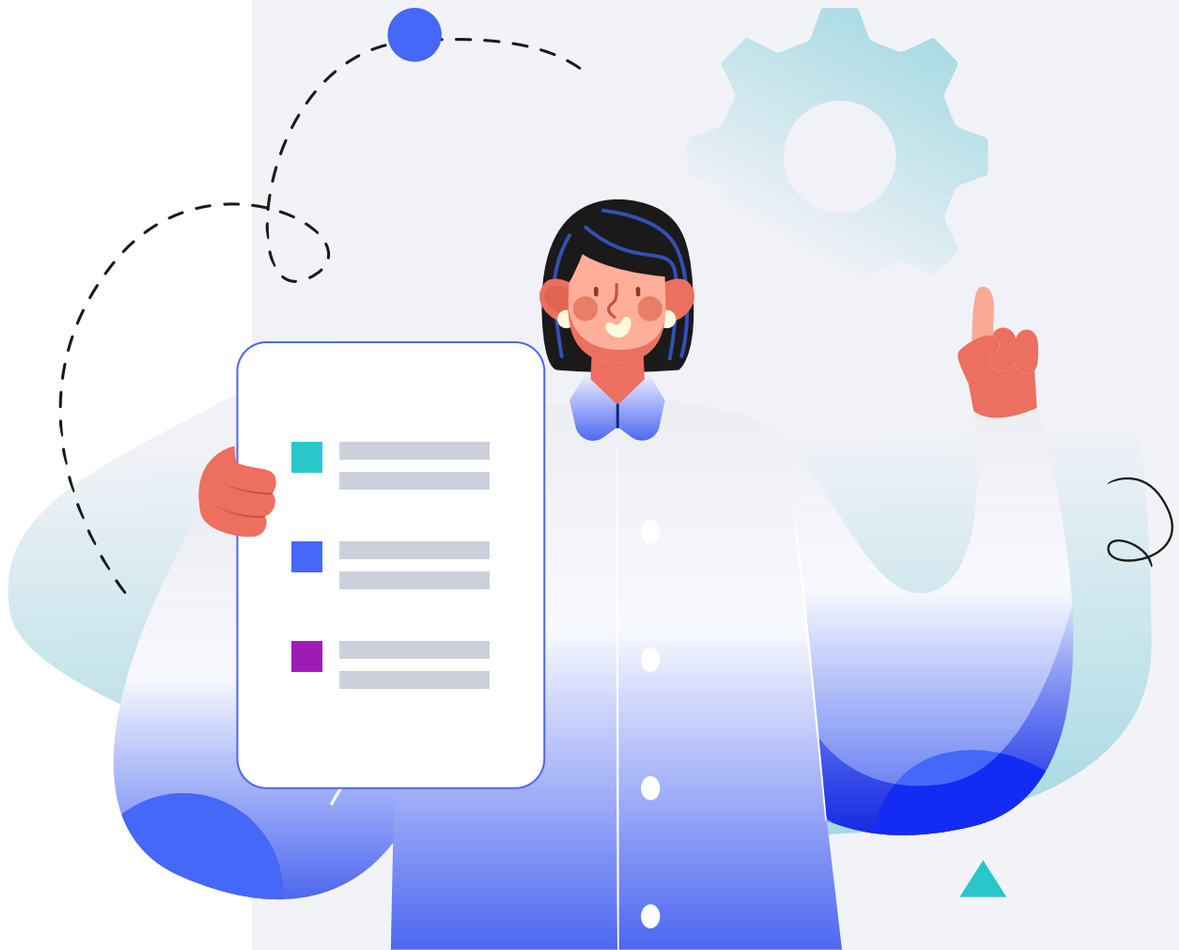
Male

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

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 give you two numbers. The first number describes the force when your heart beats (*systolic* blood pressure). The second number describes the force between heartbeats (*diastolic* blood pressure) [R].

A reading below 120/80 mmHg is generally considered normal. High blood pressure is when the top number is 130 mmHg or higher or the bottom number is 80 mmHg or higher. Doctors call high blood pressure *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**

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 High Blood Pressure 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 High blood pressure can be influenced by non-genetic factors such as 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 Blood Pressure

Key Takeaways:

- About 50% of people's differences in blood pressure may be due to genetics.
- Risk factors include age, ethnicity, diet, weight, activity levels, and stress which are all highly modifiable.
- If your genetic risk is high or you already have high blood pressure, you can take steps now to help reduce overall risk and improve your health.
- High blood pressure rarely causes symptoms, but it raises the risk for stroke and heart attack. Nine out of 10 Americans develop high blood pressure at some point in their lives.
- Click the **next steps** tab for relevant labs and lifestyle factors.

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.

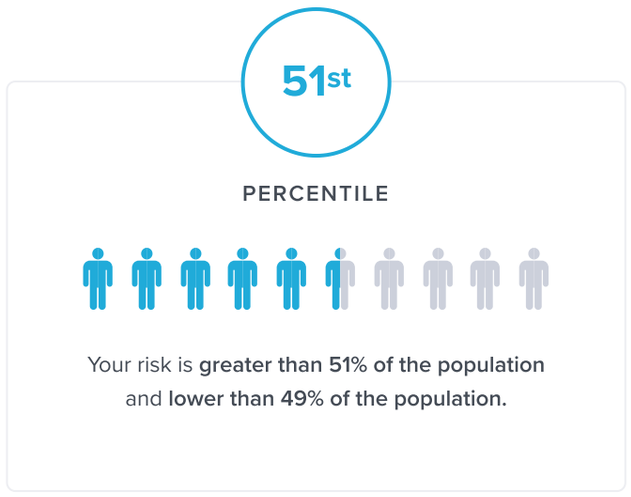
Several factors can contribute to primary hypertension [R]:

- 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]:

TYPICAL LIKELIHOOD

Typical likelihood of hypertension based on 1,035,787 genetic variants we looked at



Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
AGT	rs699	GG
ADRB1	rs1801253	CC
BCL2	rs12454712	TT
APOE	rs7412	CC
ACE2	rs1978124	T
NPR3	rs1173771	AG
SH2B3	rs3184504	TC
TWIST1	rs2107595	AG
ULK3	rs6495122	CA
TNNT3	rs4980379	CT
ARHGAP42	rs633185	CG
TCF7L2	rs34872471	TC
PRKAG2	rs10224002	AG
TNNT3	rs1973765	CC
FGF5	rs10857147	TA
FGF5	rs16998073	TA
FGF5	rs11099098	TG
KCNK3	rs35021474	GC
FGF5	rs1458038	TC
CASZ1	rs880315	CT

- 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 some people than others. This is partly due to genetics, which may account for up to 50% of differences in blood pressure [R, R].

Genes that influence blood pressure can affect:

- Blood volume (*SCNN1A*, *NPR3*, *CSK*, *AGT*, and *ACE2*) [R, R, R, R, R]
- Blood vessel width (*AGT*, *ACE2*, and *NOS3*) [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].

Moreover, genetic predisposition to high levels of the following markers may be causally associated with high blood pressure [R, R, R, R, R, R]:

- Free testosterone
- Lymphocyte count
- Neutrophil count
- L-carnitine
- Alpha-linolenic acid

GENE	SNP	GENOTYPE
NT5C2	rs112913898	GA
NT5C2	rs11191593	TC
FES	rs17514846	AC
PRDM8	rs1902859	CT
NT5C2	rs11191580	TC
FGF5	rs13149993	AG
NT5C2	rs11191548	TC
NT5C2	rs12219304	GC
ACE	rs4343	AA
ABO	rs579459	CC
ULK3	rs2472299	GG
ACE2	rs2285666	C
NGF	rs11466111	CC
EPAS1	rs10168349	CC
RPTOR	rs139293840	GG
BMP3	rs17004869	AA
CACNA1D	rs3774427	CC
CACNA1D	rs9814480	CC
ST7L	rs10776752	GG
ST7L	rs3790604	CC
EML6	rs72806698	CC
ST7L	rs12129649	GG
EML6	rs17046380	TT

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

In contrast, genetically high IGF-1 and EPA levels may be causally associated with lower blood pressure [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].

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	High-Intensity Interval Training (HIIT)	30 minutes
2	DASH Diet	
3	Paleo Diet	
4	Practice Exercise Snacks	1 minutesute
5	Avoid Secondhand Smoke	
6	Strength Training	1 hour
7	Tai Chi	1 hour
8	Dietary Nitrates	
9	Sauna	15 minutes
10	Aquatic Exercise	1 hour
11	Methylfolate	400 mcg
12	Potassium	
13	Whole-Food Plant-Based Diet	
14	Garlic Supplement	200 mg
15	Avoid PCBs	

1

High-Intensity Interval Training (HIIT)

IMPACT 5 / 5

EVIDENCE 5 / 5

How to implement

Engage in HIIT workouts for at least 30 minutes per session, 3 times a week. Each session should include short bursts of intense exercise, such as sprinting or fast cycling, for 30-60 seconds followed by a period of rest or lower-intensity exercise for 1-2 minutes. Adjust intensity and duration based on personal fitness level.

TYPICAL STARTING DOSE

30 minutes

Description

HIIT is a time-efficient form of exercise that involves short bursts of intense activity followed by brief rest periods. It can help improve cardiovascular fitness, burn calories, and build muscle strength in a shorter amount of time compared to traditional steady-state cardio workouts.

HIIT (high-intensity interval training) is a type of interval training that alternates short bouts of intense anaerobic exercise with short periods of rest or low-activity exercise for recovery. Popular examples include **CrossFit and Tabata**.

HIIT improves all types of muscle performance faster than other fitness modalities. HIIT is also more effective at improving heart health and burning fat than other, lower-intensity workouts.

To make the most gains from HIIT, make sure to allow for sufficient resting times. Otherwise, you won't be able to fully recover.

How it helps

High-Intensity Interval Training (HIIT) helps lower high blood pressure by strengthening the heart and blood vessels, enabling them to work more efficiently. Regular HIIT exercises also aid in weight loss, reducing the strain on your heart and arteries, often a key factor in high blood pressure.

A meta-analysis of 10 articles (266 participants) showed that HIIT led to significant reductions in systolic and diastolic blood pressure compared to control groups, but no significant difference was found between HIIT and MICT for blood pressure changes [R].

In a meta-analysis of 38 studies with 1583 participants, Interval Exercise Training (IET) showed greater reductions in resting blood pressure compared to High-Intensity Interval Training (HIIT). However, HIIT led to a more significant decrease in resting heart rate [R].

In nine randomized controlled trials (569 patients), HIIT is more effective than MICT in improving VO2 peak for hypertension patients. HIIT also enhances VO2 peak, BP, and resting HR compared to control groups, with safety observed under supervised conditions for stage 1 hypertension without risks [R].

A meta-analysis of 13 randomized controlled trials involving 442 hypertensive patients found no significant difference between High-Intensity Interval Training (HIIT) and Moderate-Intensity Continuous Training (MICT) in improving blood pressure. However, HIIT was more effective at reducing daytime systolic blood pressure and increasing vasodilation [R].

In an analysis of ten articles, HIIT groups showed significant and relevant reductions in SBP (- 4.44 mmHg) and DBP (- 3.60 mmHg) compared to controls [R].

Please note: *Intense exercise may not be suitable for people with chronic health conditions. Talk to your doctor before starting a new exercise regimen* [R].

2

DASH Diet

IMPACT 5 / 5

EVIDENCE 5 / 5

How to implement

Adopt a dietary pattern that emphasizes fruits, vegetables, whole grains, lean proteins, and low-fat dairy, while reducing sodium, red meat, sweets, and sugary beverages. Aim for 4-5 servings of both fruits and vegetables per day, 6-8 servings of grains (with at least half being whole grains), and 2-3 servings of low-fat dairy. This diet should be followed daily to manage blood pressure effectively.

Description

The DASH (Dietary Approaches to Stop Hypertension) diet is a dietary plan designed to reduce high blood pressure. It emphasizes fruits, vegetables, lean proteins, and whole grains while limiting sodium intake.

Health experts developed the DASH diet to reduce blood pressure. This diet also helps support weight control while reducing inflammation and cholesterol [R].

It **limits salt, sweets, and saturated fat**, while promoting the intake 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/day)

The DASH diet focuses on fresh, minimally processed food rich in nutrients. Magnesium, calcium, and potassium-rich foods are particularly important due to their beneficial effects on the heart and blood vessels [R].

Although similar to the Mediterranean diet, DASH is lower in sodium (<2,300 mg a day) and omega-3 fatty acids. On the other hand, it's higher in red meat and dairy [R].

How it helps

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

PERSONALIZED TO YOUR GENES

The DASH diet may be more effective at lowering blood pressure in people with your *ADRB2* gene variant [R].
The DASH diet may lower blood pressure more in people with your *AGT* gene variant [R].

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
ADRB2	**rs1042713**	GA	

GENE	SNP	GENOTYPE	EVIDENCE
AGT	**rs5051**	TT	

3

Paleo Diet

IMPACT 4 / 5

EVIDENCE 4 / 5

How to implement

Adopt a diet that includes lean meats, fish, fruits, vegetables, nuts, and seeds, resembling the diet of our hunter-gatherer ancestors. Exclude all dairy products, legumes, grains, added sugar, and processed foods. This should be a consistent dietary approach, not a short-term diet, to observe its benefits on health and well-being.

Description

The paleo diet, also known as the caveman diet, emphasizes whole foods such as lean meats, fish, fruits, vegetables, nuts, and seeds while excluding processed foods, grains, and dairy. It is believed to support weight management and reduce the risk of chronic diseases by focusing on foods more in line with our ancestors' diets.

How it helps

A meta-analysis of 8 studies found that the Paleo diet lowered systolic (by 4.75 mmHg) and diastolic (by 3.23 mmHg) blood pressure in healthy people. This diet was similarly effective in another meta-analysis of 4 trials involving 159 people with metabolic syndrome [R].

A meta-analysis of 67 trials comparing 13 different dietary approaches concluded that the Paleo diet is the second most effective one (after DASH) for lowering blood pressure [R].

The Paleo diet promotes the consumption of lean meats, fruits, vegetables, and nuts, which are rich in beneficial nutrients and low in sodium, while avoiding sodium-rich processed foods.

4

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

Staying physically active 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, R]. **In general, choose something that you like, because you'll be more likely to stick to it!**

5

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

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

6

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

A single bout of strength training lowers blood pressure by up to 8.2 mmHg (systolic) and 4.1 mmHg (diastolic) within the first hours after exercise, while continuous resistance training lowers it by 4-5 mmHg (systolic) and 1.7-5 (diastolic), according to several meta-analyses. However, resistance training should be used with caution because it increases blood pressure during exercise [R, R, R, R].

Strength training increases your body's ability to take in and use oxygen efficiently, which can lower your blood pressure.

PERSONALIZED TO YOUR GENES

Strength training may lower blood pressure more in people with your *AGTR1* gene variant [R].
Strength training may lower blood pressure more in people with your *AGTR1* gene variant [R].
Strength training may improve blood vessel function more in people with your *NOS3* gene variant [R].
Strength training may improve blood vessel function more in people with your *NOS3* gene variant [R].

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
CPA3	**rs5186**	CA	
CPA3	**rs5186**	CA	
NOS3	**rs2070744**	TC	
NOS3	**rs2070744**	TC	

7

Tai Chi

IMPACT 4 / 5

EVIDENCE 3 / 5

How to implement

Practice Tai Chi for 30 to 60 minutes at least twice a week. Choose a quiet, spacious area and follow along with a qualified instructor, either in person at a class or through an online video tutorial, to ensure proper technique and maximum benefit.

TYPICAL STARTING DOSE

1 hour

Description

Tai Chi is a traditional Chinese mind-body practice involving slow, flowing movements and deep breathing. It is known for its potential to reduce stress, improve balance, and enhance overall physical and mental well-being.

Tai chi involves gentle movements and breathing to strengthen and relax the mind and body. Practicing tai chi may help [R, R, R]:

- Manage pain
- Improve fitness
- Increase well-being
- Improve sleep and mood

How it helps

Three meta-analyses (the largest one with 13 trials) concluded that practicing tai chi lowers systolic (by ~8.68 mmHg) and diastolic (by ~4.42 mmHg) blood pressure in people with hypertension [R, R, R].

Tai chi may also lower blood pressure in healthy middle-aged and elderly participants, as seen in a meta-analysis of 57 studies [R].

Tai chi may help by promoting relaxation and improving blood circulation.

8

Dietary Nitrates

IMPACT 4 / 5

EVIDENCE 3 / 5

How to implement

Incorporate foods high in dietary nitrates, such as beets, spinach, arugula, and celery, into your daily meals. Aim for about 300-400 mg of dietary nitrates daily, which equates to roughly 2 cups of nitrate-rich vegetables.

Description

Nitrates found in foods like leafy greens and beets can convert into nitric oxide in the body, which may help dilate blood vessels, lower blood pressure, and enhance exercise performance.

How it helps

Foods that contain **nitrates** can potentially increase NO and thus lower blood pressure. Vegetables are rich in nitrates and roughly supply 80% of these compounds [R].

Beetroot is the most famous nitrate-rich food. Some other foods rich in nitrates include [R]:

- Leafy greens
- Celery
- Broccoli
- Chinese cabbage
- Turnips
- Cucumbers
- Carrots
- Cauliflower
- Pomegranate juice

9

Sauna

IMPACT 4 / 5

EVIDENCE 3 / 5

How to implement

Use a sauna 2-3 times a week for 15-20 minutes per session. Begin with a temperature that feels comfortable, typically between 150-195 degrees Fahrenheit (65-90 degrees Celsius), and gradually increase the time and temperature as you become more accustomed to the heat.

TYPICAL STARTING DOSE

15 minutes

Description

Sauna is a heated room or space used for relaxation and health benefits. Regular sauna sessions can promote relaxation, improve circulation, and potentially have cardiovascular and detoxification benefits.

Sauna is a form of whole-body hot application originated in Finland. Saunas are small rooms that use dry heat from a stove or hot rocks to raise the temperature of the room to 80-100 °C with very low humidity (10-20%) [R].

People mainly use saunas to help [R]:

- Detox
- Increase blood circulation
- Reduce pain
- Promote relaxation

How it helps

A study of 1,621 men associated 2-3 sauna bathing sessions per week with a 24% lower risk of hypertension. In those using the sauna most days of the week (4-7), the risk was decreased by 46% [R].

In 2 uncontrolled trials of 118 people at risk of heart disease, a sauna session lowered systolic (by 7 mmHg), diastolic (by 7 mmHg), and mean (by 5.8 mmHg) blood pressure during the following 0.5-2 hours [R, R].

During sauna bathing, exposure to hot temperatures may lower blood pressure by increasing blood pumping by the heart and improving blood vessel function [R].

10

Aquatic Exercise

IMPACT 4 / 5

EVIDENCE 3 / 5

How to implement

Participate in aquatic exercise sessions, such as swimming or water aerobics, for 60 minutes, 3 to 5 times per week. Ensure the exercise intensity is moderate, allowing you to talk but not sing during the activity. Consistency over time is key, so aim to incorporate this into your weekly routine for at least 3 to 6 months to observe benefits.

TYPICAL STARTING DOSE

1 hour

Description

Aquatic exercise involves physical activity performed in water, such as swimming, water aerobics, or aquatic therapy. It is gentle on the joints, making it suitable for individuals with mobility issues, and can help improve cardiovascular fitness and muscle strength.

Aquatic exercise is any type of low-impact physical activity performed in a pool. In this type of cardio exercise, water helps the body float, which reduces gravity and makes the practice more comfortable and tolerable [R, R].

Compared to land-based exercise, aquatic exercise may be better by [R]:

- Reducing the stress and impact on joints
- Lowering fracture risk

Hence, it is usually **recommended for the elderly**. Aquatic exercise is also suitable for people who don't know how to swim [R].

How it helps

A meta-analysis of 14 trials and 452 participants concluded that aquatic exercise lowers systolic (by 8.4 mmHg) and diastolic (by 3.3 mmHg) [R].

Aquatic exercise may also lower blood pressure in people with type 2 diabetes, as seen in a meta-analysis of 12 studies [R].

Aquatic exercise causes your heart to pump faster, improving its strength and efficiency. The pressure of water also aids in better blood circulation from your legs to your heart.

11

Methylfolate

IMPACT 4 / 5

EVIDENCE 3 / 5

How to implement

Take an L-methyl folate supplement (400-800 micrograms daily), ideally with a meal, to improve absorption. This dosage is recommended for adults, including pregnant women, to support overall health, especially to reduce the risk of neural tube defects in developing fetuses. Continue daily use as part of your regular supplement routine.

TYPICAL STARTING DOSE

400 mcg

Description

Folate, a B-vitamin, is crucial for DNA synthesis, cell growth, and the formation of red blood cells. Adequate folate intake supports overall health and reduces the risk of neural tube defects during pregnancy.

Vitamin B9 (*folate*) plays an essential role in [R, R, R]:

- Making DNA
- Metabolism
- Energy production

SelfDecode recommends L-methylfolate as the preferred folate supplement for those who need one. It is superior to folic acid because it doesn't require activation, but the research is still ongoing [R, R].

How it helps

Folate helps in breaking down an amino acid called homocysteine, which at high levels can lead to narrowing and hardening of blood vessels, essentially contributing to high blood pressure. So, a supplement of folate can reduce homocysteine levels in your blood, potentially reducing blood pressure.

A meta-analysis of 22 studies and 41,633 participants concluded that supplementation with folic acid **lowers SBP (by 1.1 mmHg) when baseline SBP was ≥120 mmHg, intervention duration was ≤6 weeks, intervention dose was ≥5 mg/day, in patients with CVD, and in overweight participants**, and **DBP (by 0.24 mmHg) when baseline SBP was ≥120 mmHg, intervention duration was >6 weeks, intervention dose was <5 mg/day, in CVD patients, and participants with normal weight** [R].

Similarly, 2 meta-analyses (the largest one with 21 studies and 2025 participants) concluded that supplementation with folic acid (typically, 5-10 mg/day for 6-24 weeks) **improves flow-mediated dilation percentage (by 1.08-2.59%) and FMD (by 24.38 µm). There was a dose-response effect** [R, R].

12

Potassium

IMPACT 4 / 5

EVIDENCE 3 / 5

How to implement

Try to consume a variety of potassium-rich foods, such as potatoes, bananas, and lentils. Potassium supplements are also available, but you shouldn't take them without consulting your doctor. Do not exceed 4700 mg daily from all sources unless advised by your doctor.

Description

Potassium is an essential mineral. Our cells need it to function. Potassium is especially important for your heart health. Foods rich in potassium include potatoes, lentils, squash, bananas, and spinach.

Potassium is an essential mineral. Our cells need it to function. Potassium is especially important for your heart health [R, R].

That said, a lot of people may not be getting enough potassium. That's because Western diets are generally low in it. There's not much potassium in processed foods. Also, many people don’t eat enough fruits and vegetables, which are rich in this mineral [R].

The recommended potassium intake is about 4.7 g/day. **Make sure you are eating enough foods that are rich in this mineral**, such as [R, R]:

- Potatoes and sweet potatoes
- Lentils
- Squash
- Bananas
- Apricots
- Spinach

However, do not take potassium supplements without talking to your doctor first.

How it helps

Potassium helps remove excess salt (sodium) from your body. It can also help relax your blood vessels, which further decreases blood pressure.

Increasing your potassium intake (by at least 780 mg/day) may help reduce your blood pressure — that's about two bananas a day. This can be particularly effective for people who get too much salt in their diet [R, R, R].

PERSONALIZED TO YOUR GENES

Your ***EDN1*** gene variant has been linked to higher blood pressure. People with this variant may benefit more from getting extra potassium [R, R, R].

In people with your *ACE2* gene variant, getting more potassium may help reduce blood pressure [R].

Supplementation with potassium may lower blood pressure more in people with your *EDN1* gene variant [R].

Dietary potassium may lower blood pressure more in people with your *NR3C2* gene variant [R].

Dietary potassium may lower blood pressure more in people with your *HSD11B1* gene variant [R].

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
EDN1	**rs1630736**	TC	●●●
ACE2	**rs4646174**	C	●●●
EDN1	**rs1476046**	GA	●●●
NR3C2	**rs1879829**	CT	●●●
UTP25	**rs11808690**	TG	●●●

13

Whole-Food Plant-Based Diet

IMPACT 3 / 5

EVIDENCE 4 / 5

How to implement

To implement a plant-based diet, fill your meals with fruits, vegetables, legumes, seeds, and whole grains. Aim for at least 5 servings of fruits and vegetables per day, include legumes in your meals several times a week, and choose whole grains over refined grains. Adjust your diet gradually over a few weeks to avoid digestive discomfort.

Description

A plant-based diet primarily consists of foods derived from plants, such as fruits, vegetables, whole grains, nuts, and seeds, while minimizing or excluding animal products. This dietary approach is associated with numerous health benefits, including reduced risk of chronic diseases like heart disease, diabetes, and certain cancers, as well as improved weight management and overall well-being due to its emphasis on nutrient-dense, fiber-rich foods.

A plant-based diet is not necessarily vegetarian or vegan. It focuses on eating foods mainly of plant origin [R].

It includes a variety of fruits and vegetables, grains, dairy, high-protein foods, and oils [R].

Following a plant-based diet may support [R, R, R, R]:

- Heart health
- Blood sugar control
- Kidney health

How it helps

Eating a vegetarian diet can help lower high blood pressure because it's typically high in potassium and fiber, nutrients that help control blood pressure. Additionally, since this diet is low in saturated fats and contains virtually no cholesterol, it can also aid in maintaining healthier blood vessels and a lower weight, which can further help regulate blood pressure.

Meta-analyses show significant reductions in systolic and diastolic blood pressure among people on the following plant-based diets compared to omnivores:

- Lacto-ovo vegetarian diet [R]
- Vegetarian diet [R, R, R]

Vegan diets may lower blood pressure more than lacto-ovo vegetarian diets [R].

One study found that following a vegetarian diet for 6 months may not offer any benefit [R].

14

Garlic Supplement

IMPACT 3 / 5

EVIDENCE 4 / 5

How to implement

Take a garlic supplement, such as a garlic extract or aged garlic supplement, in a dosage of 600-1,200 mg per day, divided into separate doses. This should be taken with meals to minimize digestive issues. Continue daily for at least 8-12 weeks to evaluate its effects on health markers like blood pressure or cholesterol.

TYPICAL STARTING DOSE

200 mg

Description

Garlic is a pungent herb known for its potential health benefits, including cardiovascular support and immune system enhancement. It contains bioactive compounds that may help reduce the risk of chronic diseases and support overall well-being.

Garlic is a delicious aromatic herb that adds flavor to your food. But did you know that garlic has been a part of traditional medicine for thousands of years? **From ancient Egypt and Rome to China, people have praised garlic for its many health benefits.** Today, we can trace many of those benefits to sulfur-rich compounds found in garlic. People take garlic to help control their blood pressure and cholesterol [R].

Please note: *Garlic can interact with blood thinners (like aspirin, Plavix, Coumadin). If you are on blood thinners, consult your doctor before supplementing with garlic [R].*

How it helps

Studies have found that supplementing with garlic extract (600-2,400 mg/day) may help lower blood pressure [R, R, R, R, R, R].

Garlic can help lower blood pressure in two ways. First, sulfur-containing compounds in garlic can help relax blood vessels. Second, garlic can also improve blood flow by reducing blood vessel inflammation [R, R, R].

PERSONALIZED TO YOUR GENES

Your *JAG1* gene variant is linked to high blood pressure. Increased *JAG1* activity likely narrows blood vessels. Garlic may help by widening blood vessels [R, R, R].

Your *AGT* gene variant is linked to high blood pressure, likely due to narrowed blood vessels. Garlic may help by relaxing blood vessels [R, R].

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
JAG1	**rs1887320**	GA	

GENE	SNP	GENOTYPE	EVIDENCE
AGT	**rs699**	GG	

15

Avoid PCBs

IMPACT 3 / 5

EVIDENCE 3 / 5

How to implement

To avoid PCBs (Polychlorinated Biphenyls), do not use old electrical equipment manufactured before 1977, avoid consuming fish from contaminated waters, especially larger species such as shark and swordfish which are higher in the food chain, and check for and properly dispose of any old fluorescent lighting fixtures that may contain PCBs. Pay attention to local advisories regarding the safety of locally caught fish and wildlife.

Description

PCBs are toxic chemicals that can cause cancer, reproductive problems, and developmental problems. Avoiding exposure to PCBs is important for protecting your health.

Polychlorinated biphenyls (PCBs) are man-made chemicals. They were used in the industry until their **ban in 1979**. PCBs are considered **persistent organic pollutants** (POPS) due to their slow degradation in the environment. They may also **accumulate** in the food chain and the human body [R, R].

We may be exposed to PCBs through contaminated [R, R]:

- **Food** (e.g., fish, meat, rice)
- Soil
- Air

PCBs may have toxic effects on [R, R]:

- Immunity
- Nervous system
- Reproductive system
- Hormone levels

They may also increase the risk of cancer and reduce lifespan [R, R].

How it helps

Avoiding PCBs (Polychlorinated Biphenyls), harmful man-made chemicals, can be beneficial for high blood pressure because exposure to these chemicals is associated with increased blood pressure. By avoiding these, you reduce the risk of elevated blood pressure levels.

A meta-analysis of 17 studies associated high exposure to PCBs and 70% higher risk of hypertension. For every 1000-ng PCB/g lipid increase, the risk increased by 2.23-fold. Among single PCB congeners, DL-PCB 105 and 118, and non-DL-PCB138 and 153 were related to hypertension [R].

A study of 976 participants associated most PBCs with hypertension. Combined exposure to PCBs and dioxins increased the risk 2.2 times [R].