

# Nutrigenomic Analysis & Health Program

Created For:  
Jane Smith



Prepared by:  
Kara Kruger, CNC  
Dominic Dinino, CNC  
Peak Wellness Group, LLC



Thank you for considering Peak Wellness Group. We are committed to empowering you to reach your full health potential. At Peak Wellness Group, we take an individualized whole body systems approach to health optimization.

### Program and Assessment Includes:

- Inflammation Genotype Report
- Mineral Genotype Report
- Mood Genotype Report
- Vitamins Genotype Report
- Third Party Blood Analyzer
- Symptoms Analysis Report
- Supplementation Recommendations
- Overall Recommendation Of Proper Foods, Supplements And Lifestyle Choices
- Complete Follow Ups

**Your First Step To Achieving Optimum Health!**

# WHOLE BODY SYSTEMS APPROACH TO HEALTH OPTIMIZATION

**EPIGENETICS**

**ELIMINATION  
OF TOXICITIES**

**STRESS  
REDUCTION**

**BALANCE OF  
MICROBIOME  
GUT HEALTH**

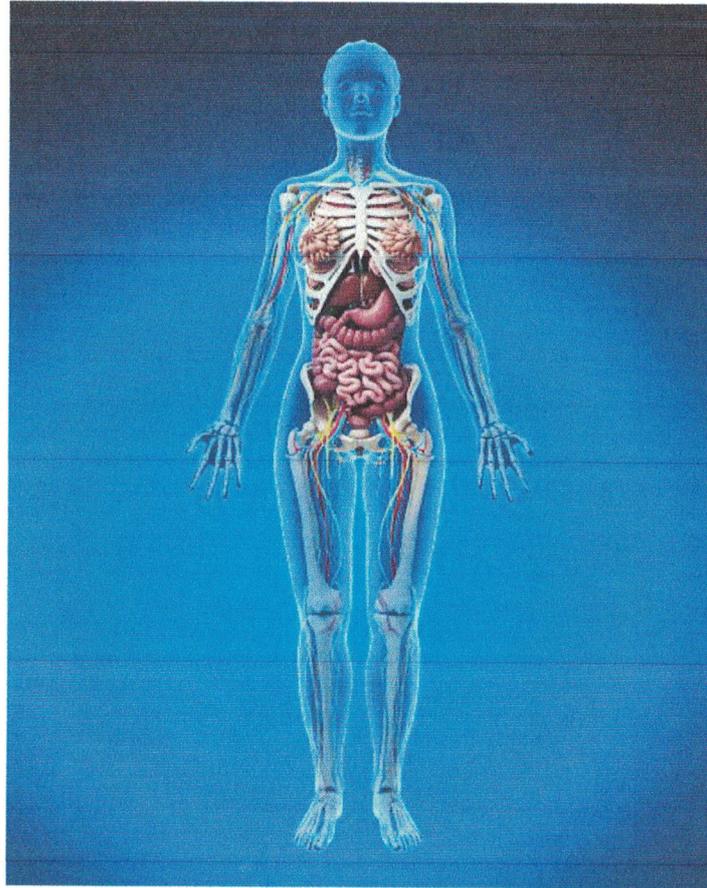
**BUILDING A STRONG  
IMMUNE SYSTEM**

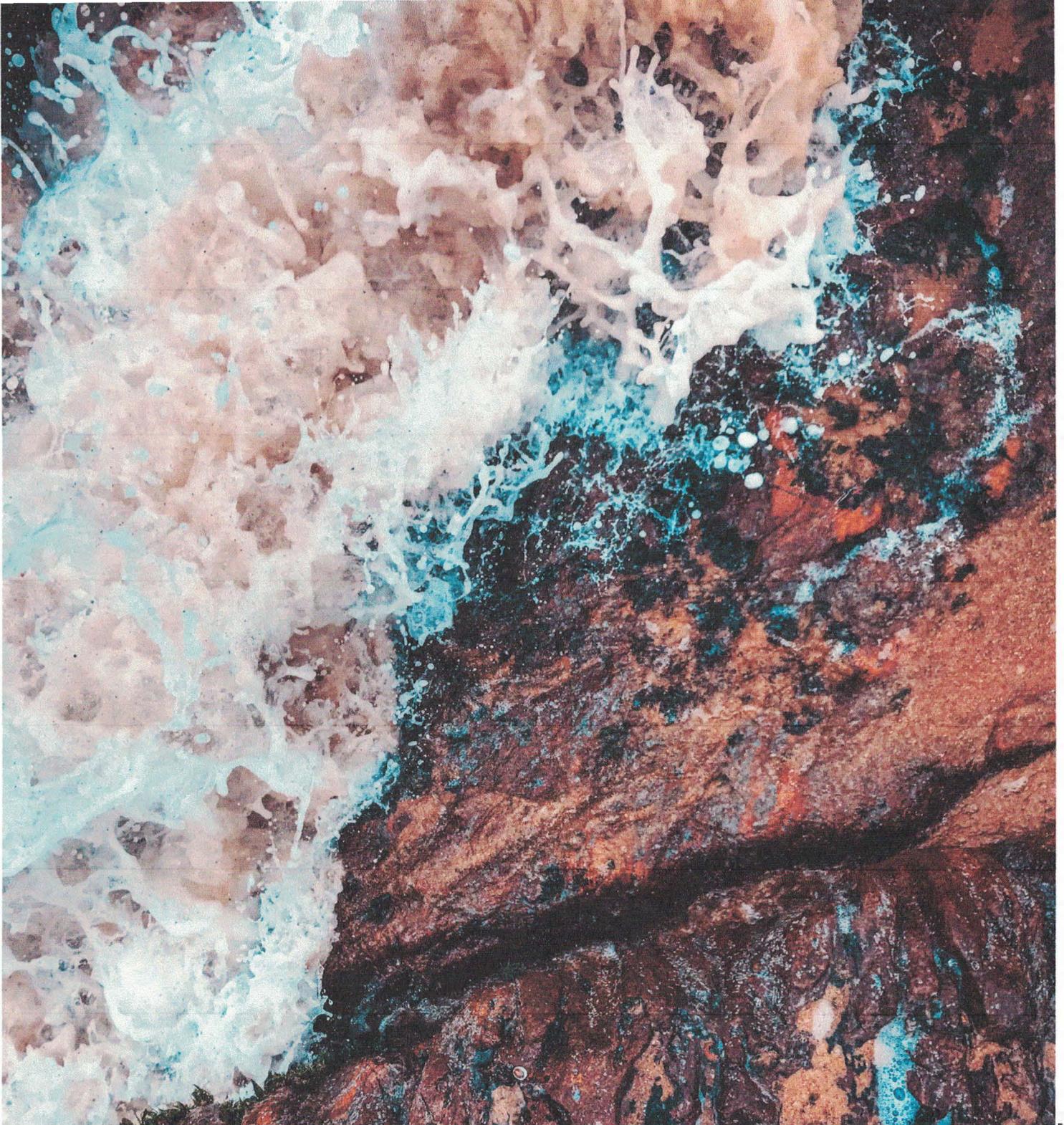
**PROPER  
NUTRITION**

**ESSENTIAL  
SLEEP**

**MOVEMENT**

**PROPER  
MODULATION  
OF GENE  
EXPRESSIONS**





**ESSENTIAL**  
*DNA Wellness Report*  
**MINERALS**

Jane Smith



# Report Summary For Jane Smith

Reported traits		Your SNP based summary
<b>Magnesium</b>	Mg	Slightly Increased Risk of Magnesium Deficiency
<b>Sodium (Sodium/Salt-sensitivity)</b>	Na	Typical Risk of Sodium/Salt-Sensitivity
<b>Potassium</b>	K	Typical Risk of Potassium Deficiency
<b>Calcium</b>	Ca	Typical Risk of Calcium Deficiency
<b>Phosphorus</b>	Ph	Slightly Decreased Risk of Phosphorus Deficiency
<b>Iron</b>	Fe	Moderately Increased Risk of Iron Deficiency
<b>Zinc</b>	Zn	Slightly Decreased Risk of Zinc Deficiency

The above table includes information about your genotype and associated deficiency or health risk scores for each **essential mineral** included in this report. Note that this risk estimate is solely based on the selected genetic variants (SNPs) analyzed in this report and your genotype file may not contain all of the SNPs referenced in the report. This document is not diagnostic or conclusively predictive and any concerns or lifestyle changes should always be discussed with a healthcare professional first.

Nonetheless, the combination of personalized genetic analysis and optimal lifestyle choices provides a new and powerful approach to reducing your risk for **essential mineral deficiencies** in the long run and can help you make the best and most well-educated decisions about your health. Read on to get a more in-depth look at how your genes can help you achieve optimal health!

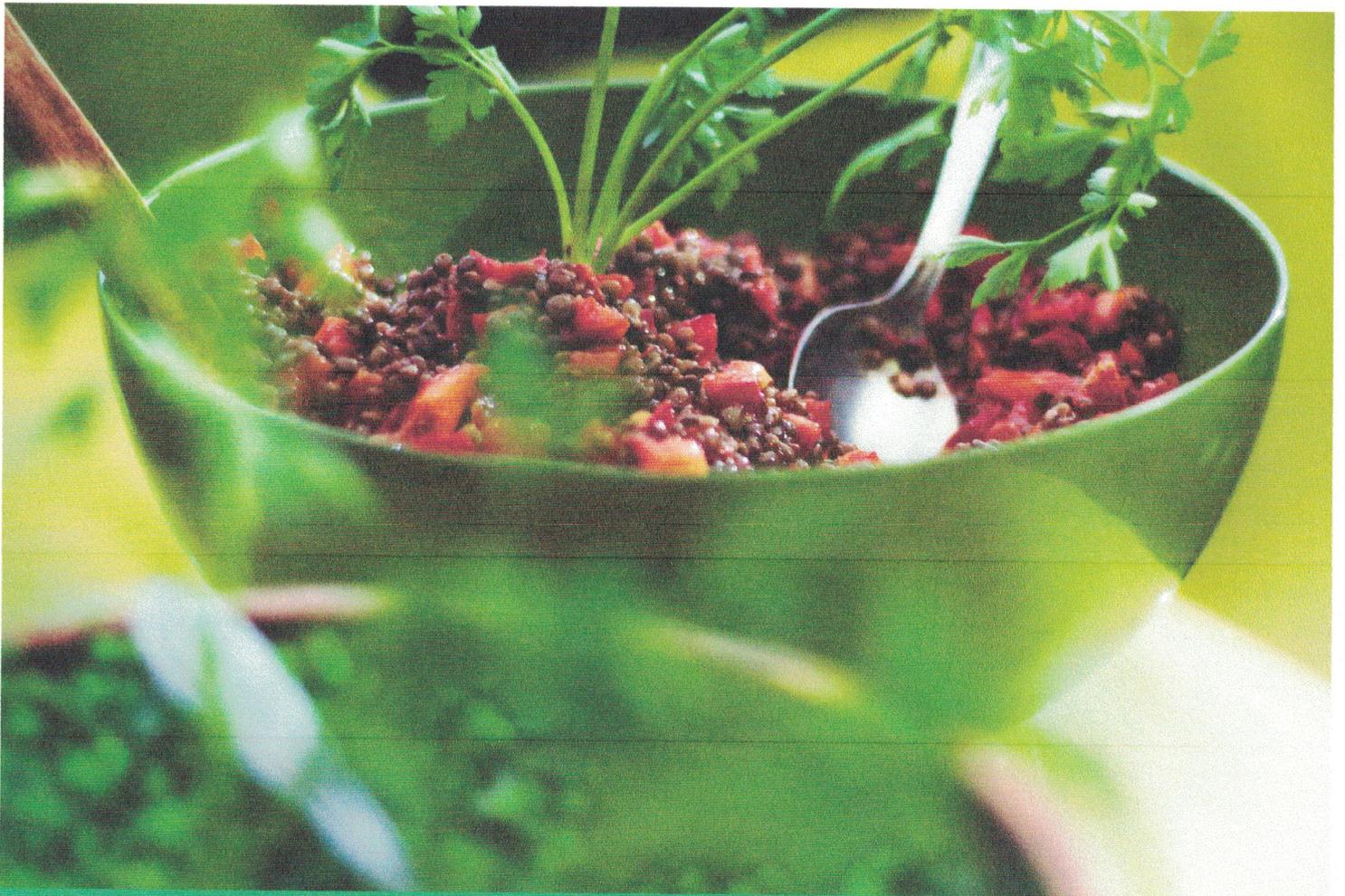
## Top Suggestions

The following are the top suggestions made in this report. We have taken your genetic makeup into consideration when identifying these. Please remember to consult a health professional first if you have any concerns. For a full list of your prioritized recommendations skip to the Conclusion section.

1. **Take in more foods high in heme iron from meat sources such as beef, seafood, and chicken.**
2. **Ensure your diet contains sufficient amounts of magnesium from foods such as nuts, leafy greens, fruits, and meats.**
3. **Zinc decreases magnesium absorption. If you take both, take one in the morning and the other in the afternoon/evening.**

## Table of Contents

01	—	<u><i>Introduction</i></u>
02	—	<u><i>Magnesium</i></u>
03	—	<u><i>Sodium (Sodium/Salt-sensitivity)</i></u>
04	—	<u><i>Potassium</i></u>
05	—	<u><i>Calcium</i></u>
06	—	<u><i>Phosphorus</i></u>
07	—	<u><i>Iron</i></u>
08	—	<u><i>Zinc</i></u>
09	—	<u><i>Conclusion</i></u>
10	—	<u><i>References</i></u>



## *Welcome to your Essential Minerals DNA Wellness Report*

Welcome to your SelfDecode Essential Mineral DNA Wellness Report!

The goals of this report are to:

1. Present you with general information about genetics, nutrients, and essential minerals.
2. Highlight genes and genetic variations that have been associated with essential mineral status.
3. Show you how your genetic make-up may be affecting the way your body processes and uses essential minerals.
4. Empower you to make informed decisions about your diet and lifestyle.
5. Provide you with insight into which essential mineral and essential mineral supplements may benefit you most.

6. Show you how [SelfDecode's DNA Wellness Reports](#) can help you achieve optimal health and wellness.

Overall, this report includes information about how your body uses Essential Minerals. First, we carefully look at the scientific literature for any genetic variations that have been associated with essential minerals levels or activity in the body. We then use your personal genotype file and create this report based on how your unique genetic make-up can influence these processes. We analyze nutrigenomic research and provide useful tips and suggestions, including personalized diet, lifestyle, and supplement recommendations, to help you improve your long-term health and wellness.

# Introduction

## *Nutrient Overview*



**Nutrients are vital to our existence.** They provide the raw materials our bodies need to grow, survive, and be healthy. We get the vast majority of our nutrients -- including vitamins, minerals, amino acids/proteins, fatty acids, and carbohydrates -- from the food we eat and the supplements we take.

The food you eat passes from the stomach to the small intestine, where most nutrients are **absorbed** into the bloodstream. Once in the bloodstream, they are **distributed** throughout the body to perform a variety of essential functions. After their job is done, these various nutrients are **metabolized** (broken down) and finally **excreted**.

**Our genetics can have a profound influence on the way our bodies utilize nutrients.** In fact, our genes impact how nutrients are used from the moment we consume them until the time we get rid of them. **The scientific study of this process is called *nutrigenetics*.** Individual variability can make a significant difference in how people respond to different nutrients -- and nutrigenetics makes it possible to develop personalized recommendations and suggestions based on each person's unique genetic make-up [1].

The journey into understanding how our genes shape the way we respond to nutrients is only just beginning, and new discoveries about the human genome are continually providing valuable insights into the science of personalized nutrition. Because these scientific discoveries are ongoing, this report is not a comprehensive list of all of the SNPs associated with mineral processing and use, as there are many genetic variations yet to be discovered! **Nonetheless, we here at SelfDecode are always striving to provide the most up-to-date, in-depth, and comprehensive information to help you achieve optimal health and wellness** -- and so we'll be constantly updating our **DNA Wellness Reports** as research continues to advance.

## *What Are Minerals?*

**Minerals are a collection of essential, essential trace, and non-essential elements that keep our bodies functioning properly and in optimal health.** They cannot be produced in the body, so we get all of our minerals from our diet or supplements [2].

The **main essential minerals/electrolytes in our bodies are magnesium, sodium, potassium, chloride, calcium, phosphorus, iron, and zinc.** Along with the remaining micro and trace minerals, they make a very small but important percentage of the human body [2, 3].

Most minerals aid the activity of important enzymes. Some work to balance energy production and metabolism in the body, while others help build and maintain bones or keep the immune system in check.

Both mineral deficiency and overload are a concern all over the world. That's why it's crucial to maintain a proper balance of minerals in the body.

Women, babies, children, and the elderly are most susceptible to mineral deficiencies, the most common type being iron (an essential trace mineral), magnesium, and calcium. Aging, poor nutrition and absorption, or existing health conditions also tend to lower mineral levels or activity in the body [4, 5].

Maintaining normal, or ideally, optimal levels of minerals in your body will help prevent deficiencies/overload, keep you healthy, and empower you to perform at your best!

The table on the following page is a comprehensive list of essential minerals and associated food sources:

## Essential Minerals Wellness Food List

Essential Mineral	Food Sources
<b>Magnesium (Mg)</b>	<p style="text-align: center;"><b>Autoimmune-friendly:</b> salmon, chicken, beef, avocados, spinach</p> <p style="text-align: center;"><b>Other:</b> almonds, cashews, peanuts, broccoli, hemp seeds, carrots, bananas, raisins, apples, brown rice, and whole grains</p>
<b>Sodium (Na)</b>	<p>Many foods contain added salt. The ones with the highest amounts to watch out for are canned, cured, or salted meat or fish, and cheese</p>
<b>Potassium (K)</b>	<p style="text-align: center;"><b>Autoimmune-friendly:</b> avocados, beef, chicken, turkey, salmon, tuna, sweet potatoes (with skin)</p> <p style="text-align: center;"><b>Other:</b> apricots, prunes, raisins, squash, lentils, kidney beans, soybeans, tomatoes, carrots spinach, broccoli, asparagus, apples, bananas, cantaloupe, orange juice, cashews, peanuts, and baked potatoes (with skin)</p>
<b>Calcium (Ca)</b>	<p style="text-align: center;"><b>Autoimmune-friendly:</b> chicken, eggs, sardines, salmon, tuna, bok choy, kale, spinach</p> <p style="text-align: center;"><b>Other:</b> milk, yogurt, cheese, tomatoes, cucumbers, cabbage, oranges, tangerines, apples, plums, dried dates, walnuts, almonds, peanuts, pistachios, hazelnuts, sunflower seeds, pumpkin seeds, hemp seeds, chia seeds, and sesame seeds</p>
<b>Phosphorus (P)</b>	<p style="text-align: center;"><b>Autoimmune-friendly:</b> turkey, chicken, chicken and beef liver, rabbit, lamb, pork, veal, salmon, shrimp, squid, cod, trout, tuna, egg yolk</p> <p style="text-align: center;"><b>Other:</b> nuts, hard and soft cheeses, ham</p> <p style="text-align: center;"><b>Avoid processed foods with phosphate additives such as soft drinks, processed meat, ham, sausages, canned fish, baked goods</b></p>
<b>Iron (Fe - Heme)</b>	<p><b>Autoimmune-friendly:</b> beef, beef liver, chicken, turkey, tuna, oysters, and sardines</p>
<b>Iron (Fe - Non-heme)</b>	<p style="text-align: center;"><b>Autoimmune-friendly:</b> spinach, eggs</p> <p style="text-align: center;"><b>Other:</b> broccoli, legumes, tomatoes, cashews, pistachios</p>
<b>Zinc (Zn)</b>	<p style="text-align: center;"><b>Autoimmune-friendly:</b> oysters, crab, lobster, beef, pork, chicken</p> <p style="text-align: center;"><b>Other:</b> almonds, cashews, beans and legumes, yogurt, cheese, milk, and oatmeal</p>



**CARDIOVASCULAR**  
*Genetic Report*

Jane Smith

# Report Summary For Jane Smith

Reported traits		Your SNP based summary
Cardiomyopathies	Atrial fibrillation	Mixed association with atrial fibrillation
	Heart failure	Mixed association with heart failure
	Congenital heart defects	Mixed association with heart defects in offspring
Vascular Complications	Coronary heart disease	Mixed association with coronary heart disease
	Stroke	Slightly increased risk of stroke
	Hypertension	Mixed association with hypertension

**Your genetic variations suggest a mostly normal risk of cardiovascular complications.**

**Based on these SNPs you are not at major risk. However, if you do experience cardiovascular related complications it would be wise to follow general guidelines for healthy hearts. Get plenty of exercise, sleep, water, and fresh produce. Reduce or avoid salt, smoking, and stressful scenarios.**

**Your genotype file has information on most of the SNPs we analyze. You have data on 41 of 44 SNPs targeted by this report. Slight differences between the SNPs reported on by 23andMe (v4 and v5 chips) and other companies mean you are missing a few.**

This risk estimate is solely based on the genetic variants used in this report and is not diagnostic or conclusively predictive. Any concerns or lifestyle changes should always be discussed with a health professional first.

The combination of optimal lifestyle choices and personalized genetics provides a new and powerful approach to reducing your cardiovascular risk and living a longer, healthier, and happier life.

## Top Suggestions

The following are the top suggestions made within this report. We have taken your genetic makeup into consideration when identifying these. Please remember to consult a health professional first if you have any concerns. For a full list of your prioritized recommendations skip to the [Conclusion](#) section.

1. Take [quercetin](#) supplements or eat foods high in quercetin (red onion, berries, and spinach) (See your SNPs: [Hypertension](#))
2. Take [niacin](#) supplements or eat foods high in niacin (fatty fish and mushrooms) (See your SNPs: [Coronary heart disease](#))
3. Increase the amount of [green tea](#) and [ginseng](#) in your diet (See your SNPs: [Hypertension](#))

# Table of Contents

<b>01</b>	<hr/>	<i><u>Introduction</u></i>
<b>02</b>	<hr/>	<i><u>Heart Complications</u></i>
<b>03</b>	<hr/>	<i><u>Vascular Complications</u></i>
<b>04</b>	<hr/>	<i><u>Conclusion</u></i>
<b>05</b>	<hr/>	<i><u>References</u></i>

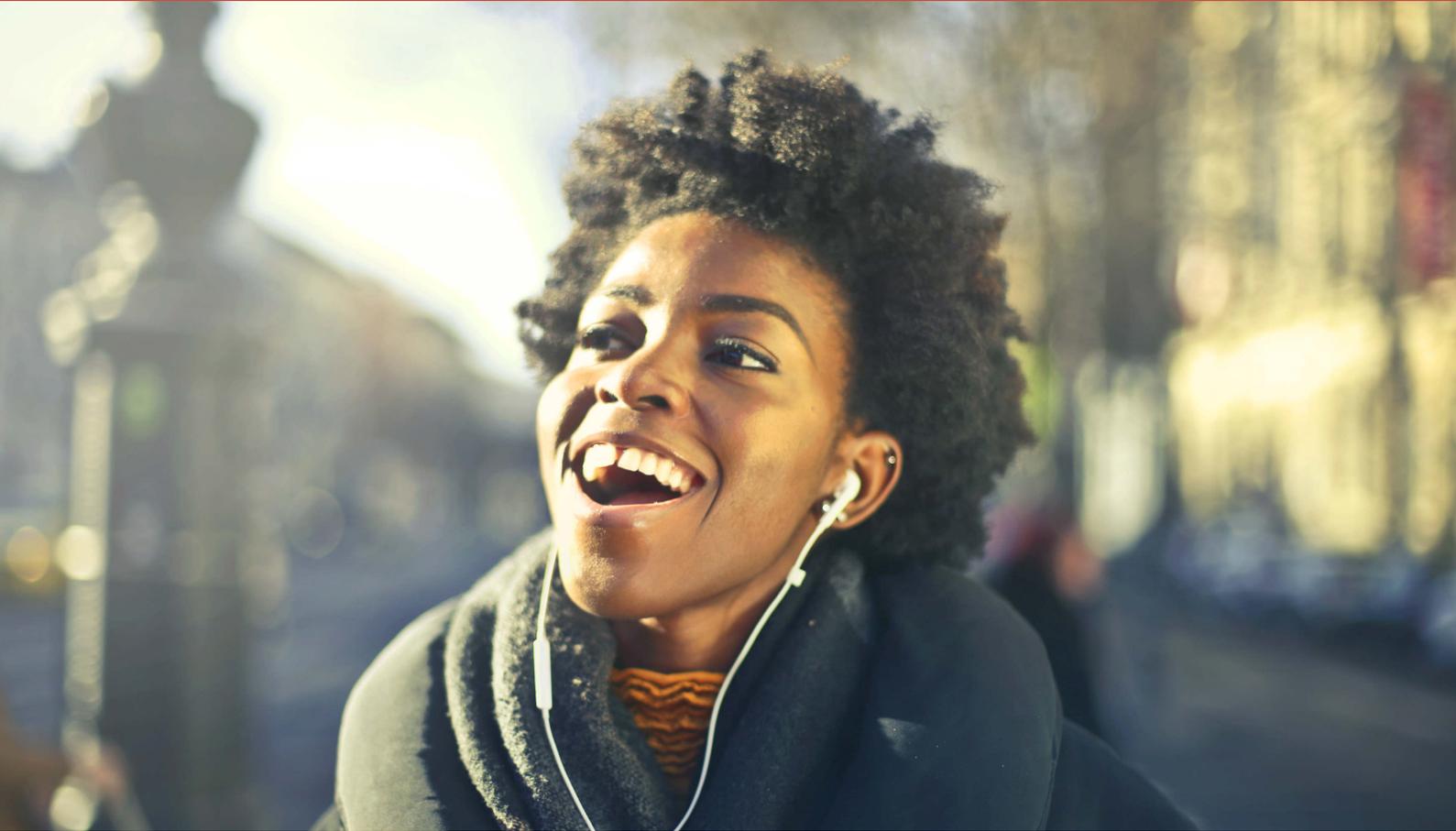


## *Welcome to your Cardiovascular Gene Report.*

Our goal here is to introduce you to some key heart health genetic variations. We will review your genetic data for each one and report on their connection to cardiovascular complications. We then provide summaries of your risk and some suggestions for how to best use that information.

# Introduction

## *How Healthy Hearts Help*



Your heart pumps blood throughout your body, bringing fuel to cells in need whilst carrying away the waste. It works very hard to do this, beating about 100,000 times a day.

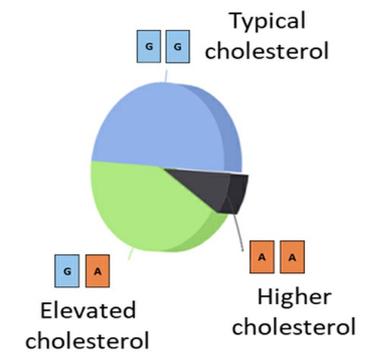
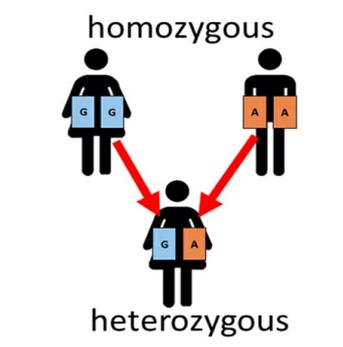
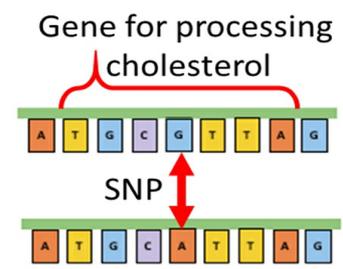
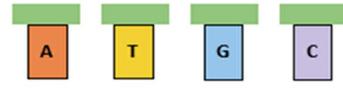
Your cardiovascular system is comprised of your heart and your blood vessels. Blood is pumped from the heart through arteries. Arteries branch into capillaries, which provide fuel to cells and collect the waste. Veins then carry the blood back to the heart. Having a healthy heart means you have a more efficient energy distribution system, it means you can recycle waste products more effectively, it means a longer and more active life.

Cardiovascular diseases impact the heart and blood vessels. They can manifest as complications to the heart itself and as issues with the blood vessels. As the two are so closely linked, any issue with one will quickly create complications with the other.

Options for preventing cardiovascular disease include:

- Herbs and foods rich in antioxidants (e.g. [resveratrol](#) or [alpha-lipoic acid](#)), and good fats ([omega-3 fatty acids](#)).
- Specialized supplements like [magnesium](#), [niacin](#), and [CoQ10](#).
- Lifestyle changes, including [stress reduction](#), getting enough fresh air and sun, and tailoring [aerobic exercise](#) to your fitness.

The risk of developing cardiovascular disease is determined by a combination of two factors: genetics and environment. The genetic aspect of cardiovascular disease depends on what kind of information your DNA contains. Every person's DNA is different, so every person's chance of getting cardiovascular disease is different.



- G typical heart disease risk
- A higher heart disease risk

# What Your Genetics Has to Say About Your Heart

Your DNA is like a long string packed into every cell in your body. Along this string are ‘**bases**’, lined up like beads. There are four bases, marked by the letters: **A, G, C, and T**. These align in very specific sequences to create **genes**. Your unique genetic makeup is stored in the sequence of these bases.

The sequence of letters can **vary between people**. For example, at a specific location in the sequence 75% of the population have a G while the other 25% have an A. The difference is in only one base (or ‘nucleotide’), so this type of genetic variation is called a **Single Nucleotide Polymorphism** or **SNP** (pronounced ‘snip’). In this example, the SNP has two possible variations, G or A.

You inherit two copies of each gene, one from your mother and one from your father. For the above SNP, if you carry one of each variant (e.g., GA), you are **heterozygous** for this SNP. If you carry two that are the same (e.g., GG or AA), you are **homozygous** for this SNP. If the majority of the population carry a G allele, the GG genotype is called homozygous **major**, while the AA genotype is called homozygous **minor**. These are the **genotype** of the SNP, which give us clues about a trait.

We can extend this example further by pretending the gene in the above example is involved in removing cholesterol from our blood. People with the **G variant** carry a version of the gene that processes cholesterol very quickly while people with the **A variant** have a copy of the gene that does it much slower. This means that people with the A variant are more likely to have cholesterol clogging up their arteries, putting them at an increased risk of heart disease.

Having access to this knowledge (especially for those who are homozygous minor, or AA) can empower people to take precautions against heart disease.

For this report we use SNPs that are associated with specific traits related to nutrition, fitness, and cognition. It is in no way a comprehensive list of all of the associated SNPs, and there are many more genetic variations yet to be discovered. We will periodically release updates of this report with new findings added. Check back with us later to see if we have made any recent releases.

## *Some Caveats to Consider*

Before we get started there are four points we would like to make:

### **1. Your environment plays a major role in determining if you develop a trait or not.**

While your genetic information is very valuable, it can not explain every aspect of your life. The way you interact with your environment has a profound impact on your health. Things like diet, exercise, smoking, social connectivity, and pollutants have the ability to override genetic risk factors.

### **2. Risk factors are a sum of averages.**

The risk for a trait associated with a SNP comes from the average of lots of study participants. The exact amount of risk for an individual is unknown. While some SNPs might increase risk for a trait, others can decrease it. The overall risk is a sum of these effects.

### **3. Results from studies may apply only to specific ethnic groups.**

A study involving heart defects in Korean male infants is not necessarily going to identify the same SNPs as a study involving heart defects in elderly Irish females. Some SNPs may confer risk regardless of the study cohort while others may only be relevant to particular groups.

### **4. The data we have is only a small part of your entire genetic makeup.**

It is important to remember that the genotype file you provide us with only covers a very small proportion of your entire genome (about 0.05% for a typical 23andMe file). You will carry many more genetic variations that are not reported, and these may impact your predisposition to certain traits.

The variants we look at are some of the most **well characterised and clearly understood**. Their association holds true in various environments. They are also constantly being tested, updated, and expanded upon through scientific studies. We will continue to update this report to ensure the best available information is used to help you make informed decisions.

Now, read on to learn about your genetic factors and how to improve your health!

# Heart Complications



Your heart consists of four chambers made out of muscles. When heart muscles contract the chambers become compressed, the compression of the chambers is what 'pumps' your blood. The rhythmic muscle contraction is coordinated by electrical impulses from specialized cells (more about these in the next section).

## *Atrial Fibrillation*

The rhythm of your heart is maintained by **pacemaker cells**, they ensure the muscles contract in a coordinated fashion. The contractions result in blood being pumped out of one chamber into another and then out to the body. The chambers that receive blood from the body (or lungs) are called the **atria**. Disruption to pacemaker cells rhythmic regulation of the atria can result in **atrial fibrillation**.

Atrial fibrillation is characterized by rapid and irregular beating of the atria. It results from a disruption of the electrical system of the heart, either from heart damage, high blood pressure, clogged arteries, or genetic conditions. Symptoms are; heart palpitations, fainting, lightheadedness, shortness of breath, or chest pain. It can increase the risk of heart failure, dementia, and stroke.

Genetic variation in several genes is associated with atrial fibrillation. There are SNPs in genes that affect:

- How the heart develops ([rs2106261](#) in [ZFHX3](#) and [rs10033464](#), [rs2200733](#), and [rs6843082](#) in [PITX2](#)),
- How the electrical current in the heart is created ([rs3807989](#) in [CAV1](#) and [rs13376333](#) in [KCNN3](#)).
- How blood pressure is maintained ([rs699](#) in [AGT](#)).

## Atrial SNPs

SNP	Your Genotype	Associations	Reference
rs3807989	AA	Average chance of atrial fibrillation	1
rs10033464	GG	Typical risk of atrial fibrillation	2
rs2106261	CT	Slightly increased chance of atrial fibrillation	3
rs6843082	GG	More strongly associated with atrial fibrillation	4
rs2200733	TT	More strongly associated with atrial fibrillation	2
rs699	GA	Average risk of atrial fibrillation	5
rs13376333	CC	Typical association with atrial fibrillation	6
rs5065	AA	Typical risk of atrial fibrillation	7

**Your genotypes for the SNPs show a mixed associated with atrial fibrillation.**

**This suggests you are not at high risk. Nonetheless, if you are concerned it would help to consider practicing [yoga](#) and taking the supplement [Rhodiola rosea](#) [8] [9].**

If you have any concerns we highly recommend discussing with a doctor what medicinal and surgical options are available. Go [here](#) for more details on how to treat atrial fibrillation.

You can make changes toward a healthy, active lifestyle today to reduce your risk. Make sure you get enough nutrients from food and include supplements if necessary.

## Congestive Heart Failure

Congestive heart failure occurs when the heart is unable to pump sufficiently to maintain blood flow to meet the body's needs. It commonly manifests itself as a shortness of breath, particularly with exercise. The two main types are systolic and diastolic.

**In systolic** heart failure occurs when the heart cannot contract normally. This is often due to a thickening of the heart wall (hypertrophic cardiomyopathy), reducing the ability of the chambers to contract properly.

**In diastolic** heart failure is where the heart cannot fill properly. This is due to impaired heart relaxation and abnormal filling of the chambers (ventricles receiving blood from the atria).

Both forms of heart failure have been associated with SNPs that are linked to a variety of genes. These are:

- Involved in growth and energy use of muscle cells ([rs572169](#) in [GHSR](#), [rs548097](#) in [TBC1D4](#), and [rs2234962](#) in [BAG3](#)).
- Processing fats (lipids) ([rs8192678](#) in [PPARGC1A](#)).
- Regulating blood pressure ([rs11880198](#) in [GNA15](#)).
- Protecting the heart when under stress ([rs10927875](#) in [HSPB7](#)).

## Heart Failure SNPs

SNP	Your Genotype	Associations	Reference
rs11880198	AA	Typical risk of heart failure	10
rs2234962	CT	Reduced risk of heart failure	11
rs8192678	CC	Average chance of heart failure	12
rs572169	CT	Very small increase in association with heart failure	13
rs10927875	CC	Average risk of heart failure	11
rs548097	Not Reported	No Data Available	10

Your genotypes for the SNPs in this section show a mixed associated with congestive heart failure.

This suggests you are not at high risk. Nonetheless, if you are concerned it would help to consider aerobic exercise (jogging/walking or group fitness classes are good options) as it is reported to help prevent heart failure [14]. You also could try branched-chain amino acid supplements as they have been reported to reduce heart failure complications [15].

We are unable to report on one SNP as it was not included in your genotype file.

Symptoms of heart failure include shortness of breath, excessive tiredness, and leg swelling. If you experience these then it is advisable to consult with a doctor to discuss testing and therapeutics. Detailed treatment options are reported [here](#).

## Heart Birth Defects

Genes are involved in the building and maintenance of your heart. They direct cellular growth during development resulting in a fully functioning heart. Changes to these directions can result in abnormal heart development. These are known as congenital heart defects.

Changes to the heart structure are present at birth. They are usually identified during pregnancy or soon after birth. For most people the risk will have either been identified early on or is not a major problem. Even if you identify an increased risk (based on the SNPs we review here), it may not have manifested itself in you. But it may be worth considering when thinking about having children.

The following SNPs come from a variety of genes, such as:

- Genes directly involved in the regulation of heart development (rs2277923 in NKX2-5 and rs870142 in MSX1).
- Genes affecting heart development (rs1801131 in MTHFR).
- Genes maintaining heart health(rs198388 and rs198389 in NPPB).

## Congenital SNPs

SNP	Your Genotype	Associations	Reference
rs870142	TT	Increased chance of heart disease in offspring	16
rs198389	AA	Average chance of heart disease in offspring	17
rs1801131	TT	Average association with heart disease in offspring	18
rs198388	Not Reported	No Data Available	17
rs2277923	Not Reported	No Data Available	19

Your genotypes for the SNPs in this section show a mixed association with heart defects in children.

This suggests you are not at high risk. Nonetheless, if pregnant and concerned it would help to consider taking a multivitamin with [folic acid](#) everyday as it reduces the risk of heart defects [20].

We are unable to report on two of the SNPs as they were not included in your genotype file.

Click [here](#) to learn more about congenital heart defects.

# Vascular Complications



Your vascular system is comprised of blood vessels. They transport blood away from the heart (arteries), facilitate transfer of nutrients and waste (capillaries), then carry the blood back to the heart (veins). Issues typically arise due to barriers in the vessels through which the blood flows.

Blockages can result in three general complications: coronary artery disease, stroke, and hypertension. Each of these has had SNPs identified that suggest an increase in risk.

## *Coronary Artery Disease*

Coronary artery disease is a condition in which plaque builds up and clogs the blood vessels supplying the heart. This causes blood flow to the heart to be limited and potentially leads to heart attacks (myocardial infarctions).

## Coronary SNPs

SNP	Your Genotype	Associations	Reference
rs662799	AA	Average association with coronary artery disease	<a href="#">21</a>
rs3025039	TC	Very small increase in association with coronary artery disease	<a href="#">22</a>
rs1042714	CC	Average chance of coronary artery disease	<a href="#">23</a>
rs1042713	AG	Average association with coronary artery disease	<a href="#">23</a>
rs2243250	CC	Typical association with coronary artery disease	<a href="#">24</a>
rs822396	GG	Increase in association with coronary artery disease	<a href="#">25</a>
rs17465637	CC	Increased chance of coronary artery disease	<a href="#">26</a>
rs599839	AG	Marginal increase in chance of coronary artery disease	<a href="#">26</a>
rs5065	AA	Small reduction in the risk of coronary artery disease	<a href="#">27</a>
rs1137100	AA	Average risk of coronary artery disease	<a href="#">28</a>

Your genotypes for the SNPs in this section show a mixed associated with coronary artery disease.

This suggests you are not at high risk. But, if you do experience chest pains please consider keeping active (joining walking groups or taking fitness classes) as exercise is one of the best ways of reducing risk for coronary artery disease [\[29\]](#) [\[30\]](#). You could also try supplementing with [vitamin B3 \(Niacin\)](#) as it is reported to reduce risk [\[31\]](#).

You are heterozygous (TC) for rs3025039, which can slightly lower your VEGF levels [\[32\]](#). VEGF protects blood vessels. Resveratrol increases VEGF [\[33\]](#) and is found in high concentration in berries or available as a supplement. To learn more about resveratrol read [this SelfHacked post](#).

Your genotype for rs822396 (GG) has been associated with lower levels of the fat burning gene ADIPOQ [\[34\]](#). Niacin increases ADIPOQ activity[\[35\]](#). Ensure your diet has a good source of niacin (e.g. tuna, liver, peanuts, or mushrooms) or consider taking a niacin supplement. Read [this SelfHacked post](#) to learn more.

You have the heterozygous genotype (AG) for rs599839. This SNP is linked to the gene PSRC1 and slightly increased association with coronary heart disease. Coumestrol (found in soy products, brussel sprouts, peas, and beans) has been reported to increase PSRC1 expression [\[36\]](#). You could try including more of these foods in your diet.

Early warning signs for coronary artery disease include brief, sharp chest pains (angina) and shortness of breath even without exercise. If you experience these symptoms then it is advisable to contact a medical professional.

## Stroke

Stroke is the blockage of blood flow to the brain and can lead to brain damage. It can be caused by plaque buildup (atherosclerosis) in the arteries leading to the brain.

Stroke-associated SNPs are linked to genes that:

- Process fat molecules ([rs670](#) in [APOA1](#) and [rs822396](#) in [ADIPOQ](#)).
- Improve cell communication([rs5443](#) in [GNB3](#)).
- Produce insulin-like effects ([rs6214](#) in [IGF1](#)).

## Stroke SNPs

SNP	Your Genotype	Associations	Reference
rs6214	CT	Very small increase in association with stroke	37
rs670	TC	Very slight increase in chance of stroke	38
rs5443	TC	Small increase in chance of stroke	39
rs2230806	CC	Slightly increased chance of stroke	40
rs822396	GG	Increased association with stroke	41

Your genotypes for the SNPs in this section have a mixed association with experiencing a stroke.

This places you in a slightly higher risk category than normal. It may be beneficial to consider following the Mediterranean diet (high in beneficial oils, whole grains, fruits, and vegetables and low in cholesterol and animal fat) as it reduces stroke risk [42]. You may wish to take [fisetin](#) supplements as this plant pigment is reported to reduce stroke complications [43] [44]. Foods high in fisetin include strawberries, mangoes, and apples.

Specialized treatment options include medications (blood thinners, statin, vasodilators, and ACE inhibitors) and medical procedures (carotid endarterectomy).

Your genotype for rs6214 (CT) is linked to lower IGF1 levels and a slightly increased risk of stroke [37]. Calcium and blueberries boost IGF1, decreasing your chances of having a stroke (and increasing recovery) [45] [46] [47]. Go to the SelfDecode [IGF1](#) page for more suggestions.

Warning signs for stroke include; a sudden drooping to one side of the face, arm weakness, speech difficulty, loss of coordination, and difficulty seeing in one eye. If you experience these symptoms please contact a medical professional immediately.

## Hypertension

Hypertension, also known as **high blood pressure**, occurs when blood pressure in the arteries is persistently elevated. Blood pressure is reported as a comparison between the maximum (systolic) and minimum (diastolic) pressures. For a typical adult the range is 100-140 millimeters mercury (mmHg) for systolic and 60-90 mmHg for diastolic. If your resting blood pressure is persistently over 140/90 mmHg then this may be an indication of hypertension.

Persistently elevated blood pressure can lead to complications including those mentioned above (coronary artery disease, stroke, heart failure) as well as vision loss and chronic kidney disease.

The SNPs linked to hypertension impact a number of genes with a wide variety of roles in your body. These include:

- Direct regulation of blood pressure ([rs5063](#) in [NPPA](#)).
- Processing and use of fat molecules for energy ([rs3135506](#) in [APA5](#) and [rs8192678](#) in [PPARGC1A](#)).
- Regulating iron levels in the blood ([rs1799945](#) in [HFE](#)).
- Affecting the immune system ([rs4986790](#) in [TLR4](#) and [rs3184504](#) in [SH2B3](#)).
- Connectivity and signalling between cells ([rs381815](#) in [PLEKHA7](#) and [rs553668](#) in [ADRA2A](#)).

## Hypertension SNPs

SNP	Your Genotype	Associations	Reference
rs1799945	CC	Average chance of hypertension	48
rs3184504	TT	Increased chance of hypertension	49
rs662799	AA	Average association with hypertension	50
rs3135506	GG	Average chance of hypertension	50
rs381815	TC	Small increase in association with hypertension	51
rs553668	AG	Mild increase in association with hypertension	52
rs4986790	AA	Typical association with hypertension	53
rs8192678	CC	Typical risk of hypertension	54
rs1458038	TC	Slight increase in association with hypertension	51
rs5063	CC	Typical chance of hypertension	55

Your genotypes for the SNPs in this section show a mixed association with hypertension.

This suggests you are not at high risk. Nonetheless, if you do experience persistent high blood pressure you could consider taking steps to reduce excess stress in your life [56]. This may involve removing yourself from toxic environments or you could try [meditation](#) as it strengthens your ability to find calm. Additionally, you could take [maca root powder](#) as this vegetable (grown above 11,000ft in the Peruvian Andes) reduces blood pressure [57] [58].

You are homozygous minor (TT) for rs3184504. The 'T' allele may reduce the activity of the heart-protecting gene SH2B3, increasing risk of high blood pressure [59]. Activate SH2B3 by including quercetin-rich foods (capers, red onion, berries, and spinach) in your diet or taking quercetin supplements [59]. To learn more about the benefits of quercetin read [this](#) SelfHacked article.

You are homozygous major (AA) for rs4986790, putting you at slightly greater risk of high blood pressure compared to the other genotypes (GG and GA). You may have an increased inflammatory response due to increased TLR4 activity [53]. Tea and [ginseng](#) can reduce TLR4 and prevent disease [60][61]. To view more supplements that can lower TLR4 activation please go to [this](#) SelfDecode page.

Hypertension is difficult to detect with the warning signals often being nonspecific and slowly appearing insidiously. The best approach is to measure your blood pressure over an extended period of time (months to years). If you are worried please contact a medical professional to discuss testing and potential therapeutic options. For information on measuring your blood pressure at home check out [this](#) resource.

# Conclusion

This ends your SelfDecode Cardiovascular Gene Report, we hope you found it entertaining and a little enlightening. The goals of this report were:

- To show how your genotype for different SNPs can be associated with different cardiovascular traits.
- To identify the potential cardiovascular impact of these SNPs.
- To demonstrate how having access to that information can help you make lifestyle, dietary, and supplementary decisions to live a healthier and happier life.

The following is a prioritized list of all the suggestions made throughout your report. We use your SNP data to help us identify which might be most relevant to you. Please keep in mind that we do not have information on the majority of genetic variations you carry, the environment you live in, and your lifestyle choices. As such, this list is not guaranteed to be 100% accurate. To help resolve this issue we will be releasing updated versions of our reports that include more SNPs, please check our reports page to see if there is a new report waiting for you.

1. Take [quercetin](#) supplements or eat foods high in quercetin (red onion, berries, and spinach) (See your SNPs: [Hypertension](#))
2. Take [niacin](#) supplements or eat foods high in niacin (fatty fish and mushrooms) (See your SNPs: [Coronary heart disease](#))
3. Increase the amount of [green tea](#) and [ginseng](#) in your diet (See your SNPs: [Hypertension](#))
4. Take [fisetin](#) supplements or eat foods high in fisetin (strawberries, mangoes, and apples) (See your SNPs: [Stroke](#))
5. Increase your [calcium](#) intake via dietary sources or a supplement (See your SNPs: [Stroke](#))
6. Try including more foods high in coumestrol to your diet (soybeans, brussels sprouts, and spinach) (See your SNPs: [Coronary heart disease](#))
7. Follow the mediterranean diet (See your SNPs: [Stroke](#))
8. Consider the ketogenic diet to reduce [ghrelin](#) levels (See your SNPs: [Heart failure](#))

What we present here is only a small sample of the information now available to you. We suggest you take advantage of all the resources we provide:

- Use [SelfDecode](#) to explore your genetics further.
- Check out our Gene Reports page to see which specialized SNP reports we are offering.
- Check back in with us to receive updated versions of the reports you have already purchased.
- [Get in touch](#) — let us know how this report helped you improve your health or what you would like to see in future versions.

Additionally, we wish to remind you that this is in no way a medical document, it does not suffice for diagnosis of any kind, and all actions should be taken at the reader's risk. We work hard to ensure the information is as accurate as possible but we do not take responsibility for mistakes. As such, it is at the reader's own discretion as to how they use it. Any major concerns should be discussed with a professional in the appropriate field (doctor, psychologist, nutritionist, etc.) before taking action.

Finally, the science behind personalized genetics is rapidly growing and making new discoveries. The field is constantly producing new findings and challenging existing ideas. As such, SelfDecode does not guarantee any of the information in this report to be 100% accurate. We also reserve the right to update the report with new discoveries, and remove outdated ones, as we see fit. Alerts regarding new versions of this report will be sent so you can access the latest scientific findings.

## Jane Smith

This information was acquired from SelfDecode. It does not and should not be used to treat, diagnose or cure any conditions, but is rather for informational and educational purposes alone. The body is very complex and you should not be making any medical decisions based on the information contained in this site and should speak to your doctor before taking any actions that pertain to your health or any condition you may have. The information should not be viewed as accurate, and it's especially not accurate to make any medical decisions from. Rather, a person should look at individual SNPs and make their own assessments. You have given permission to a Third party to extract this information from Selfdecode. With this permission you hold Selfdecode and Third Party harmless of the findings and accuracy.

### Lifestyle C -

- Endurance Status (B -)
- Sleep Quality (B -)
- Immune Response (C +)
- Risk Of Muscle Injury (D -) COL5A1,IGF2,MMP3
- Depression Status (D +) BDNF,GSK3B,MAOA
- Fatigue Status (B -)
- Response To Stress (C -) GSK3B,IL1B
- Weight Status (No Intervention) (C -) PEMT,VEGFA
- Early To Bed, Early To Rise (A +)
- Response To Exercise (D -) CCL2,SLC6A2
- Response To Sleep Deprivation (D -) DRD2

### Diet C -

- Triglyceride Status (A +)
- Monounsaturated Fat (C -) ADIPOQ
- Saturated Fat (C +)
- Lactose Tolerance (D -) MCM6
- Response To Carbohydrates (C +)
- Response To Protein (C +)
- Omega 3'S (D -) PEMT
- Sugar Intake (C +)
- Cholesterol Status (D -) PEMT,FADS2

## Nutrition C -

- **Vitamins A Status (C -)** BCO1
- **Vitamin D Status**
- **Sodium Status (C +)**
- **Selenium Status (C +)**
- **Iron Status (C -)** TF
- **Vitamin B Status (D -)** FUT2
- **Vitamin K Status (A -)**
- **Choline Status (D -)** PEMT

## Response To Toxins B -

- **Response To Allergens (C -)** HLA-DRA
- **Response To Toxins (B +)**

## Methylation A +

- **Methylation (A +)**

## Aging B -

- **Greying Hair (C +)**
- **Hearing Loss (A -)**
- **Eyesight Status (A +)**
- **Cognitive Decline (D -)** PPAGC1A
- **Skin Quality (C +)**
- **Bone Density Status (A +)**
- **Lifespan (C +)**

## Disease Risk D +

- Risk Of Schizophrenia (C +)
- Risk Of Autoimmune Disease (D -) VDR,HLA-DRBL,JAK2,PTPN22
- Risk Of Adhd (B +)
- Risk Of Lung Disease (B -)
- Risk Of Colonic Disease (D +) FUT2,HTR2A,JAK2,VEGFA
- Risk Of Cancer (C +)
- Risk Of Autism (C +)
- Risk Of Parkinson's Disease (D -) VDR,CHRNA5,PON1
- Risk Of Liver Disease (F) FUT2,PEMT,PPAGC1A,VEGFA
- Risk Of Alzheimer's Disease (D -) PEMT,SNAP25,NGR
- Risk Of Heart Disease (A +)
- Risk Of Muscle Injury (D -) COL5A1,IGF2
- Obesity Status (C +)
- Risk Of Diabetes (C -) ADIPOQ,ABCA1,VEGFA,SIRT1

## Jane Smith

This information was acquired from SelfDecode. It does not and should not be used to treat, diagnose or cure any conditions, but is rather for informational and educational purposes alone. The body is very complex and you should not be making any medical decisions based on the information contained in this site and should speak to your doctor before taking any actions that pertain to your health or any condition you may have. The information should not be viewed as accurate, and it's especially not accurate to make any medical decisions from. Rather, a person should look at individual SNPs and make their own assessments. You have given permission to a Third party to extract this information from Selfdecode. With this permission you hold Selfdecode and Third Party harmless of the findings and accuracy.

### Lifestyle C -

- Endurance Status (B -)
- Sleep Quality (B -)
- Immune Response (C +)
- Risk Of Muscle Injury (D -) COL5A1,IGF2,MMP3
- Depression Status (D +) BDNF,GSK3B,MAOA
- Fatigue Status (B -)
- Response To Stress (C -) GSK3B,IL1B
- Weight Status (No Intervention) (C -) PEMT,VEGFA
- Early To Bed, Early To Rise (A +)
- Response To Exercise (D -) CCL2,SLC6A2
- Response To Sleep Deprivation (D -) DRD2

### Diet C -

- Triglyceride Status (A +)
- Monounsaturated Fat (C -) ADIPOQ
- Saturated Fat (C +)
- Lactose Tolerance (D -) MCM6
- Response To Carbohydrates (C +)
- Response To Protein (C +)
- Omega 3'S (D -) PEMT
- Sugar Intake (C +)
- Cholesterol Status (D -) PEMT,FADS2

## Nutrition C -

- **Vitamins A Status (C -)** BCO1
- **Vitamin D Status**
- **Sodium Status (C +)**
- **Selenium Status (C +)**
- **Iron Status (C -)** TF
- **Vitamin B Status (D -)** FUT2
- **Vitamin K Status (A -)**
- **Choline Status (D -)** PEMT

## Response To Toxins B -

- **Response To Allergens (C -)** HLA-DRA
- **Response To Toxins (B +)**

## Methylation A +

- **Methylation (A +)**

## Aging B -

- **Greying Hair (C +)**
- **Hearing Loss (A -)**
- **Eyesight Status (A +)**
- **Cognitive Decline (D -)** PPAGC1A
- **Skin Quality (C +)**
- **Bone Density Status (A +)**
- **Lifespan (C +)**

## Disease Risk D +

- Risk Of Schizophrenia (C +)
- Risk Of Autoimmune Disease (D -) VDR,HLA-DRBL,JAK2,PTPN22
- Risk Of Adhd (B +)
- Risk Of Lung Disease (B -)
- Risk Of Colonic Disease (D +) FUT2,HTR2A,JAK2,VEGFA
- Risk Of Cancer (C +)
- Risk Of Autism (C +)
- Risk Of Parkinson's Disease (D -) VDR,CHRNA5,PON1
- Risk Of Liver Disease (F) FUT2,PEMT,PPAGC1A,VEGFA
- Risk Of Alzheimer's Disease (D -) PEMT,SNAP25,NGR
- Risk Of Heart Disease (A +)
- Risk Of Muscle Injury (D -) COL5A1,IGF2
- Obesity Status (C +)
- Risk Of Diabetes (C -) ADIPOQ,ABCA1,VEGFA,SIRT1