

Hypertrophic Cardiomyopathy

Disease Report

REPORT CATEGORY —



HEART & BLOOD
VESSELS

Sample Client

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DISCLAIMER

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

Personal information

NAME

Sample Client

SEX AT BIRTH

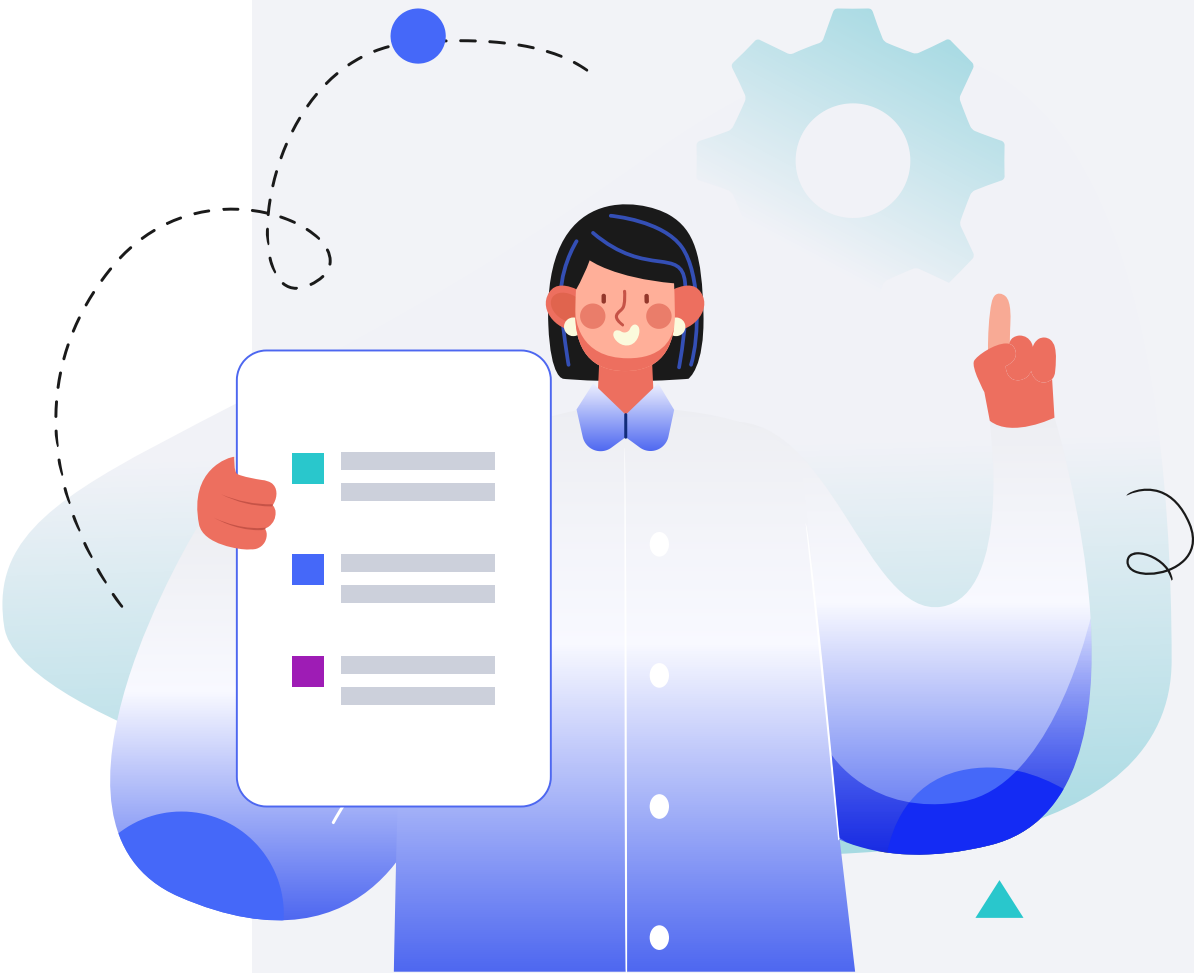
Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg



How this works

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



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



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

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



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

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

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



Genotype color info:

AA

You don't have any risk alleles

AA

You have 1 risk allele

AA

You have 2 risk alleles

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

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

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

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



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

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



Impact

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

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

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

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

Recommendation Evidence

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

Genotype-specific Evidence

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

Some things to keep in mind:

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

Introduction

Hypertrophic cardiomyopathy (HCM) is a condition where the heart muscle becomes abnormally thick, making it harder for the heart to pump blood. This thickening can occur in various parts of the heart but is most commonly found in the walls of the ventricles, the main pumping chambers.

HCM can be asymptomatic or cause a range of symptoms, which can vary in severity. Common symptoms include shortness of breath, chest pain, palpitations, dizziness, and fainting, especially during physical exertion. In some cases, it can lead to more serious complications like arrhythmias, heart failure, or sudden cardiac death.

Treatment for HCM focuses on managing symptoms and preventing complications. Medications such as beta-blockers or calcium channel blockers can help relax the heart muscle, reduce symptoms, and improve blood flow. In more severe cases, surgical options like septal myectomy (removal of a portion of the thickened heart muscle) or alcohol septal ablation (using alcohol to destroy the thickened tissue) may be recommended.

Implantable cardioverter-defibrillators (ICDs) are sometimes used to prevent sudden cardiac death in high-risk individuals. Lifestyle changes, including avoiding intense physical activity and managing other heart conditions, are also crucial components of treatment.

Contributing Factors

Hypertrophic cardiomyopathy is often inherited. Approximately 60-70% of individuals with HCM have a family history of the condition. These genetic mutations affect the proteins in the heart muscle, leading to abnormal thickening. More than 1,500 mutations in at least 11 different genes have been associated with HCM, most of which are related to the sarcomere, the contractile unit of the heart muscle.

While genetics play a crucial role, other factors can contribute to the development and progression of HCM. High blood pressure, aging, and other cardiovascular conditions can exacerbate the thickening of the heart muscle. Additionally, lifestyle factors such as excessive alcohol consumption, lack of exercise, and poor diet can increase the risk of developing HCM or worsen existing symptoms. It is important for individuals with a family history of HCM to undergo regular medical check-ups and genetic counseling to assess their risk and take preventive measures.

Understanding the causes and risk factors of HCM is essential for effective management and prevention. By recognizing the genetic components and other contributing factors, individuals can take proactive steps to monitor their heart health, seek timely medical advice, and adopt lifestyle changes to mitigate the impact of this condition. Early diagnosis and personalized treatment plans are key to improving the quality of life for those affected by hypertrophic cardiomyopathy.



TYPICAL LIKELIHOOD

Typical likelihood of hypertrophic cardiomyopathy based on 19,408 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
FLNC	rs2291569	GG
TTN	rs2042995	TT
SVIL	rs2182400	GG
CLCNKA	rs10927875	TC
SMARCB1	rs2186370	AG
CDKN1A	rs4713999	AG
MTSS1	rs12541595	TG
NMB	rs1051168	TG
XPC	rs6807275	GA
PRKCA	rs9892651	CT
CCDC149	rs2244757	CC
DNAH17	rs78212518	CC
TBX5	rs149932627	TT
CCND1	rs145355401	TT
RALY	rs140035275	CC
OR2F2	rs73462438	AA
RAG2	rs77698332	AA
FAM120B	rs149215314	GG
THSD7A	rs74676849	AA
PARD3B	rs4487073	TT
BAG3	rs2234962	CC
FDFT1	rs13265989	AA
FHOD3	rs2303510	AA

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

Your Recommendations

Your recommendations are prioritized according to the likelihood of it having an impact for you based on your genetics, along with the amount of scientific evidence supporting the recommendation.

You'll likely find common healthy recommendations at the top of the list because they are often the most impactful and most researched.

DOSAGE		DOSAGE	
1	Aerobic Exercise (Cardio)	1 hour	
2	Yoga	30 minutes	
3	Walking	30 minutes	
4	Exercise At Least One Hour a Day	1 hour	
5	Limit Salt Intake		
6	Sleep for 7+ Hours		
7	Coenzyme Q10 (CoQ10)	100 mg	

1



Aerobic Exercise (Cardio)

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Engage in at least 150 minutes of moderate-intensity aerobic exercise or 75 minutes of vigorous-intensity activity each week. Distribute this time over at least 3 days per week, avoiding consecutive days of vigorous exercise to allow for recovery.

TYPICAL STARTING DOSE
1 hour

Description

Engaging in regular aerobic exercise, such as running, swimming, or cycling, offers numerous health benefits, including improved cardiovascular fitness, weight management, and mood enhancement. It supports overall physical and mental well-being while reducing the risk of chronic diseases.

Cardio, short for cardiovascular exercise, is any type of physical activity that temporarily increases your heart rate. Examples include **running, cycling, swimming, and brisk walking**.

Regular cardio exercise has many benefits for your overall health. It can help lower your risk of heart disease and diabetes, support weight loss, and improve your mood and energy levels. To get the most out of cardio, try to do it for at **least 30 minutes, 3-5 times a week**.

Interval training is a type of cardio that combines periods of high-intensity training with brief rest periods.

How it helps

Aerobic exercise can improve the heart's ability to pump blood and help reduce symptoms by strengthening the heart muscle. A systematic review of 41 studies found that exercise used as an add-on to conventional therapy may improve VO2 max (by 4.33 mL/kg/min) without causing contraindications in people with hypertrophic cardiomyopathy [\[R\]](#).

In contrast, inactivity may further increase the risk of cardiovascular mortality in people with this condition [\[R\]](#).

Experts recommend practicing exercise and asking a doctor about the safest type and amount of exercise that improves aerobic capacity without causing undue strain on the heart. Examples of suitable exercises include light cardio such as [\[R\]](#):

- Walking
- Stationary cycling
- Swimming

2



Yoga

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Practice yoga for at least 20 to 30 minutes a day, most days of the week. Choose a style that matches your fitness level and goals, and consider attending a class or using online resources to guide your practice.

TYPICAL STARTING DOSE

30 minutes

Description

Yoga is a mind-body practice that combines physical postures, breathing exercises, and meditation. It enhances flexibility, strength, and mental well-being and is used for stress reduction, relaxation, and overall health improvement.

[Yoga](#) combines breathing, stretching, and relaxation techniques. Practicing yoga may help [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Reduce [stress](#)
- Improve fitness
- Lower blood pressure and heart rate
- Manage pain

How it helps

A systematic review of 41 studies found that exercise used as an add-on to conventional therapy may improve VO2 max (by 4.33 mL/kg/min) without causing contraindications in people with hypertrophic cardiomyopathy [\[R\]](#).

In contrast, inactivity may further increase the risk of cardiovascular mortality in people with this condition [\[R\]](#).

Experts recommend practicing exercise and asking a doctor about the safest type and amount of exercise that improves aerobic capacity without causing undue strain on the heart. Examples of suitable exercises include [\[R\]](#):

- Walking
- Stationary cycling
- Swimming
- Yoga
- Pilates
- Tai chi

Yoga can enhance physical flexibility and strength, reduce stress, and improve heart health through its calming effects.

3



Walking

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Incorporate at least 30 minutes of brisk walking into your daily routine, aiming for a minimum of five days a week. This can be done in one continuous session or broken into shorter periods, such as three 10-minute walks throughout the day.

TYPICAL STARTING DOSE

30 minutes

Description

Walking is a low-impact form of exercise that can contribute to cardiovascular fitness, weight management, and improved overall health. It is used to support physical activity goals, enhance mood, and promote better cardiovascular health.

How it helps

A systematic review of 41 studies found that exercise used as an add-on to conventional therapy may improve VO2 max (by 4.33 mL/kg/min) without causing contraindications in people with hypertrophic cardiomyopathy [\[R\]](#).

In contrast, inactivity may further increase the risk of cardiovascular mortality in people with this condition [\[R\]](#).

Experts recommend practicing exercise and asking a doctor about the safest type and amount of exercise that improves aerobic capacity without causing undue strain on the heart. Examples of suitable exercises include [\[R\]](#):

- Walking
- Stationary cycling
- Swimming
- Yoga
- Pilates
- Tai chi

Regular walking can improve cardiovascular fitness, help in weight management, and reduce the risk of further heart complications.

4

Exercise At Least One Hour a Day

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Dedicate a minimum of 60 minutes to moderate-intensity activities such as brisk walking, swimming, or cycling. Do this most days of the week, aiming for at least 5 days to optimize benefits.

TYPICAL STARTING DOSE

1 hour

Description

[Exercise](#) can do wonders for your health. It can help you lose weight, improve your heart health, boost your mood, and more [\[R\]](#).

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

Try to get at least **60 minutes of moderate physical activity on most days**, including walking. **Getting a mix of cardio (min 150 min/day) and strength training (min 2 times a week) may be optimal.**

How it helps

Consistent daily exercise helps improve cardiovascular function and can alleviate symptoms associated with cardiomyopathy. A systematic review of 41 studies found that exercise used as an add-on to conventional therapy may improve VO2 max (by 4.33 mL/kg/min) without causing contraindications in people with hypertrophic cardiomyopathy [\[R\]](#).

In contrast, inactivity may further increase the risk of cardiovascular mortality in people with this condition [\[R\]](#).

Experts recommend practicing exercise and asking a doctor about the safest type and amount of exercise that improves aerobic capacity without causing undue strain on the heart. Examples of suitable exercises include [\[R\]](#):

- Walking
- Stationary cycling
- Swimming
- Yoga
- Pilates
- Tai chi

5



Limit Salt Intake

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Reduce your daily salt intake to less than 2,300 milligrams (mg), equivalent to about one teaspoon of table salt. This includes all salt consumed, whether added during cooking, at the table, or present in processed and ready-to-eat foods.

Description

Limiting salt intake involves lowering the amount of sodium in the diet, which can help lower blood pressure and reduce the risk of heart disease. It often involves avoiding processed and other high-sodium foods such as cured meats, soups and sauces, and various pickled foods.

Your body needs a certain amount of sodium to function. For example, it helps support your blood pressure. This sodium usually comes from [salt](#). However, eating too much salt is linked to an increased risk of stroke and heart disease [\[R\]](#) [\[R\]](#).

Foods higher in salt include [\[R\]](#) [\[R\]](#) [\[R\]](#):

- Prepared soups, broths, gravies, and sauces
- Fermented or pickled foods (such as pickles, soy sauce, olives, and [capers](#))
- Cured meats and sausages (such as bacon, salt pork, and salami)
- Cheese (such as Roquefort and Parmesan)

Try to limit your daily intake to 1 teaspoon of salt (2,400 mg of sodium) [\[R\]](#).

How it helps

Reducing salt intake may help protect against heart disease [\[R\]](#) [\[R\]](#).

For instance, the DASH diet limits the amount of salt and saturated fat in your diet. **Experts recommend limiting these to help prevent heart disease** [\[R\]](#) [\[R\]](#) [\[R\]](#) [\[R\]](#) [\[R\]](#).

Note that just limiting the salt in your diet might not be enough to help [\[R\]](#) [\[R\]](#).

6



Sleep for 7+ Hours

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Ensure you allocate enough time in your schedule to achieve a minimum of 7 hours of sleep each night. This might involve going to bed earlier or adjusting your evening routine to promote relaxation and make it easier to fall asleep.

Description

Optimizing sleep involves adopting healthy sleep habits and creating a sleep-conducive environment to ensure restorative and sufficient sleep duration. It supports cognitive function, mood stability, and overall physical health. Most experts recommend getting **at least 7 hours of good-quality sleep each night**.

[Sleep](#) supports your body and mind [\[R, R\]](#). More precisely, sleep helps:

- Support brain health [\[R, R\]](#)
- Maintain a healthy weight and appetite [\[R, R, R\]](#)
- Regulate blood pressure [\[R, R\]](#)
- Balance blood sugar [\[R, R\]](#)

Ways to sleep better include [\[R\]](#):

- Reducing your bright light exposure (screen time) in the evenings
- Sticking to a regular sleep schedule
- Avoiding hunger or large meals before bed
- Avoiding nicotine, caffeine, and alcohol before bed
- Maintaining a sleep area that’s cool, dark, and quiet

How it helps

Short sleep (less than 6-7 hours/night) and **long sleep (more than 8-9 hours/night)** are both linked to higher odds of heart disease [\[R, R, R, R\]](#).

In fact, your risk of the condition may increase by **7-11% for every hour of sleep you lose**. It may also increase by **5-7% for every hour of excess sleep**. Short sleep duration may also be causally associated with heart disease [\[R, R, R\]](#).

Poor sleep contributes to many risk factors for heart disease, including [\[R, R, R\]](#):

- High blood pressure
- High blood sugar
- Obesity

Experts recommend aiming for 7-9 hours of sleep per night, maintaining regular sleep schedules, and addressing sleep difficulties with a health professional [\[R\]](#).

7



Coenzyme Q10 (CoQ10)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a 100 mg Coenzyme Q10 (CoQ10) supplement once daily with a meal that contains fat for better absorption.

TYPICAL STARTING DOSE

100 mg

Description

Coenzyme Q10 (CoQ10) is a naturally occurring antioxidant that plays a crucial role in cellular energy production. It is often taken as a supplement to support heart health, improve energy levels, and provide antioxidant protection, especially for individuals with certain medical conditions or as they age.

[Coenzyme Q10](#) (CoQ10) is a compound that helps enzymes work better. By doing so, CoQ10 helps improve [R](#), [R](#), [R](#), [R](#):

- Energy levels
- Antioxidant protection
- Heart health
- Muscle strength
- Blood sugar control

The amount of CoQ10 made by your body decreases as you get older. Luckily, you can also get it from food or supplements. Good sources of CoQ10 include [R](#), [R](#):

- Organ meats
- Fatty fish
- Whole grains

How it helps

In 2 non-placebo-controlled trials of 95 patients with hypertrophic cardiomyopathy, supplementation with coenzyme Q10 (200 mg/day) improved septal and posterior wall thickness, walking capacity, diastolic dysfunction, left ventricular outflow tract gradient, and quality of life [R](#), [R](#).

CoQ10 helps improve heart function and energy production in heart cells, which can support the management of cardiomyopathy.

Next Steps

Remember, your genes only tell one important part of your health story!

Now that you've seen your DNA-based results for this health topic, let's take a look at other contributing factors.

Your lab results

Your lab results are impacted by the combined effect of your genes, environment and lifestyle.

Lab tests will give you the best picture of your current health status, while your genes provide insight into your health predispositions and which recommendations are best for you.

