

# Aortic Stenosis

## Disease Report

REPORT CATEGORY —



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

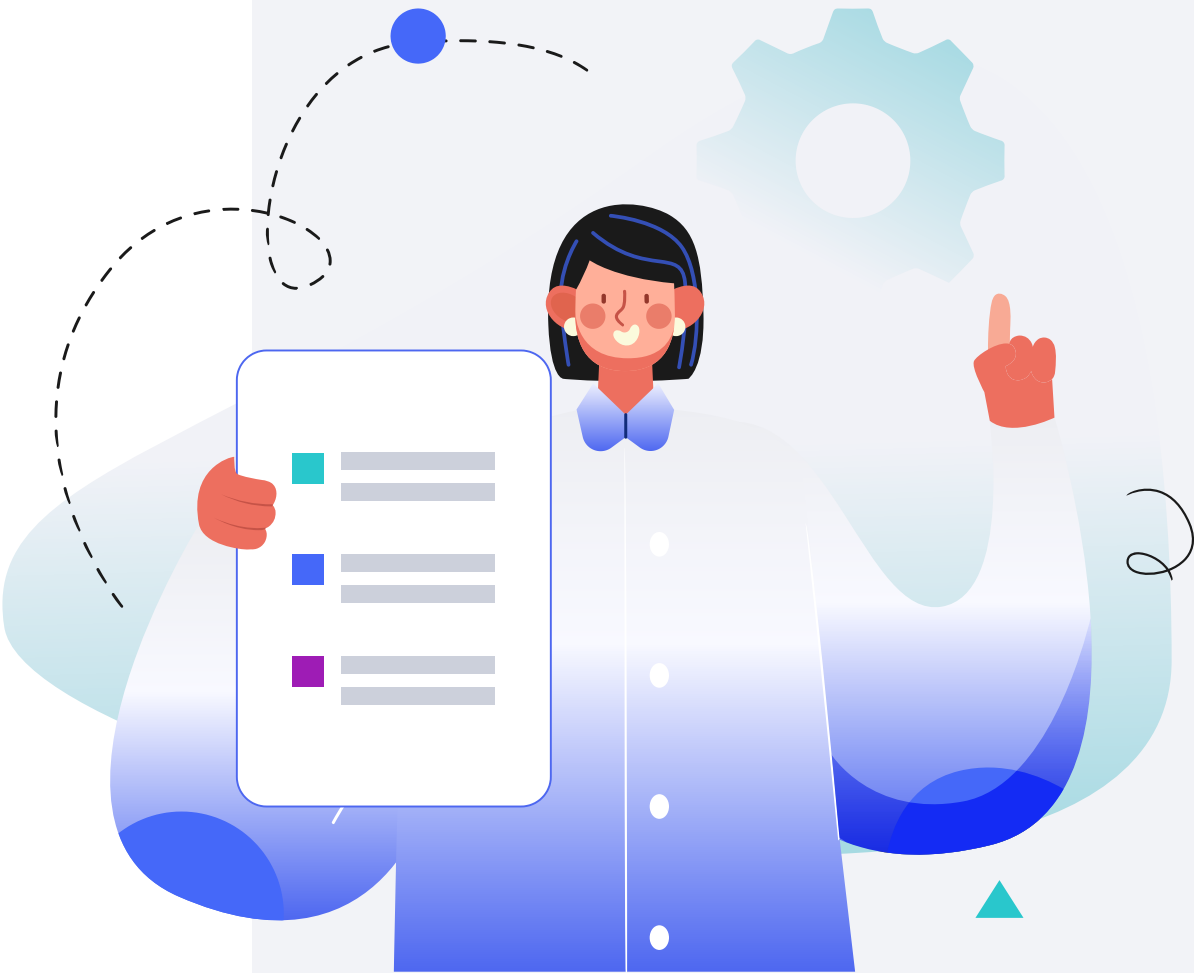
Male

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

**Aortic valve stenosis (often shortened to “aortic stenosis”)** is a narrowing of the aortic valve opening. The aortic valve allows blood to flow from the heart's left ventricle into the aorta and to the body.

When stenosis occurs, the valve doesn't open properly. This hinders blood flow from your heart into your aorta and onward to the rest of your body. Over time, this can weaken the heart muscle and lead to heart failure or other complications.

Common manifestations of aortic valve stenosis include:

- Chest pain or tightness with activity.
- Shortness of breath, especially with exertion.
- Fatigue, especially during increased activity.
- Heart palpitations.
- Fainting.
- Heart murmur.
- Swollen ankles and feet.

Early diagnosis and appropriate treatment can help preserve heart function and provide a better quality of life.

# Risk Factors and Genetics

About **50%** of the differences in aortic valve stenosis may be due to **genetics** [R].

Factors that might increase the risk of developing aortic valve stenosis include:

- Advanced age.
- A history of infections that can affect the heart.
- Chronic kidney disease.
- Radiation therapy to the chest.
- **Genetics**

Certain genetic factors and conditions increase the risk of developing aortic valve stenosis. For example, being born with a bicuspid aortic valve (which has two valve flaps instead of the normal three).

Additionally, certain genetic conditions, such as familial hypercholesterolemia, can lead to earlier and more severe valve calcification and stenosis.



TYPICAL LIKELIHOOD

## Typical likelihood of having aortic stenosis based on 1,670 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

| GENE     | SNP         | GENOTYPE |
|----------|-------------|----------|
| TACSTD2  | rs170828    | GG       |
| HSD17B12 | rs7937669   | TT       |
| DENND4C  | rs10124723  | GG       |
| ELAVL3   | rs10406522  | CC       |
| ARHGAP24 | rs17010961  | AT       |
| TPO      | rs12465180  | GC       |
| GLIPR1   | rs11180610  | TC       |
| BLK      | rs11250135  | TT       |
| PRRX1    | rs2150026   | TC       |
| /        | rs1830321   | TC       |
| ACTR2    | rs6715876   | TC       |
| RNMT     | rs12605367  | CT       |
| TREML4   | rs7748777   | GA       |
| /        | rs7593336   | GA       |
| NAV1     | rs665770    | GA       |
| /        | rs2246363   | AG       |
| FLNB     | rs1522388   | TC       |
| LPA      | rs10455872  | AA       |
| EMX2     | rs12264978  | CC       |
| ISG20    | rs4932408   | GG       |
| /        | rs113277183 | GG       |
| RND3     | rs114314058 | GG       |
| /        | rs114795211 | GG       |
| STT3B    | rs73056108  | CC       |
| PALMD    | rs7543039   | CC       |
| FBRSL1   | rs117206641 | CC       |
| PALMD    | rs7543130   | CC       |
| STEAP1B  | rs2069832   | GG       |
| ALPL     | rs12141569  | TT       |
| PALMD    | rs11166276  | CC       |
| MECOM    | rs2421649   | AA       |
| ME3      | rs11234705  | GG       |

| GENE    | SNP        | GENOTYPE |
|---------|------------|----------|
| STEAP1B | rs13311155 | CC       |

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      | Balance And Mobility Training | 30 minutes |  |
| 3      | Avoid Strenuous Activity      |            |  |
| 4      | Stress Management Therapy     | 1 hour     |  |

1



Aerobic Exercise (Cardio)

IMPACT

0 / 5

EVIDENCE

0 / 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 helps enhance cardiovascular health by improving heart function and circulation. Moderate intensity aerobic exercise can improve endurance and overall cardiovascular fitness, which is beneficial for individuals with aortic stenosis.

2



Balance And Mobility Training

IMPACT

0 / 5

EVIDENCE

0 / 5

## How to implement

Incorporate balance and mobility exercises into your routine three to four times per week. Each session should last approximately 30 minutes and include activities such as standing on one foot, walking heel to toe, and tai chi or yoga. Start with simple exercises and gradually increase difficulty as your balance improves.

TYPICAL STARTING DOSE

30 minutes

## Description

Balance and mobility training exercises, such as yoga or tai chi, can improve stability and reduce the risk of falls, particularly among older adults. These exercises enhance overall physical function.

## How it helps

Balance and mobility training can improve physical stability and reduce the risk of falls. Enhanced balance and mobility may help maintain independence and physical conditioning in people with aortic stenosis.

3



Avoid Strenuous Activity

IMPACT

0 / 5

EVIDENCE

0 / 5

## How to implement

Refrain from participating in high-intensity physical activities such as running, heavy weightlifting, and high-impact sports. Opt instead for low-impact exercises like walking, swimming, or yoga. It's important to listen to your body's signals and rest as needed, avoiding these strenuous activities until advised otherwise by a health professional.

## Description

Avoiding strenuous physical activity in certain medical conditions or during illness can help prevent injury and promote better recovery. It allows the body to conserve energy and supports the healing process.

Strenuous activity is physical activity that requires a lot of effort. Exercise done at 70-85% of a person’s heart rate is considered strenuous. Examples include [\[R\]](#):

- Running, cycling, or swimming at high speed
- Running or hiking uphill
- Jumping rope
- Single tennis
- Sports that involve a lot of running (soccer, basketball, hockey, etc.)

On the other hand, strenuous daily activities include [\[R\]](#):

- Lifting and carrying heavy objects
- Gardening with heavy digging
- Shoveling snow
- Fast dancing

## How it helps

Avoiding strenuous activity helps reduce the risk of overexertion and potential complications due to increased cardiac workload. This is particularly important for individuals with aortic stenosis who may have limited capacity for intense physical activity.

4



Stress Management Therapy

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Engage in stress management therapy sessions, such as cognitive-behavioral therapy (CBT), for at least 1 hour per week over a course of 8 to 12 weeks. Techniques can include mindfulness, deep breathing exercises, and identifying stressors to develop coping strategies.

TYPICAL STARTING DOSE

1 hour

Description

Stress management therapy refers to various techniques and approaches aimed at reducing and coping with stress. It can improve mental and physical well-being by helping individuals better manage the effects of stress on their health.

How it helps

Stress management therapy can lower blood pressure and reduce strain on the heart, which may help alleviate symptoms and slow the progression of aortic stenosis.

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

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.

