

Emphysema

Disease Report

REPORT CATEGORY —



Sample Client

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Personal information

NAME

Sample Client

SEX AT BIRTH

Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg

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.



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

Emphysema is a chronic respiratory condition categorized under chronic obstructive pulmonary disease (COPD), primarily characterized by difficulty in breathing due to over-inflation of the alveoli, the air sacs in the lungs. This over-inflation results from the breakdown of the walls of the alveoli, reducing the surface area for gas exchange, and causing air to be trapped in the lungs on exhalation.

This impaired gas exchange leads to decreased oxygen in the blood and makes it harder for the lungs to eliminate carbon dioxide, thereby causing shortness of breath, especially during physical activity.

Causes and Treatment

The most common cause of emphysema is long-term exposure to airborne irritants, including tobacco smoke, air pollution, chemical fumes, and dust. As the disease progresses, patients may experience a range of symptoms such as chronic cough, wheezing, fatigue, and chest tightness. Emphysema develops gradually over many years and currently has no cure.

However, treatments such as bronchodilators, steroids, and oxygen therapy can help manage symptoms and improve the quality of life. In extreme cases, lung surgery or a lung transplant might be considered.



MORE LIKELY

More likely to have emphysema based on 618,453 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
/	rs7977375	TT
C14ORF180	rs8016091	GA
YIPF5	rs10065677	TC
/	rs7905537	CA
MBL2	rs1348350	AA
TMEM72	rs10900114	TT
TMEM72	rs7911712	GG
/	rs2448276	CC
SERPINA1	rs4905179	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	Avoid Sugary Foods & Drinks		
4	Dietary Omega-3 Fatty Acids		
5	N-acetylcysteine (NAC)	1200 mg	
6	Avoid Processed High Phosphate Foods		

1



Aerobic Exercise (Cardio)

IMPACT4 / 5

EVIDENCE4 / 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

For people with emphysema and other types of COPD, aerobic exercise may [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Reduce fatigue
- Boost lung function
- Improve the quality of life

Exercise may help by training and strengthening the breathing muscles [\[R\]](#), [\[R\]](#).

Please note: *If you have emphysema, consult your doctor before taking part in intense exercise* [\[R\]](#).

2



Yoga

IMPACT

3 / 5

EVIDENCE

2 / 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

Experts say that relaxation techniques may help with COPD. They may help [R, R, R, R, R, R, R]:

- Reduce the need for emergency care
- Reduce shortness of breath
- Improve sleep quality and mood

Helpful techniques include meditative movement, such as yoga or tai chi [R, R, R, R].

Relaxation techniques may help by reducing stress and sensitivity to pain. They may also help improve breathing [R, R].

3



Avoid Sugary Foods & Drinks

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

To avoid sugary foods, eliminate or significantly reduce consumption of foods and beverages high in added sugars such as sodas, candies, baked goods, and sugary cereals from your diet. Instead, opt for natural sugar sources like fruits. Aim to do this daily for ongoing health benefits.

Description

High-sugar foods like baked goods, sweets, and sugary drinks, can spike your blood sugar levels. Consuming a lot of these types of foods can contribute to health issues like diabetes, obesity, insomnia, and heart disease.

High-sugar foods and refined carbs have a high glycemic index (GI). This means they tend to spike your blood sugar levels. They include [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Sugary drinks
- Baked goods
- Sweets
- White bread
- White rice
- Pasta

Eating a lot of sugary foods can contribute to:

- Diabetes [\[R\]](#), [\[R\]](#), [\[R\]](#)
- Weight gain and obesity [\[R\]](#), [\[R\]](#)
- Insomnia [\[R\]](#)
- Heart disease [\[R\]](#)

You may also want to avoid processed sugars and sugary drinks. They may have a role in increasing IL-1B [\[R\]](#), [\[R\]](#).

How it helps

Consuming high levels of sugar can lead to inflammation and exacerbate respiratory conditions like emphysema. Reducing sugary foods can help manage symptoms by preventing spikes in blood sugar that can increase inflammation and worsen lung function.

4



Dietary Omega-3 Fatty Acids

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate foods high in omega-3 fatty acids into your diet daily. This includes eating fish such as salmon, mackerel, and sardines at least twice a week. Alternatively, include a tablespoon of flaxseed oil or chia seeds in your daily diet.

Description

[Omega-3 fatty acids](#) are some of the healthiest fats we can eat. They help lower inflammation and protect the heart, brain, and eyes. Our bodies produce less omega-3s than we need for optimal health, so it's important to get enough through food or supplements [\[R\]](#), [\[R\]](#), [\[R\]](#).

There are three major types of omega-3s: ALA, EPA, and DHA. **EPA and DHA are vital for mental and heart health** [\[R\]](#), [\[R\]](#), [\[R\]](#).

Fatty fish are rich in EPA and DHA. They include [\[R\]](#):

- Salmon
- Tuna
- Herring
- Sardines

For optimal health, try to get at least **two servings of fatty fish per week**. Fish oil supplements are available for those who don't eat fish regularly [\[R\]](#).

How it helps

Omega-3 fatty acids can reduce inflammation in the body, which is beneficial for people with emphysema, a condition characterized by lung inflammation and damage. Incorporating omega-3-rich foods into the diet can help improve lung function and lessen emphysema symptoms.

5



N-acetylcysteine (NAC)

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 600 mg of N-Acetylcysteine (NAC) supplement daily with water. It can be taken at any time of the day, but try to take it at the same time each day for best results.

TYPICAL STARTING DOSE

1200 mg

Description

NAC is a supplement that contains a form of the amino acid cysteine, a protein building block that your body uses to make the antioxidant glutathione. It is used for its potential antioxidant properties and its ability to support lung, gut, and mental health.

[N-acetylcysteine](#) (NAC) is converted to cysteine in the body. Cysteine is a protein building block (amino acid) that helps make the antioxidant glutathione [\[R\]](#).

People take NAC to potentially support [\[R\]](#), [\[R\]](#):

- Mental health
- Ovarian health and pregnancy outcomes
- Lung health
- Gut health

How it helps

N-acetylcysteine (NAC) has been studied for its effectiveness in patients with chronic obstructive pulmonary disease (COPD), which includes emphysema. It works as an antioxidant and expectorant, helping to thin mucus in the airways, making it easier to cough up. This can help reduce the frequency of exacerbations in people with COPD/emphysema.

6



Avoid Processed High Phosphate Foods

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

To follow this recommendation, remove or significantly reduce processed foods such as sodas, packaged snacks, processed meats, and canned foods from your daily diet. Instead, opt for fresh fruits, vegetables, whole grains, and lean proteins. It's helpful to read nutrition labels, aiming to keep your daily phosphate intake below 700 mg if possible.

Description

Processed foods often have high levels of phosphate. These include fast foods and soda. Extra phosphate can make bones brittle and damage your blood vessels over time. So, it's healthier to choose fresh foods over processed ones.

How it helps

Processed foods high in phosphate can lead to an imbalance in mineral levels, contributing to muscle problems and weakening, which can exacerbate the symptoms of emphysema. Avoiding these foods can help maintain better overall health and lung function.

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.

