SelfDecode™

ARDS

DNA Health Report

REPORT CATEGORY

RESPIRATORY HEALTH

Sample Client

Report date: 15 January 2026

Powered by omicsedge

Table of Contents

Personal information

NAME

Sample Client

SEX AT BIRTH

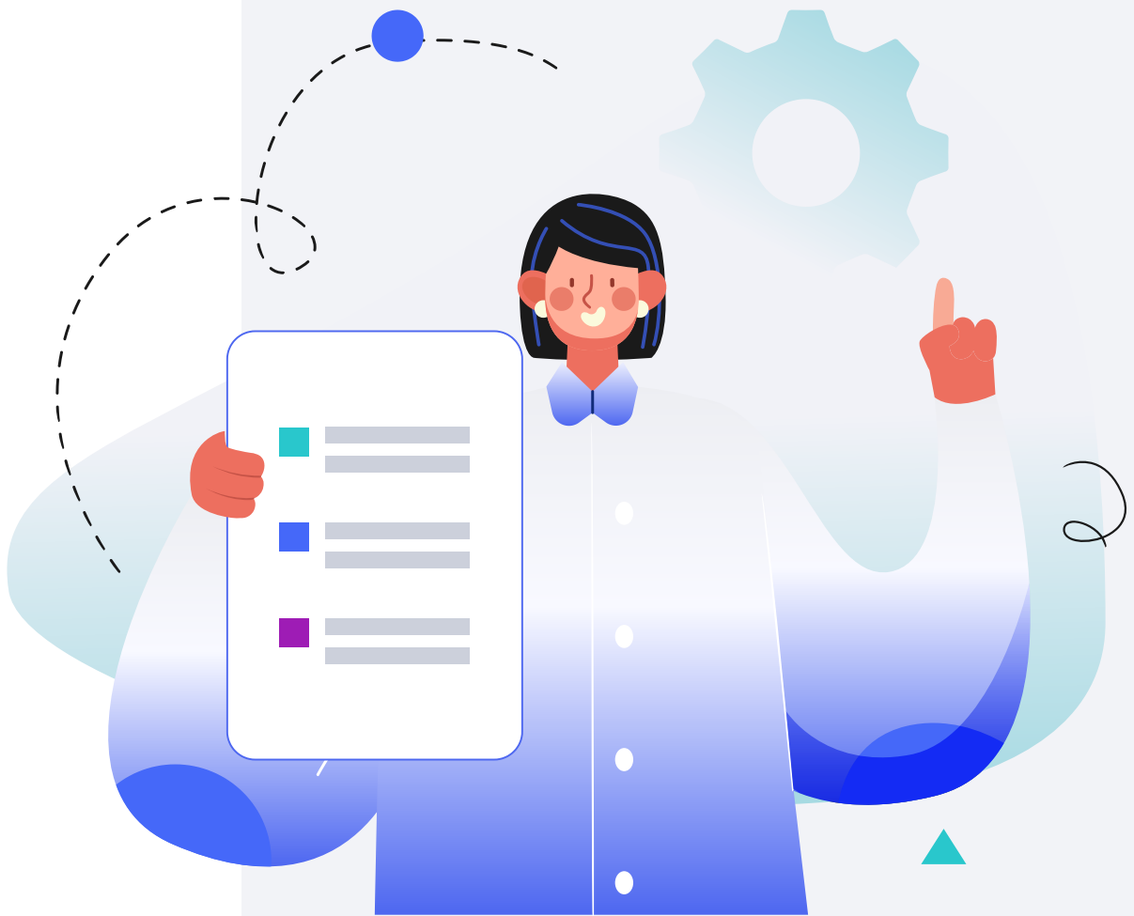
Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg

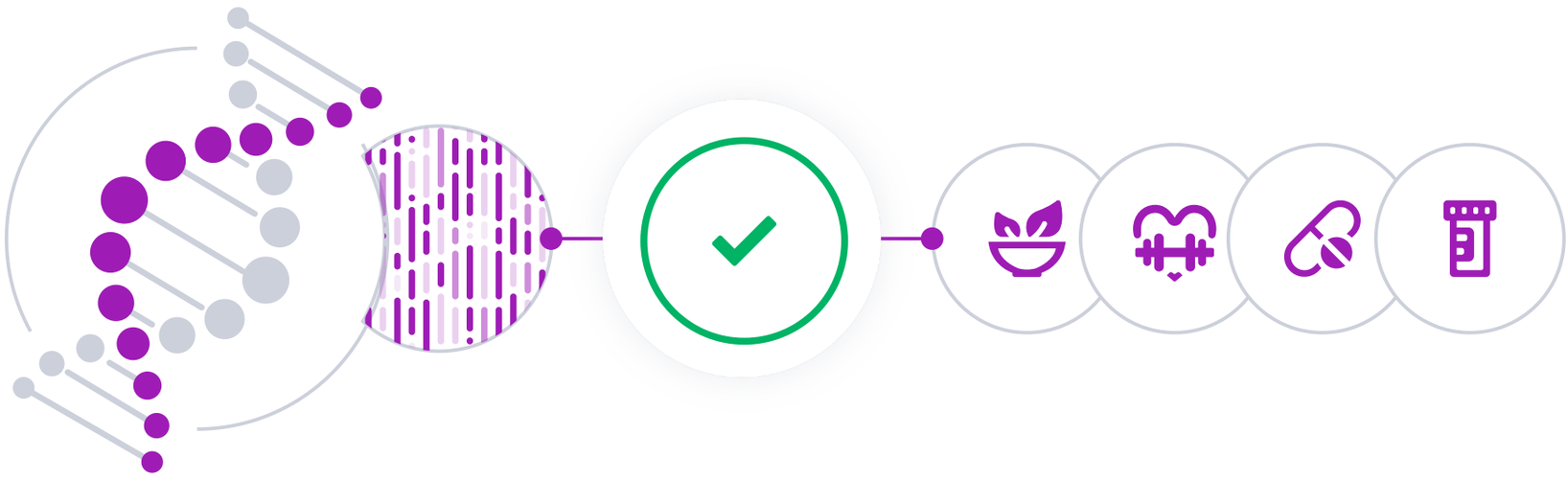


DISCLAIMER

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

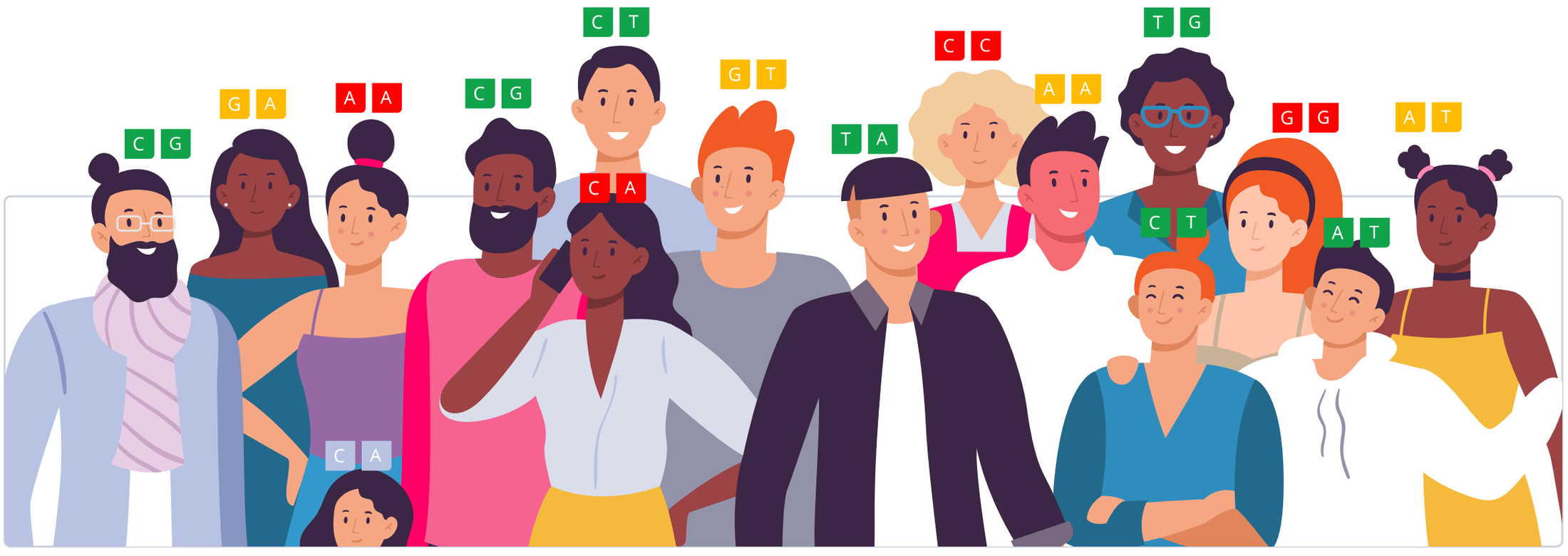
Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.



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.

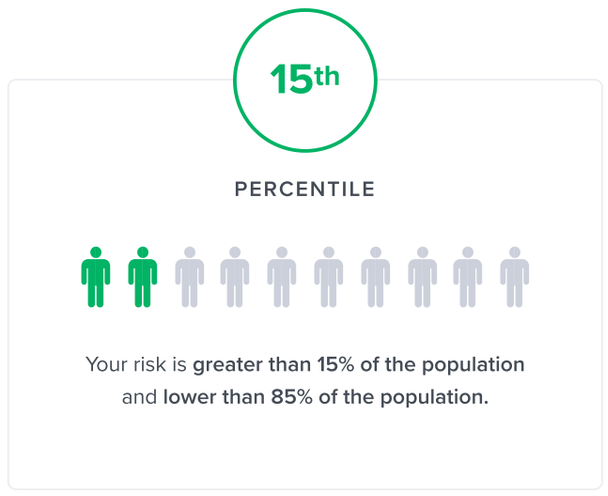
Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



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.

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

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



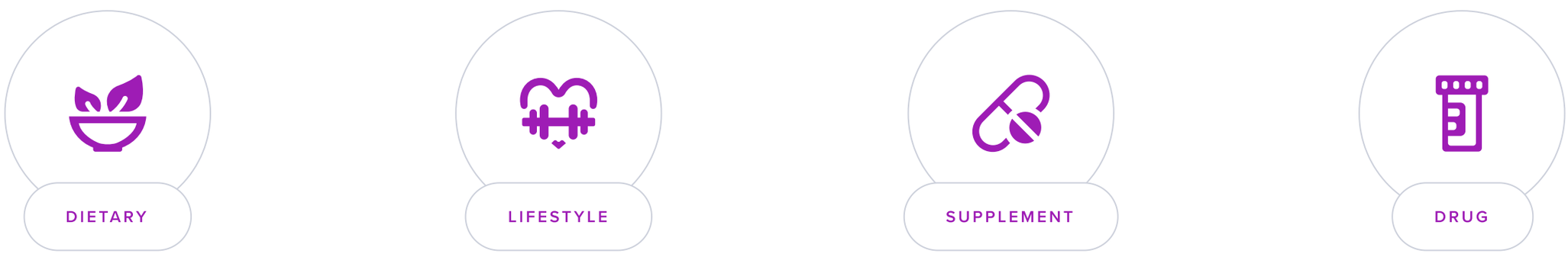
Genotype color info: AA You don't have any risk alleles | AA You have 1 risk allele | AA You have 2 risk alleles

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, afew 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

Acute respiratory distress syndrome (ARDS) is a progressive, life-threatening condition that causes low blood oxygen levels. During ARDS, the lungs no longer work properly because they get filled with fluid leaking from the blood vessels. This prevents the lungs from taking up sufficient air, leading to insufficient oxygen supply into the bloodstream and throughout the body [R, R, R].

ARDS may develop very quickly or over the course of several days. The first symptom is shortness of breath, which can be accompanied by [R, R]:

- Rapid and labored breathing
- Low blood oxygen
- Unusual sounds in the lungs when breathing
- Low blood pressure
- Confusion
- Extreme tiredness

People with ARDS often need to go on a ventilator, and more than half of them die. Additionally, ARDS may cause complications such as [R, R, R]:

- Organ failure from insufficient oxygen supply
- High pressure, tissue scarring, and collapse in the lungs
- Complications from hospitalization such as blood clots, muscle weakness, stress ulcers, infections, and depression

ARDS is usually caused by major diseases or injuries, and often occurs in critically ill people who are already hospitalized for these conditions. The most common underlying causes of ARDS include:

- Widespread infections of the bloodstream (sepsis) [R]
- Severe cases of respiratory diseases such as the flu, pneumonia, or COVID-19 [R, R, R]
- Major injuries to the lungs or the brain region that controls breathing [R, R]
- Breathing in high amounts of toxic fumes [R, R, R, R]
- Other conditions such as pancreatitis [R], burns [R], and massive blood transfusions [R]

Genetics of ARDS

Multiple variants in genes related to the immune and inflammatory response have been associated with ARDS risk.

The *TNF* gene encodes a protein called tumor necrosis factor-alpha (TNF-alpha or cachexin). TNF-alpha plays a central role in the immune response and inflammation, and it has been implicated in a wide variety of inflammatory disorders [R].

The **rs1800629** polymorphism (also known as *TNF* -308) is one of the most researched SNPs in the *TNF* gene. **The 'A' allele is associated with 6-7 times higher levels of TNF-alpha.** In line with this link to higher inflammation, this allele has been associated with higher rates of ARDS, increased risk of sepsis, and lower survival rates [R, R, R, R, R, R, R].

A Brazilian study of 1,100 pediatric patients found that carriers of another *TNF* variant, the 'A' allele of **rs1800630**, may have a greater risk of ARDS compared to the 'C' allele [R].

The *IL4* gene encodes IL-4, a cytokine that is mostly anti-inflammatory and best known for stimulating the Th2 arm of the immune system [R].

The 'T' allele of **rs2243250** increases IL4 production by up to 3-fold and has been associated with a decreased risk of ARDS [R, R].

The *IL8 (CXCL8)* gene codes for IL-8, a potent inflammatory cytokine that acts as a signal to attract white blood cells at sites of infection, especially in the lungs [R, R].

The 'A' allele of **rs4073** increases IL8 expression in white blood cells. This variant has been associated with an increased risk of ARDS, acute liver injury, and need for mechanical ventilation in critically ill patients [R, R, R, R, R, R].

The *IL10* gene encodes IL-10, a cytokine with a complex relationship with inflammation. In fact, most of the time, IL-10 is anti-inflammatory and suppresses the activity of Th1

TYPICAL LIKELIHOOD

Typical likelihood of ARDS based on 26 genetic variants we looked at

34th

PERCENTILE

Your risk is **greater than 34% of the population** and **lower than 66% of the population.**

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
SLC22A5	rs2243250	CC
PAQR8	rs2275913	GG
EGF	rs4444903	GG
SELPLG	rs61729674	GG
SELPLG	rs7300972	TT
IL19	rs1800896	CT
BCO2	rs1946518	TG
MBL2	rs1800450	CT
XYLB	rs7744	GA
SELPLG	rs2228315	TC
FAAH	rs324420	CA
CSK	rs2606345	AC
NAMPT	rs9770242	AA
MAP3K1	rs832582	AA
NFE2L2	rs6721961	GG
PF4V1	rs4073	TT
VEGFA	rs3025039	CC
PI3	rs2664581	AA
ANGPT2	rs2515475	CC
ANGPT2	rs2442630	AA
ANGPT2	rs2442608	TT
AGER	rs2070600	CC
AHR	rs2066853	GG
IL13	rs20541	GG

cells, Th2 cells, neutrophils, macrophages, and natural killer cells [R, R, R].

The 'C' allele of **rs1800896** increases IL-10 levels. In line with this, the 'CC' genotype has been associated with a decreased risk and severity of ARDS and cytokine storm [R, R, R, R].

The *IL13* gene codes for interleukin 13 (IL-13), a cytokine that belongs to type 2 or "humoral" immunity. Along with IL-4, it fights pathogens and other outside threats that don't enter our cells but stay in the fluids (humor=fluid). IL-13 also stimulates the release of IgE from immune system cells [R, R, R].

The most widely investigated IL13 variant is **rs20541**. Its minor 'A' allele has been linked to elevated IL-13 and IgE levels. A Russian study of 430 critically ill patients found that those with this allele had a nearly 2-fold lower likelihood of developing ARDS [R].

The *IL17A* gene codes for an inflammatory cytokine, IL-17 (interleukin-17). Activated Th17 cells produce IL-17 to enhance the inflammatory response and recruit white blood cells such as neutrophils and monocytes [R, R].

The 'A' allele of **rs2275913** may lower IL17A levels. This allele has been associated with a reduced ARDS rates and and 30-day mortality [R, R].

The *IL18* gene encodes IL-18, an inflammatory cytokine that stimulates interferon gamma (IFN-y) production and activates inflammatory pathways that help fight off infections (including Th1 and natural killer cells) [R].

The main *IL18* SNP is **rs1946518**, whose minor T allele results in a reduced production of the IL-18 cytokine. This allele has been associated with a decreased incidence of the milder, preliminary form of ARDS (ALI) and shorter ICU stays [R, R, R, R].

The *VEGF* gene encodes a protein that plays a key role in the formation and growth of new blood vessels from their precursor cells during embryo development [R, R, R].

The minor 'T' allele of **rs3025039** causes lower blood levels of the VEGF protein. This allele has been associated with an increased incidence of ARDS and risk of dying from this complication [R, R, R, R].

GENE	SNP	GENOTYPE
TNF	rs1800630	CC
TNF	rs1800629	GG

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

The *EGF* gene encodes a protein called epidermal growth factor (EGF). EGF pathways promote cell growth, maturation, function, and survival [R, R].

The main *EGF* polymorphism is **rs4444903**. Its major allele 'G' results in increased levels of the EGF protein and has been associated with an increased risk of ARDS. In contrast, the minor 'A' allele has been associated with a reduced risk of ARDS and need for mechanical ventilation [R, R, R, R].

The *ANGPT2* gene encodes angiopoietin 2, a growth factor implicated in the direct control of inflammation-related signaling pathways, as well as in the formation of blood vessesl during embryo development and tumor cell growth [R].

Three variants that presumably increase *ANGPT2* activity, 'C' at **rs2442608**, 'G' at **rs2442630**, and 'T' at **rs2515475**, have been associated with an increased risk of ARDS [R, R].

The *MBL2* gene encodes a protein complex called *mannose-binding lectin* (MBL) recognizes and binds to sugar molecules on the surface of bacteria, viruses, and yeast. This binding acts as the "on" switch for heightened immune activity [R].

The 'T' allele of **rs1800450** reduces MBL levels. People with two copies of this allele may be at increased risk of getting ARDS, requiring mechanical ventilation, and developing organ damage and sepsis [R, R, R, R, R].

The *MYD88* gene (*myeloid differentiation primary response 88*) codes for a protein with central roles in the immune response and inflammation. MyD88 enables the communication between toll-like receptors (TLR) and NF-κB, the master regulator of inflammation [R].

The 'G' allele of **rs7744** has been associated with lower ARDS rates and 2-month mortality, as well as with a better response to anti-TNF drug treatment [R, R].

The *SELPLG* gene encodes **PSGL-1**, a protein found on the surface of white blood cells that plays an important role in the body's inflammatory response. When blood vessels become inflamed, they express a protein called P-selectin.

The PSGL-1 protein can attach to P-selectin, which leads to a buildup of white blood cells in the inflamed area [R].

According to a study of nearly 1,400 individuals with African or European ancestry, variants that increase the expression of SELPLG may lead to greater inflammation and a higher risk of ARDS. One example of such variants is the 'T' allele of **rs2228315**. In contrast, the same study associated the 'A' allele at **rs61729674** and the 'C' allele at **rs7300972** with a decreased risk [R].

The *FAAH* gene helps create an enzyme called fatty acid amide hydrolase involved in the breakdown of several types of fatty acids, endocannabinoids (compounds that activate the cannabinoid system), and oleamide (a sleep-inducing compound) [R].

Research suggests that a specific variant of the *FAAH* gene may be associated with lung health. More specifically the 'A' allele of **rs324420** appears to increase the risk of developing ARDS [R].

The *PI3* gene encodes a protein called peptidase inhibitor 3 or **elafin**. Technically speaking, the *PI3* gene first produces a compound called trappin-2, which is later transformed into elafin. Both trappin-2 and elafin are a part of the body's natural defenses against invaders in the skin, lining of the gut, and inside of the lungs [R, R, R].

The 'C' allele of **rs2664581**, presumably encoding a less efficient form of the protein, has been associated with an increased risk of ARDS [R, R].

The *MAP3K1* gene codes for an enzyme with versatile roles in the immune system, reproductive health, cancer protection, and more [R, R].

The 'G' allele of **rs832582** with increased ARDS severity, with carriers more often needing mechanical ventilation and having increased mortality [R].

The *AhR* gene encodes the aryl hydrocarbon receptor, a master-switch that turns other genes on or off. It's important for neutralizing toxins and also plays a role in immunity and inflammation [R, R].

A group of Russian scientists has found that in pneumonia, the carries of the 'A' allele for the *AHR* SNP **rs2066853** had a higher risk of developing ARDS [R].

The *AGER* gene encodes the receptor for advanced glycation end products—a protein called RAGE. RAGE is a type of immunoglobulin, an immune protein that binds to other proteins and activates the immune response [R].

The rare 'T' allele of **rs2070600** has been associated with higher rates of ARDS and more severe respiratory infection [R].

CYP1A1 belongs to a group of enzymes called CYP enzymes. CYP enzymes help eliminate toxins from the human body. Unlike other CYP enzymes which are mostly found in the liver, CYP1A1 is mainly found in the lungs [R, R, R].

In a study of 750 people, those with pneumonia who had the 'AA' genotype of **rs2606345** had a higher risk of ARDS [R].

The *NFE2L2* encodes a protein called NRF2, which plays an important role in detoxification and antioxidant defense. NRF2 does not have antioxidant activity itself. Instead, it activates other genes, such as *UGT* and *NQO1*, which encode for proteins that help clear out toxins and protect against oxidative stress [R, R].

The 'T' allele at **rs6721961**, leading to lower levels of the NRF2 protein has been associated with greater susceptibility to ARDS and lung injury [R, R, R, R].

The *NAMPT* gene encodes an enzyme called 'nicotinamide phosphoribosyltransferase' that catalyzes the formation of the NAD+ cofactor and is involved in many important biological processes, including metabolism, stress response and aging [R].

The 'C' allele of the **rs9770242** polymorphism has been associated with a slightly increased risk of ARDS [R, R].

Your Recommendations

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

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

		DOSAGE
1	Aerobic Exercise (Cardio)	1 hour
2	Maintain Optimal Vitamin D Levels	1000 iu
3	N-acetylcysteine (NAC)	1200 mg
4	D-Mannose	2 g
5	Vitamin C	2000 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

In people recovering from ARDS, pulmonary rehabilitation programs with aerobic exercise may improve functional (exercise and lung) capacity and quality of life [R, R].

2

Maintain Optimal Vitamin D Levels

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Check your vitamin D levels, they should ideally be in the 30-66 ng/mL range. If your levels are lower than that, take a vitamin D supplement, 1000-4000 IU daily, to reach an optimal range.

TYPICAL STARTING DOSE

1000 iu

Description

Vitamin D, often referred to as the "sunshine vitamin," can be synthesized by the skin when exposed to sunlight, as well as being found in fish, eggs, and fortified milk. It helps regulate calcium absorption, promoting strong bones and a healthy immune system. Vitamin D deficiency can lead to conditions like rickets in children and osteoporosis in adults.

Your body needs vitamin D for strong bones. Vitamin D also plays a role in [R]:

- Mood
- Immunity
- Heart health
- Blood sugar control

Sunlight is our main source of vitamin D. Experts recommend getting at least **5-15 minutes of midday sun, 2-3 times per week**. People with darker skin and those living at high latitudes may need longer periods of sun exposure [R, R].

Foods like fish, eggs, and fortified milk provide small amounts of vitamin D. **People lacking vitamin D should consider taking a supplement** [R].

How it helps

A study of 476 patients with ARDS associated low vitamin D levels with increased duration of mechanical ventilation and 90-day mortality [R].

3

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) may help people with ARDS due to its antioxidant effects. NAC can reduce inflammation in the lungs by neutralizing harmful free radicals. This might help improve lung function and oxygenation in individuals with ARDS.

4

D-Mannose

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Take 2 grams of D-mannose powder dissolved in water, once daily for recurrent urinary tract infections. For active infections, take 1.5 grams twice daily for 3 days, then once daily for the next 10 days.

TYPICAL STARTING DOSE

2 g

Description

D-mannose is a natural sugar often used as a supplement to support urinary tract health. It may help prevent and alleviate urinary tract infections.

D-mannose is a natural sugar similar to glucose. People take D-mannose as a supplement to help prevent or manage UTIs [R, R].

How it helps

Genetically higher mannose levels may be causally associated with a decreased risk of ARDS and improved survival [R].

Please note: *There is no evidence from controlled clinical trials to support this recommendation. It is included based on uncontrolled clinical trials, animal or cell studies, or non-scientific criteria. Please take this recommendation with a grain of salt until more research is available*.

5

Vitamin C

IMPACT 0 / 5

EVIDENCE 0 / 5

How to implement

Take 500-2000 mg of vitamin C supplement daily. It can be taken at any time of the day, with or without food, according to personal preference or tolerance.

TYPICAL STARTING DOSE

2000 mg

Description

Vitamin C is an essential nutrient. This means that our bodies can't produce it on their own, so we have to get it from food or supplements [R].

Foods rich in Vitamin C include: [R]

- Citrus Fruits
- Peppers
- Brussel sprouts
- Kiwi
- Broccoli
- Tomato
- Cantaloupe
- Cauliflower
- Spinach

Vitamin C has antioxidant properties. It supports immunity, heart health, and wound healing [R, R].

Vitamin C deficiency is called *scurvy.* In the past, many sailors suffered from it [R].

How it helps

Vitamin C may reduce inflammation and oxidative stress in patients with ARDS. It helps by directly scavenging free radicals and by regenerating other antioxidants, potentially reducing lung damage.

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.

WBC	6.92 x10^3/mm3	2 · 4 · 6.5 · 11 · 40	9 Nov 2025
Ferritin	102.2 ng/mL	30 · 50 · 150 · 380	9 Nov 2025
Platelet Count	215 x10^3/mm3	30 · 150 · 200 · 270 · 450 · 999	9 Nov 2025
hs-CRP	1.6 mg/L	0 · 0.5 · 3 · 100 · 500	9 Nov 2025