IS ALPHA-1 (AATD) LEAVING YOU OPEN TO RISK?

Alpha-1 affects people differently. Understanding your Alpha-1 letters (genetic variant) and numbers (alpha-1 protein levels) can help you gain a clearer picture of your own risk.

ALPHA-1 IS AN INHERITED CONDITION THAT AFFECTS YOUR LUNGS

If you have Alpha-1, your body may not make enough of a protein called alpha-1 antitrypsin (AAT), or alpha-1 protein, that helps protect the lungs. Without enough alpha-1 protein, the risk of lung problems can potentially increase over time.

How Alpha-1 affects your lungs

Your letters (genotype)

Your genotype determines how much alpha-1 protein your body makes. For instance, those with the MM genotype make normal levels of alpha-1 protein and do not have Alpha-1.

Your numbers (alpha-1 protein levels)

Individuals with certain genotypes that aren't MM can make below-normal alpha-1 protein levels.

Increased Alpha-1 risk

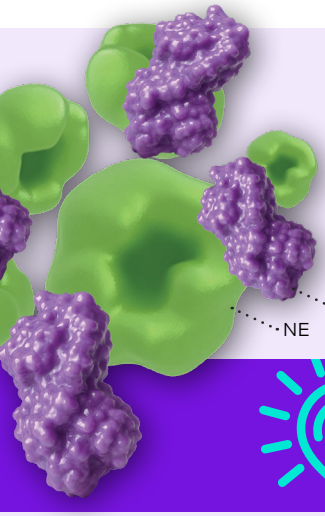
When alpha-1 protein levels are below the normal range, your Alpha-1 risk may increase over time.

Impact on lung health

Living with below-normal alpha-1 protein levels can make daily tasks and physical activities more challenging.

These two are connected. Alpha-1 protein levels differ by genotype and knowing one can help you understand the other.

Your environment matters too. Smoking, air pollution, and dust exposure can increase your risk even more.



How alpha-1 protein helps protect your lungs

The **alpha-1 protein** acts like a shield, helping to protect lung tissue from damage caused by **neutrophil elastase (NE)**.

When there is not enough alpha-1 protein, NE that becomes too active can damage healthy lung tissue, making breathing more difficult and everyday activities harder.

Alpha-1 protein helps control inflammation throughout your body—not just your lungs. In some people, alpha-1 protein builds up in the liver, which may lead to liver disease.

Knowing your potential risks can help you understand your personal protection.

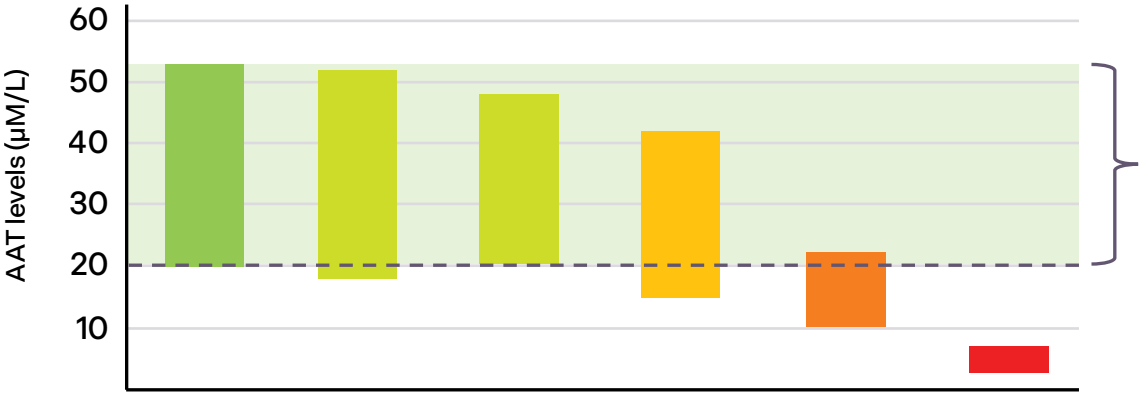
KNOWING YOUR RISK CAN HELP YOU STAY IN CONTROL OF YOUR LUNG HEALTH

The lower your alpha-1 protein levels, the higher your potential risk for lung damage, including emphysema

How much alpha-1 protein your body makes depends on your genotype:

- **M** — Makes normal amount of working alpha-1 protein
- **Z** — Makes very little working alpha-1 protein
- **S** — Makes some working alpha-1 protein, but less than normal
- **NULL** — Does not make any working alpha-1 protein

Range of plasma alpha-1 protein (AAT) levels based on allele combination



Genotype	MM	MS	SS	MZ	SZ	ZZ
Risk of emphysema	No increase	No increase	No increase	Possible mild increase	Increased risk (20-50%)	High risk (80-100%)

Normal AAT levels (associated with **MM** genotype): **20-53 µM** (micromoles)

20-53 µM = 100-220 mg/dL

If your alpha-1 protein levels are below normal, talk to your doctor about your Alpha-1 risk and steps you can take to support your lung health.

Sign up to learn more about your Alpha-1 risk at RethinkAlpha1Protection.com

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