SelfDecode™

UGT2A1 (Cognition)

Gene Report

REPORT CATEGORIES

NUTRITION

IMMUNITY & INFECTIONS

DETOX

Sample Client

Report date: 15 January 2026

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Personal information

NAME

Sample Client

SEX AT BIRTH

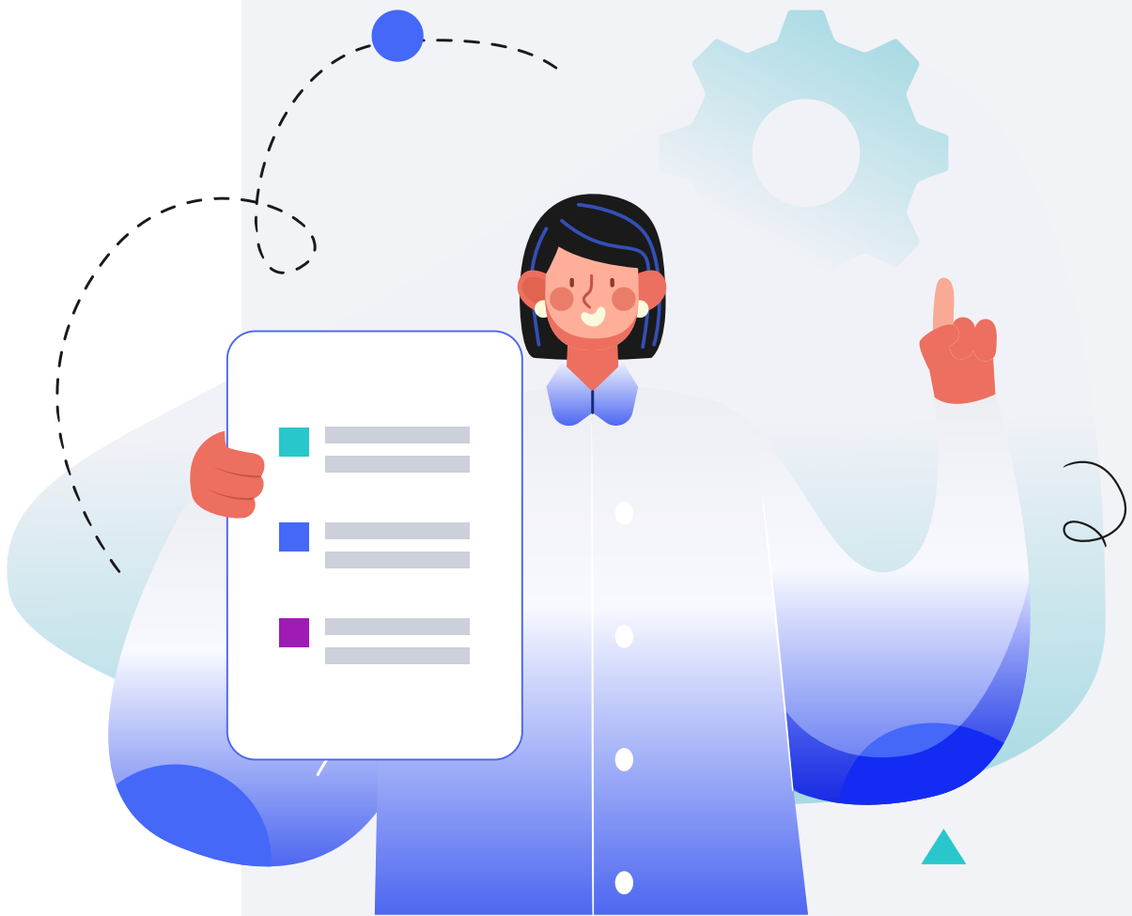
Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg

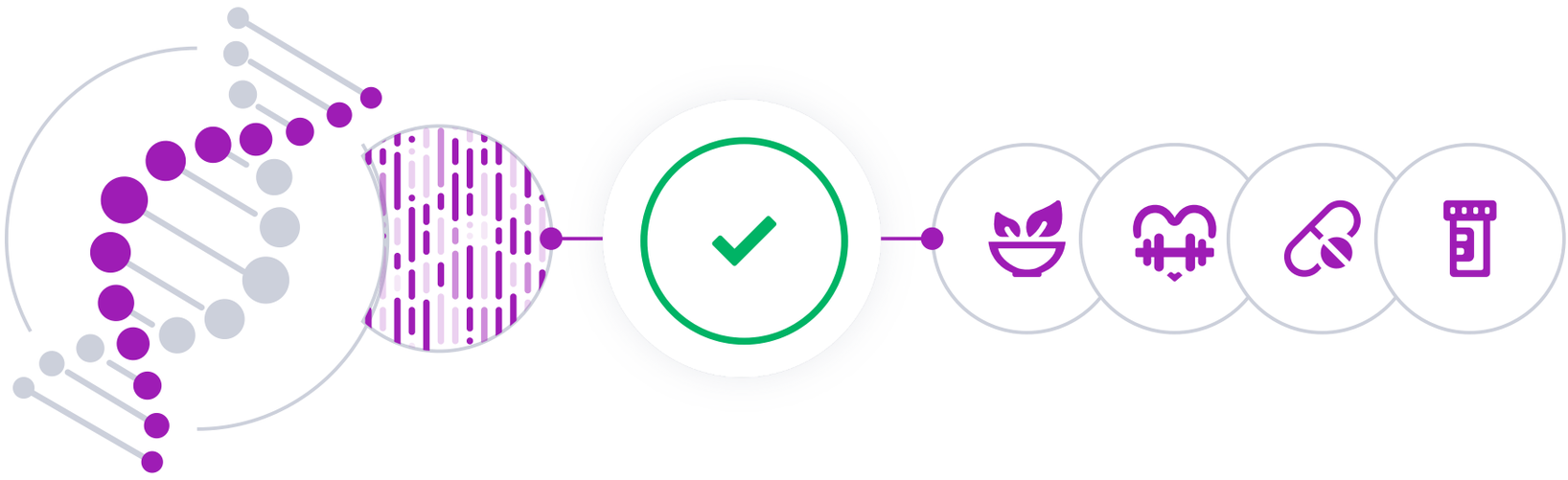


DISCLAIMER

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

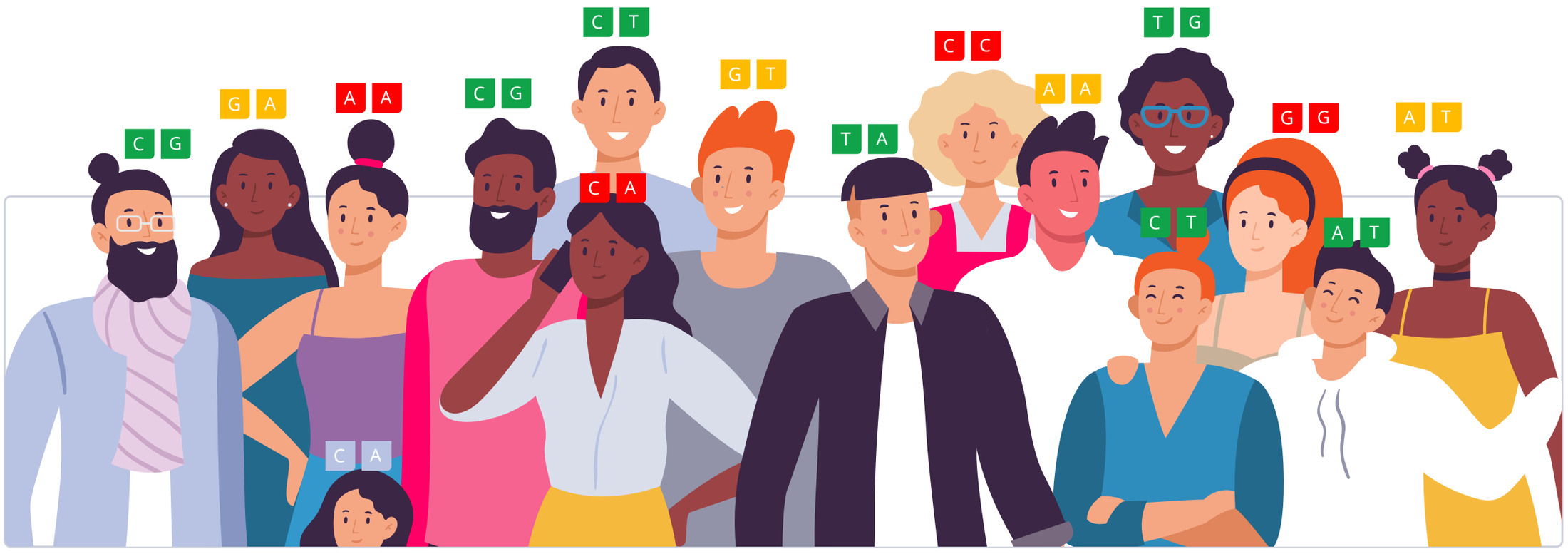
Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.



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.

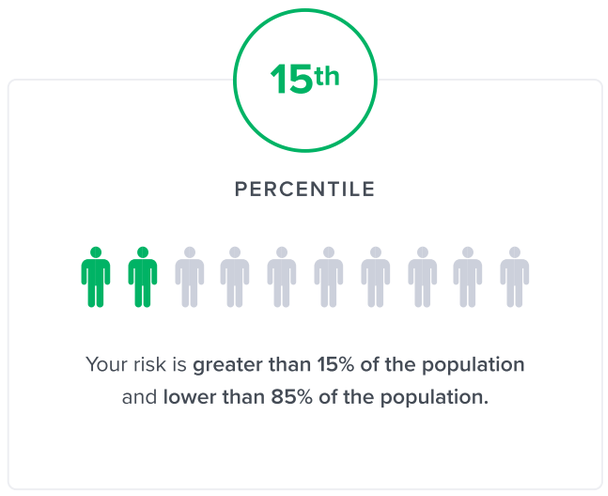
Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



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.

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.



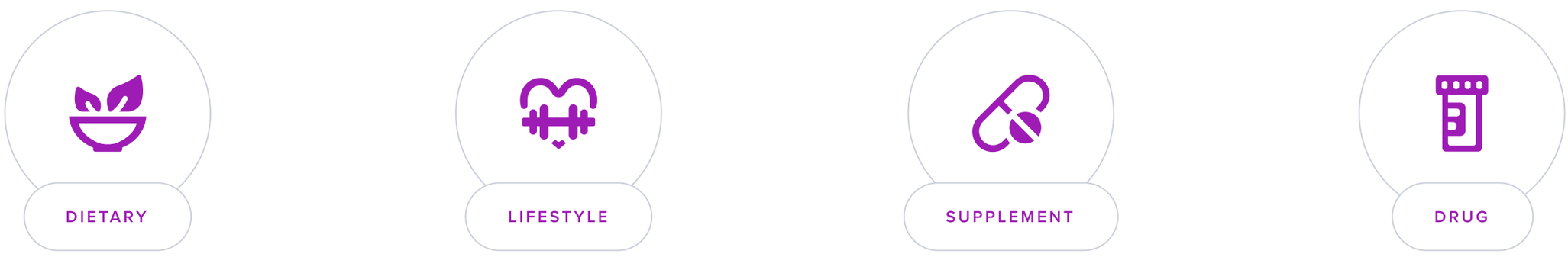
Genotype color info: AA You don't have any risk alleles | AA You have 1 risk allele | AA You have 2 risk alleles

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

The *UGT2A1* gene encodes an enzyme called UGT (short for UDP-glucuronosyltransferase). This enzyme is responsible for performing a chemical reaction called **glucuronidation**, which is an important step in the body's detox process [R].

Although oxidative stress can affect many different aspects of your health, your brain is especially sensitive to the negative effects of oxidative stress [R, R, R, R].

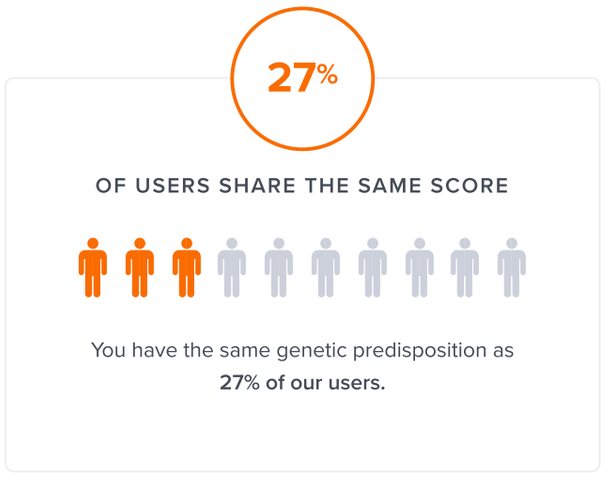
UGT2A1 Genetics

A large-scale study with over 3,000 participants found that the minor ‘G’ allele of the rs10518065 polymorphism was significantly associated with overall intelligence levels, as measured by a large and diverse range of cognitive tests. People with the ‘A’ allele performed better across all of these tests, whereas people with the rarer ‘G’ allele tended to show relatively poorer cognitive performance [R].

Because increased oxidative stress has been associated with a wide variety of cognitive impairments in many different human populations, this strongly suggests that **the negative effects of the ‘G’ allele are likely due to impaired antioxidant protection** [R, R].

LOWER ACTIVITY

Likely lower UGT2A1 activity based on the genetic variants we looked at



Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
UGT2A1	rs10518065	GA

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
1	Cognitive Activity	15 minutes
2	Glutathione supplements	
3	N-acetylcysteine (NAC)	1200 mg

1

Cognitive Activity

IMPACT 4 / 5

EVIDENCE 4 / 5

How to implement

Engage in mentally stimulating activities, such as puzzles, reading, or learning a new skill, for at least 15 minutes daily. Consistency is key, so incorporate these activities into your daily routine for ongoing cognitive health benefits.

TYPICAL STARTING DOSE

15 minutes

Description

Engaging in cognitive activities, such as puzzles, reading, or learning new skills, can help maintain mental sharpness and potentially reduce the risk of age-related cognitive decline. Staying mentally active supports cognitive health and overall quality of life.

Some scientists like to think of the brain as a muscle. They say people should “use it or lose it” [R].

In line with this, keeping the brain stimulated may help support cognition [R].

There are many ways to keep your brain active. These include [R, R, R, R, R]:

- Reading a book
- Solving a word or number puzzle (e.g., crossword, Sudoku)
- Completing a jigsaw puzzle
- Learning a new language

How it helps

Training on **working memory** can moderately improve this aspect of cognitive function in both healthy adults and children with learning disabilities [R, R].

Cognitive training for preventing **age-related cognitive decline** may modestly improve [R, R, R, R]:

- Memory performance
- Executive functioning
- Processing speed
- Attention
- Fluid intelligence
- Subjective cognitive performance

Keeping your brain active may boost cognitive function. The following activities may boost cognition and reduce the risk of cognitive decline [R]:

- Playing an instrument [R, R, R]
- Playing games and puzzles [R]
- Performing mental work [R]
- Reading books
- Staying socially active [R, R, R, R]

The **combination of cognitive training and exercise** may be particularly beneficial for cognition in the elderly [R, R, R, R].

Interestingly, animal studies found that the *UGT2A1* gene is expressed more in response to cognitive stimulation [R].

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Glutathione supplements

IMPACT 4 / 5

EVIDENCE 4 / 5

How to implement

Take glutathione supplements orally, usually in pill or powder form, with a recommended dose ranging from 500mg to 1000mg daily, divided into two doses. It's best taken on an empty stomach or as directed by a healthcare professional. Continuous use is advised for sustained benefits, but consulting with a healthcare provider for personalized advice and duration is important.

Description

Glutathione (GSH) is your body's strongest antioxidant. It has an enormous capacity to combat oxidative stress and neutralize harmful free radicals. Chemically speaking, glutathione is a tripeptide made up of 3 amino acids [R]:

- Glutamate
- **Cysteine**
- Glycine

Low glutathione levels have been linked to cognitive decline, age-related disease, and general mortality among the elderly [R, R].

People take glutathione supplements to help with:

- Oxidative stress and detox
- Immune system support
- Skin aging and damage
- Exercise recovery
- Chronic diseases such as type 2 diabetes, Alzheimer's disease, Parkinson's disease, or COPD

How it helps

Daily consumption of glutathione supplements was effective at increasing body compartment stores of glutathione, reducing oxidative stress, and decreasing the oxidized to reduced glutathione ratio in whole blood after 6 months in a placebo-controlled trial of 16 healthy men [R].

Similarly, both oral and transdermal glutathione increased blood glutathione levels in a non-placebo-controlled trial of 26 children with autism spectrum disorder. A case series also found this benefit of glutathione in autism spectrum disorder [R, R].

PERSONALIZED TO YOUR GENES

Your *UGT2A1* gene variant has been associated with worse cognitive function, likely due to increased oxidative stress resulting from decreased glutathione production. Taking glutathione supplements may help counteract the negative effects of this variant [R, R].

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
UGT2A1	**rs10518065**	GA	

3

N-acetylcysteine (NAC)

IMPACT 3 / 5

EVIDENCE 3 / 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

A meta-analysis of 28 studies concluded that supplementation with NAC lowers homocysteine (by 1.45 pg/mL), IL-8 (by 2.56 pg/mL), and MDA (by 1.44 µmol/L), and TNF-α and IL-6 after sensitivity analysis [R].

NAC acts as a metabolic precursor of glutathione, thus helping replenish its levels [R, R].

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.