SelfDecode™

Response to Carnosine (CNDP1 and CNDP2)

Gene Report

REPORT CATEGORIES

- INFLAMMATION & AUTOIMMUNITY
- NERVE HEALTH
- DETOX

Sample Client

Report date: 15 January 2026

Powered by omicsedge

Table of Contents

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

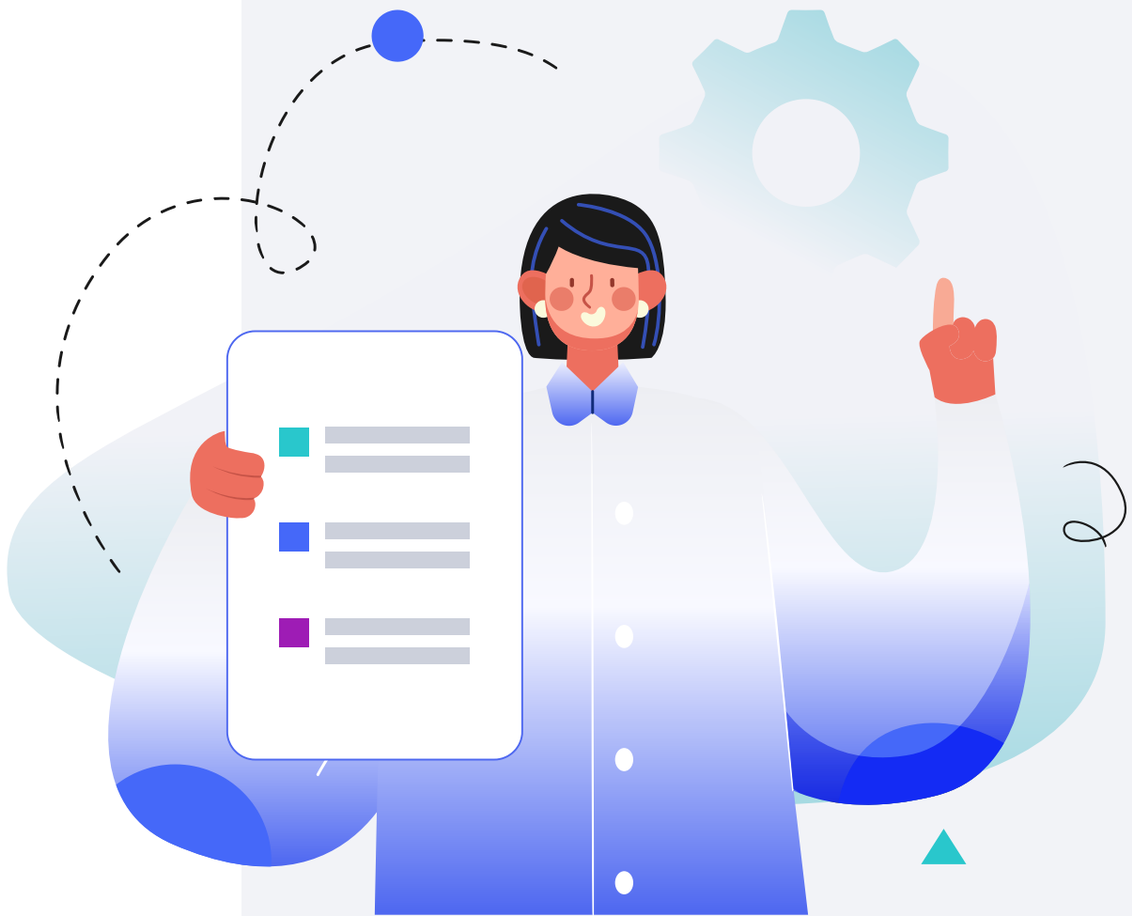
Male

HEIGHT

5ft 5" 165cm

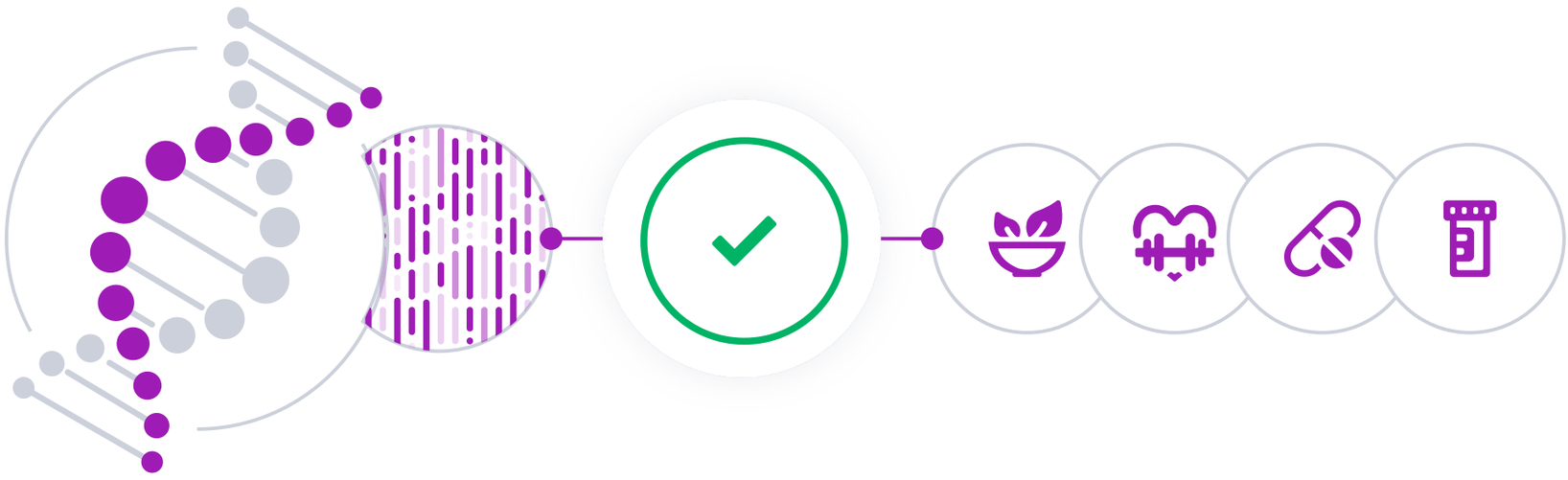
WEIGHT

137lb 62kg



How this works

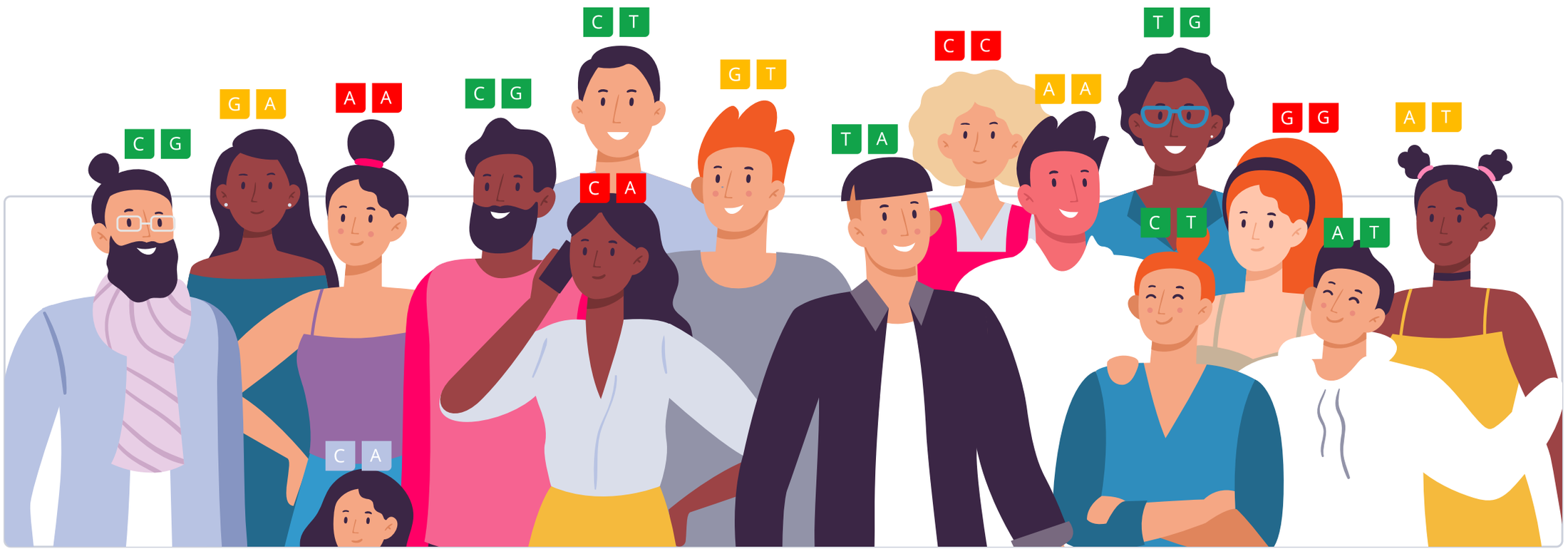
Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.



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.

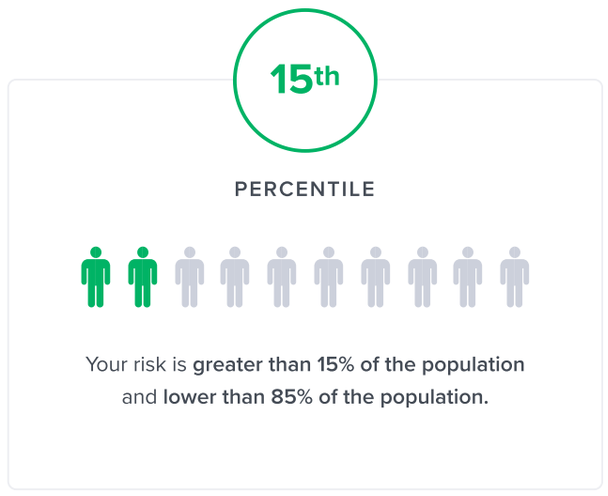
Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



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.

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 *CNDP1* and *CNDP2* genes encode carnosinases, enzymes that are primarily involved in the breakdown of carnosine. This is a dipeptide composed of beta-alanine and histidine. Carnosine is found in high concentrations in muscle tissues, particularly in skeletal muscles and brain cells, and is known for its antioxidant and anti-inflammatory effects [R, R, R].

Carnosinase enzymes play a critical role in carnosine metabolism by hydrolyzing it into its constituent amino acids. This process helps regulate the levels of carnosine in the body, which is believed to have several beneficial effects, including improving muscle function, reducing oxidative stress, and modulating neuroprotective processes [R, R, R].

- CNDP1 is primarily expressed in muscle tissue, where it regulates carnosine levels to support muscle function, particularly during high-intensity exercise.
- CNDP2, on the other hand, is more widely expressed in various tissues, including the brain, and has been linked to neurological function and cognitive health.

Carnosine has been shown to protect against oxidative damage, which is associated with muscle fatigue, neurological diseases, and aging. By breaking down carnosine, CNDP1 and CNDP2 play a critical role in maintaining carnosine homeostasis in the body, which is crucial for muscle health and neuroprotection [R].

Genetics of Carnosine Response

Variants in the *CNDP1* and *CNDP2* genes with increased activity may lead to lower carnosine levels, thus reducing the effects of carnosine supplementation and influencing physical muscle performance, neurological diseases, and diabetes-related complications.

The following *CNDP1* variants have been associated with higher levels of this enzyme, potentially worsening the effectiveness of carnosine supplementation:

- 'A' of **rs7505555** [R]
- 'T' of **rs72981715** [R]
- 'C' of **rs140836083** [R]
- 'G' of **rs4329999** [R]
- 'A' of **rs6566814** [R]
- 'A' of **rs17817077** [R]
- 'T' of **rs56042934** [R]
- 'T' of **rs58692747** [R]
- 'C' of **rs17089382** [R]
- 'T' of **rs62099907** [R]
- 'A' of **rs4891560** [R]
- 'G' of **rs1974964** [R]
- 'C' of **rs61562428** [R]
- 'G' of **rs145853692** [R]
- 'T' of **rs560917121** [R]
- 'C' of **rs11664131** [R]

Of these, the rs17817077 variant has also been associated with an increased risk of diabetic nephropathy [R].

As for *CNDP2*, the following variants may worsen the effectiveness of carnosine due to their link to higher carnosinase levels:

- 'A' of **rs746222** [R]
- 'T' of **rs145892622** [R]
- 'A' of **rs186875378** [R]
- 'CA' of **rs35283725** [R]
- 'G' of **rs8084058** [R]
- 'C' of **rs78047264** [R]
- 'G' of **rs79834361** [R]

TYPICAL RESPONSE

Predisposed to a typical response to carnosine based on 23 genetic variants we looked at

29th

PERCENTILE

Your risk is **greater than 29% of the population** and **lower than 71% of the population.**

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
CNDP1	rs72981715	TT
CNDP1	rs140836083	CC
CNDP2	rs4329999	GG
CNDP2	rs56042934	TT
CNDP2	rs58692747	TT
CNDP1	rs17089382	CC
CNDP1	rs4891560	AA
CNDP1	rs145853692	GG
CNDP2	rs145892622	TT
C18ORF63	rs147859912	CC
CNDP1	rs17817077	AG
CNDP1	rs62099907	TA
CNDP2	rs1974964	GC
CNDP2	rs8084058	AG
CNDP2	rs79834361	TT
C18ORF63	rs78047264	TT
CNDP1	rs7505555	GG
CNDP2	rs746222	GG
CNDP1	rs6566814	GG
CNDP1	rs61562428	TT
CNDP2	rs186875378	GG
CNDP2	rs11664131	TT

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

- ‘G’ of **rs145853692** [R]
- ‘C’ of **rs147859912** [R]
- ‘T’ of **rs560917121** [R]
- ‘C’ of **rs11664131** [R]