SelfDecode™

CYP2D6 (Mental Health, Detox)

Gene Report

REPORT CATEGORIES

MENTAL HEALTH

DETOX

Sample Client

Report date: 15 January 2026

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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

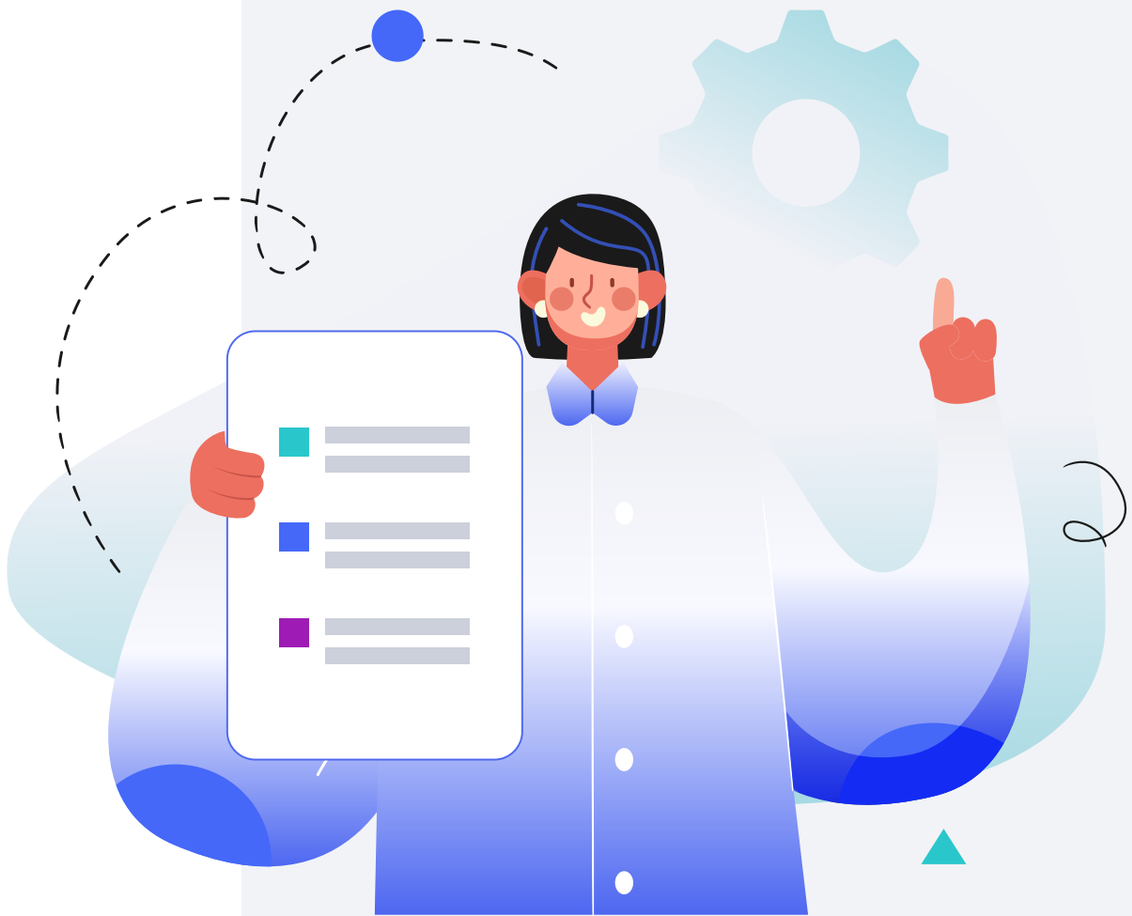
Male

HEIGHT

5ft 5" 165cm

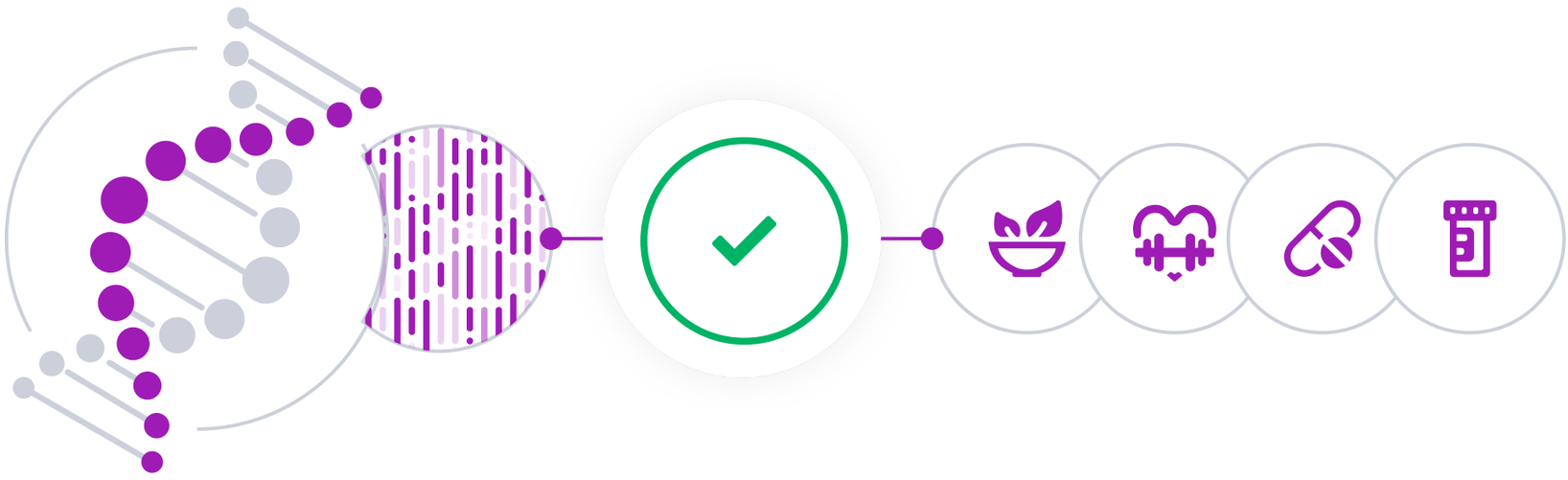
WEIGHT

137lb 62kg



How this works

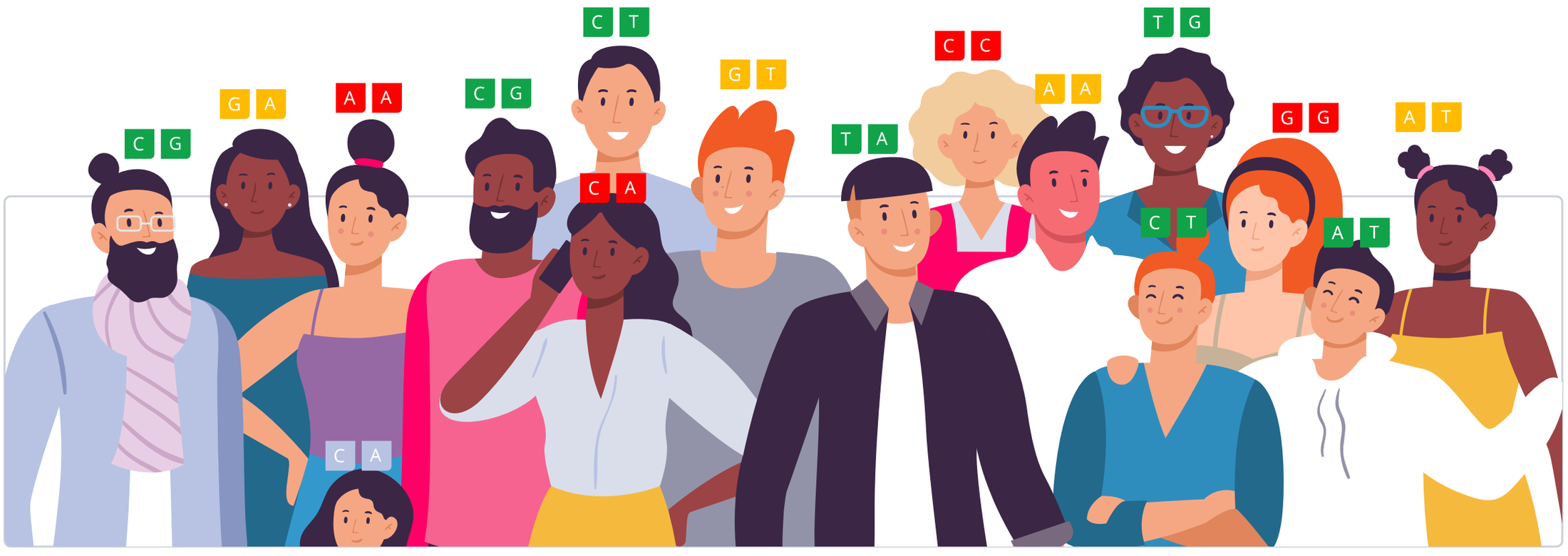
Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.



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.

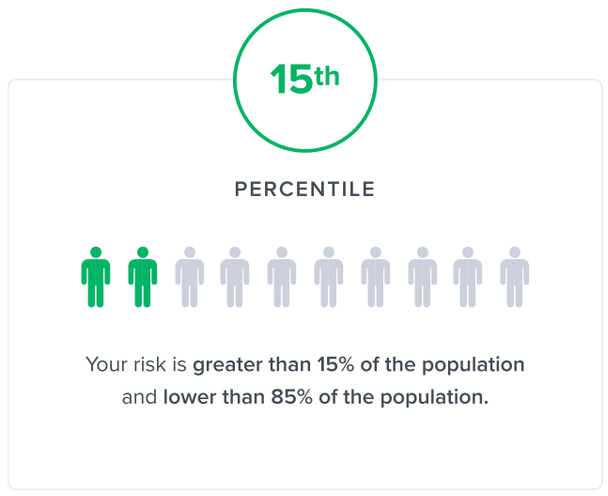
Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



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.



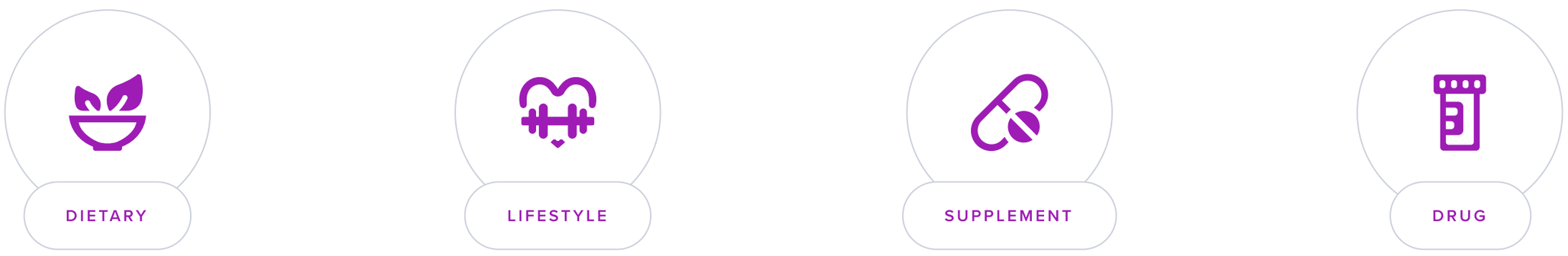
Genotype color info: AA You don't have any risk alleles | AA You have 1 risk allele | AA You have 2 risk alleles

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 *CYP2D6* encodes a member of the cytochrome P450 monooxygenase superfamily of enzymes. These proteins eliminate most drugs from the body. CYP2D6 catalyzes reactions involved in drug metabolism and the synthesis of cholesterol, steroids, and other lipids [R].

Although it accounts for only 2-5% of the liver CYPs, CYP2D6 metabolizes 25% of all drugs. This includes [R, R, R]:

- Opioids: morphine, hydrocodone, codeine, oxycodone, tramadol [R, R, R, R, R]
- Antidepressants: amitriptyline, nortriptyline, venlafaxine, and fluoxetine [R, R, R]
- Antipsychotics: haloperidol, risperidone [R, R]
- Atomoxetine (used to treat ADHD) [R]
- Beta-blockers: carvedilol and metoprolol [R]
- Antimalarials: primaquine and carboxy-primaquine [R]
- Antiemetics: metoclopramide [R]
- Antitumor agents: tamoxifen and gefitinib [R, R]
- Psychedelic drugs such as methamphetamine (MDMA), ayahuasca, and LSD [R, R, R]

In addition, CYP2D6 also:

- Metabolizes tyramine to dopamine [R]
- Regenerates serotonin [R]
- Inactivates neurotoxins [R, R]
- Metabolizes the antioxidant tyrosol, found in olive oil [R]

Due to its role in dopamine and serotonin metabolism, CYP2D6 affects human behavior, personality, cognitive function, and psychiatric disorders [R].

CYP2D6 Genetics

PLEASE NOTE: This test did not evaluate for CYP2D6 copy number variations, such as gene deletions or duplications. CNVs are a primary factor influencing CYP2D6 enzyme activity and are essential for a complete assessment of metabolizer status. The results presented should be interpreted with this significant limitation in mind [R].

The *CYP2D6* gene has more than 100 known variants. These include [R, R]:

- Normal enzyme function variants (e.g., *1 and *2) [R, R]
- Reduced function variants (e.g., *9, *10, *17, and *41) [R, R]
- Non-functional variants (e.g., ∆3, ∆4, ∆5, ∆6, and *7) [R, R]

*CYP2D6*1* is the wild-type variant. The change from an 'A' to a 'G' at **rs16947** encodes *CYP2D6*2*. Although its activity is indistinguishable from that of CYP2D6*1, having several copies of this variant can result in an ultrafast phenotype. This variant has been associated with tyramine intolerance, suggesting a slightly lower metabolic efficiency for this substrate [R, R].

The 'T' allele of **rs3892097** corresponds to *CYP2D6*4*. This is the most frequent non-functional variant in Europeans and North Americans (18.0%), accounting for 70-90% of cases [R].

Another non-functional variant is *CYP2D6*6*, consisting of the deletion of an 'A' at **rs5030655**. This variant is generally rare, but may be slightly more common in Europeans (around 1%) [R, R, R].

Finally, the 'G' allele of **rs5030867** encodes the non-functional *CYP2D6*7* variant. This allele is very rare but may be slightly more common in South East Asians (around 1%) [R].

The 'A' allele of **rs1065852** encodes the intermediate-activity *CYP2D6*10* variant. This variant is especially common in Thai (50%) and East Asians (42%) [R, R].

TYPICAL ACTIVITY

Predisposed to a typical CYP2D6 activity based on 5 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
CYP2D6	rs5030867	TT
CYP2D6	rs5030655	CC
CYP2D6	rs3892097	CC
CYP2D6	rs28371706	GG
CYP2D6	rs1065852	GG
CYP2D6	rs16947	GA

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

Another intermediate-activity variant is *CYP2D6*17*, encoded by the 'A' allele of **rs28371706**. This variant is most common in Africans (20%-35%) [R, R].

Studies suggest that people with low CYP2D6 enzyme activity may be more prone to anxiety and less successful at socializing than extensive metabolizers. Reduced activity has also been associated with impulsivity or novelty seeking [R, R, R].

Alternatively, poor metabolizers may perform better in cognitive tasks that demand sustained attention or vigilance and spatial working memory. They may also have higher conscientiousness, responsibility, orderliness, and perseverance [R, R, R].

Low-activity variants have been associated with an increased risk of developing the following conditions:

- Alzheimer's disease [R]
- Parkinson's disease [R]
- Systemic sclerosis [R, R]
- Lupus [R]
- Ankylosing spondylitis [R]
- Pesticide toxicity [R]
- Adverse effects from antidepressants [R]

In contrast, they have been linked to a reduced risk of:

- Schizophrenia [R]
- Bulimia [R]
- Heavy smoking [R]
- Adverse effects from codeine and tramadol [R]