

UGT1A1 (Detox)

Gene Report

REPORT CATEGORY —



DETOX

Sample Client

Report date: 15 January 2026

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Personal information

NAME

Sample Client

SEX AT BIRTH

Male

HEIGHT

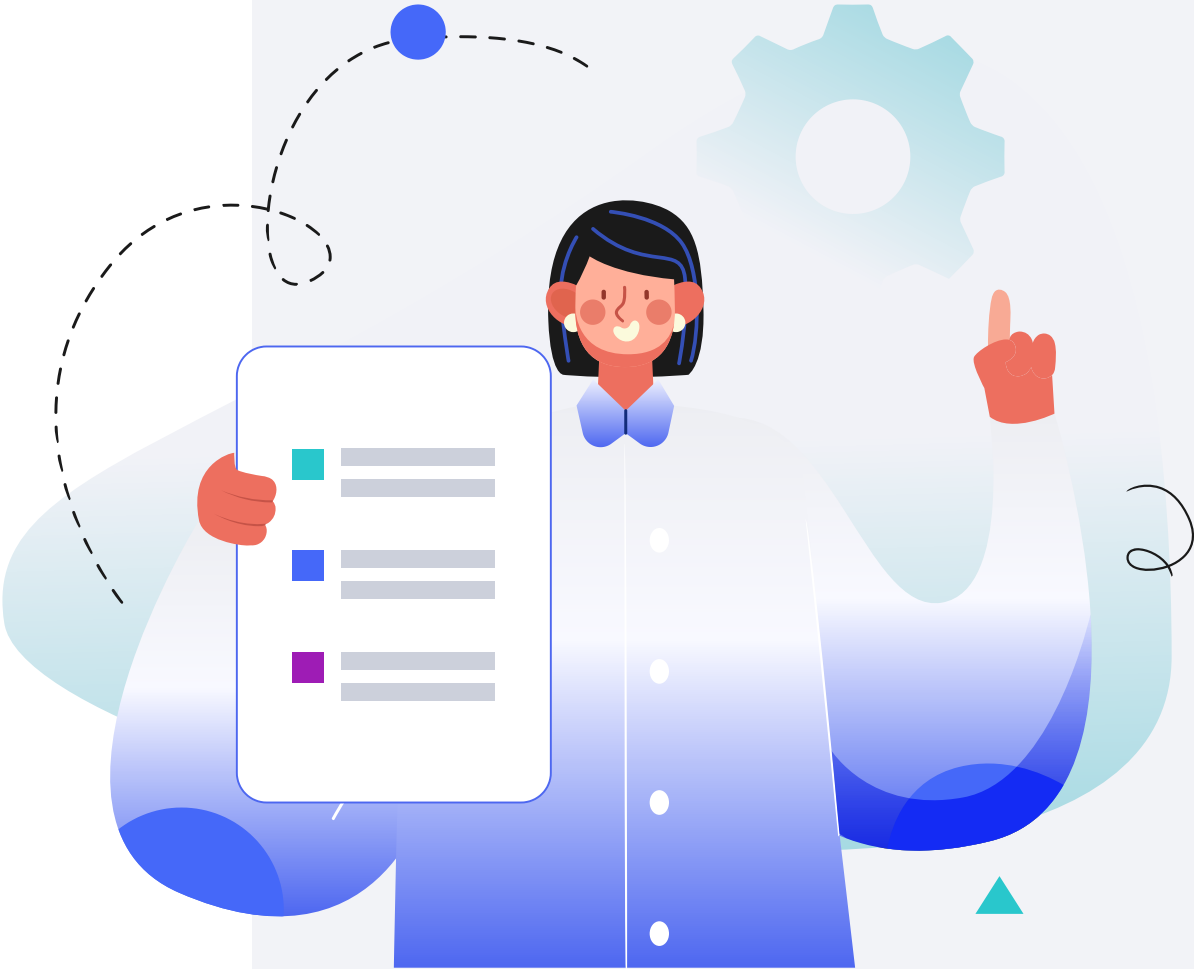
5ft 5" 165cm

WEIGHT

137lb 62kg

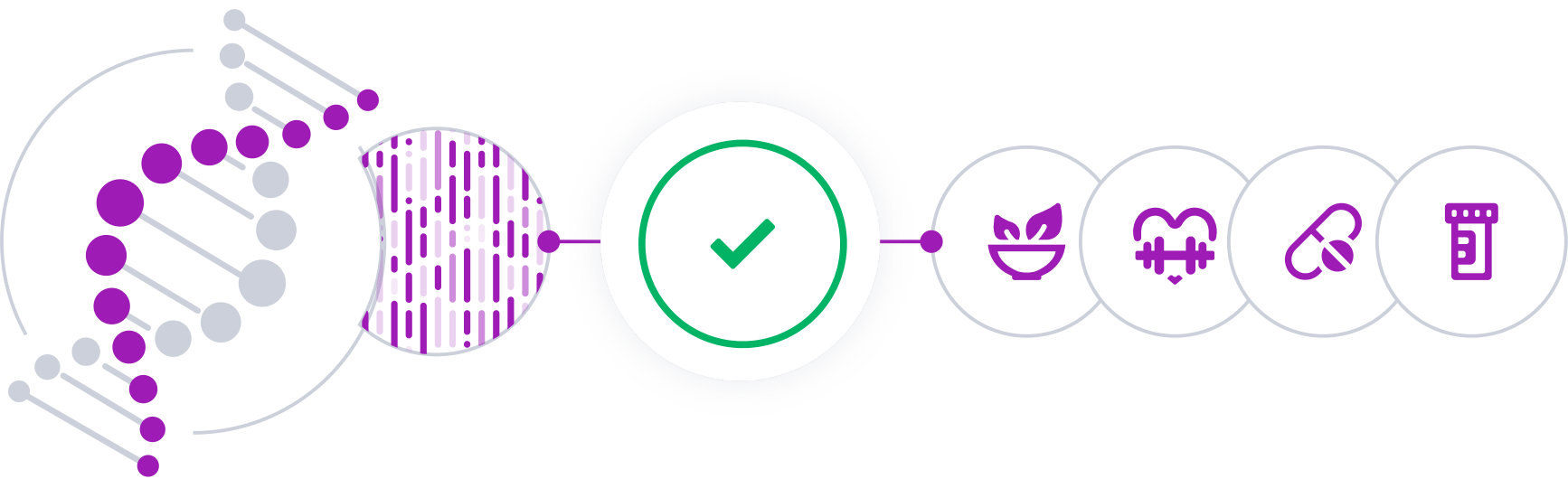
DISCLAIMER

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.

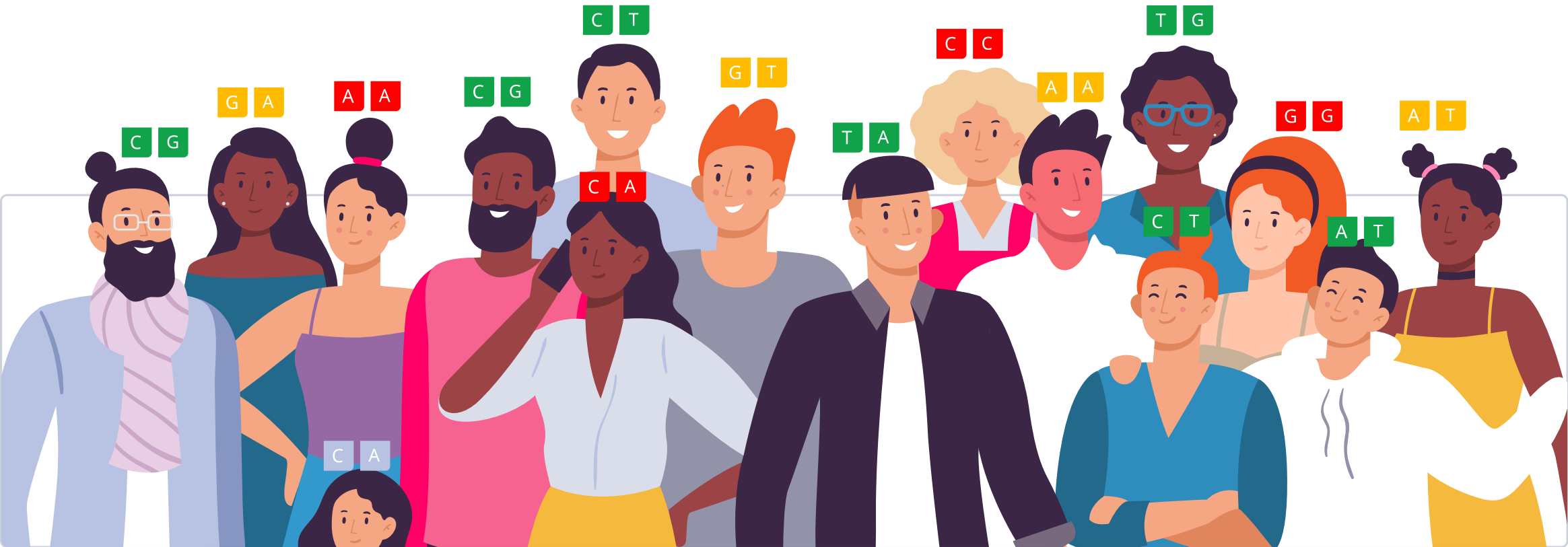


Similarly, our Trait Reports look at how your DNA influences your traits.



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.

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

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



Genotype color info:

AA

You don't have any risk alleles

AA

You have 1 risk allele

AA

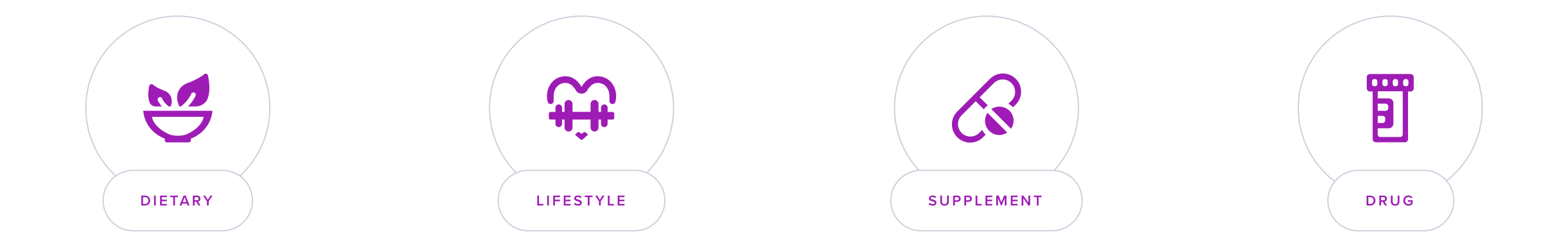
You have 2 risk alleles

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, a few 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 [UGT1A1](#) 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](#) [\[R\]](#).

Some important targets of UGT include:

- [Bilirubin](#), a waste product from the breakdown of [red blood cells](#) [\[R\]](#)
- [BPA plastics](#) [\[R\]](#)
- Steroid hormones [\[R\]](#)
- Medications: up to 15% of all FDA-approved drugs according to some estimates [\[R\]](#)

BPA, short for bisphenol-A, is a chemical compound found in many types of plastic. A buildup of BPA in the body is linked to several disorders, including cancer, heart disease, and thyroid dysfunction [\[R\]](#).

Bilirubin is a waste product that your body naturally produces during the breakdown of old red blood cells. Failure to excrete bilirubin through urine or feces can lead to disorders like Gilbert’s syndrome or Crigler–Najjar syndrome, which can cause yellowing of the skin, [fatigue](#), loss of appetite, and even more serious symptoms in children [\[R\]](#).

The most researched drug interaction with *UGT1A1* is irinotecan, a drug used to treat colon and lung cancer. Studies show that people with a low-activity *UGT1A1* variant who take this drug are much more likely to experience neutropenia, a dangerous reduction in [white blood cell](#) count. The FDA recommends that people with this variant should start at a lower dose to reduce toxicity [\[R\]](#), [\[R\]](#).

UGT1A1

Genetics

Certain genetic variations in *UGT1A1* reduce the enzymatic activity of UGT, which [impairs the body's ability to detox](#) and results in a buildup of toxic substances in the body. The normal version of *UGT1A1* (the one with normal detox activity) is called *UGT1A1*1*, or the “wild” type allele [\[R\]](#).

One of the most important and well-studied genetic variants is ***UGT1A1*28*** ([rs34983651](#)). This variant causes an “insertion” mutation, which means it adds an extra ‘TA’ into the gene where there should be none. According to some reports, ***UGT1A1*28* causes a 70% reduction in enzyme activity**, leading to 10 times slower removal of BPA from breast tissues, as well as an increased risk of adverse reactions from the following drugs [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Irinotecan, used to treat colon and lung cancer
- Raloxifene, used to treat osteoporosis and prevent breast cancer
- Raltegravir, used to treat HIV
- Indinavir, used to treat HIV
- Atazanavir, used to treat HIV
- Sorafenib, used to treat various cancers

Other variants include ***UGT1A1*6*** ([rs4148323](#)) and ***UGT1A1*27*** ([rs6742078](#)), which also lower enzyme activity, leading to a reduced ability to detox. All of these variations in *UGT1A1* can lead to toxicity disorders. The minor variants of UGT1A1*27 and UGT1A1*28 are usually inherited together [\[R\]](#).

The minor ‘A’ variant of UGT1A1*6 has been associated with:

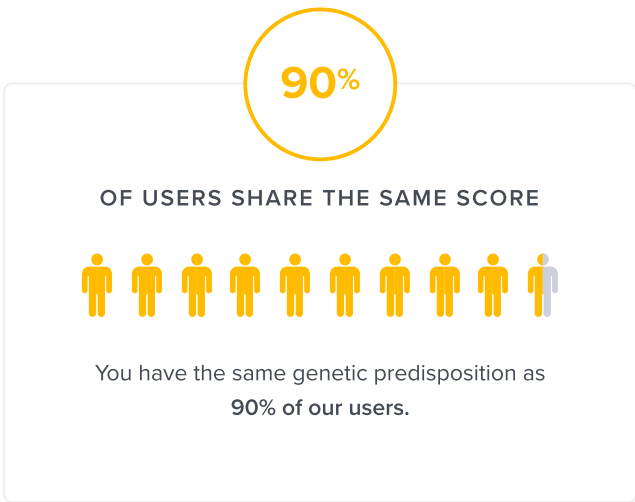
- High bilirubin in adults and bilirubin toxicity in infants [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#)
- Adverse reactions of irinotecan chemotherapy [\[R\]](#)
- Risk of congenital heart disease in babies born to mothers exposed to polycyclic aromatic hydrocarbons [\[R\]](#)
- Reduced risk of anti-tuberculosis drug-induced hepatotoxicity [\[R\]](#)

In turn, the minor ‘T’ variant of UGT1A1*27 has been linked to:



TYPICAL ACTIVITY

Likely typical UGT1A1 activity based on the genetic variants we looked at



Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
UGT1A6	rs6742078	GG
UGT1A1	rs4148323	GG

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

- High bilirubin in adults [\[R\]](#), [\[R\]](#)
- Increased risk of gallstones [\[R\]](#), [\[R\]](#)
- Faster clearance of telmisartan [\[R\]](#)

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.

1

Cruciferous Vegetables

1



Cruciferous Vegetables

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Incorporate a serving of cruciferous vegetables, such as broccoli, cauliflower, Brussels sprouts, kale, or cabbage, into at least one meal each day. A serving size is about a half cup cooked or one cup raw. Try to maintain this habit consistently over time for the best health outcomes.

Description

Cruciferous vegetables like broccoli, cauliflower, and kale are rich in vitamins, fiber, and antioxidants. Including them in your diet can promote overall health and may offer cancer-protective properties.

Cruciferous vegetables are a group of vegetables that belong to the Brassicaceae family. They are rich in fiber, vitamins, minerals, and other nutrients.

Some common cruciferous vegetables include broccoli, cauliflower, cabbage, kale, and brussels sprouts.

How it helps

Research has found that **cruciferous vegetables** can increase *UGT1A1* activity by 16-21% in people with *UGT1A1*28* compared to diets without these vegetables. Even those with a normal genotype can benefit; cruciferous vegetables increased activity by 7% in people with *UGT1A1*1*, potentially boosting your body’s ability to detox [\[R\]](#).

Next Steps

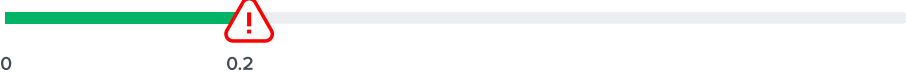
Remember, your genes only tell one important part of your health story!

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.

	Bilirubin, Direct	0.3 mg/dL		9 Nov 2025
	Bilirubin, Indirect	0.7 mg/dL		9 Nov 2025
	Bilirubin, Total	1 mg/dL		9 Nov 2025