SelfDecode™

PLIN (Blood Sugar, Weight)

Gene Report

REPORT CATEGORIES —

WEIGHT & BODY FAT

BLOOD SUGAR CONTROL

Sample Client

Report date: 15 January 2026

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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

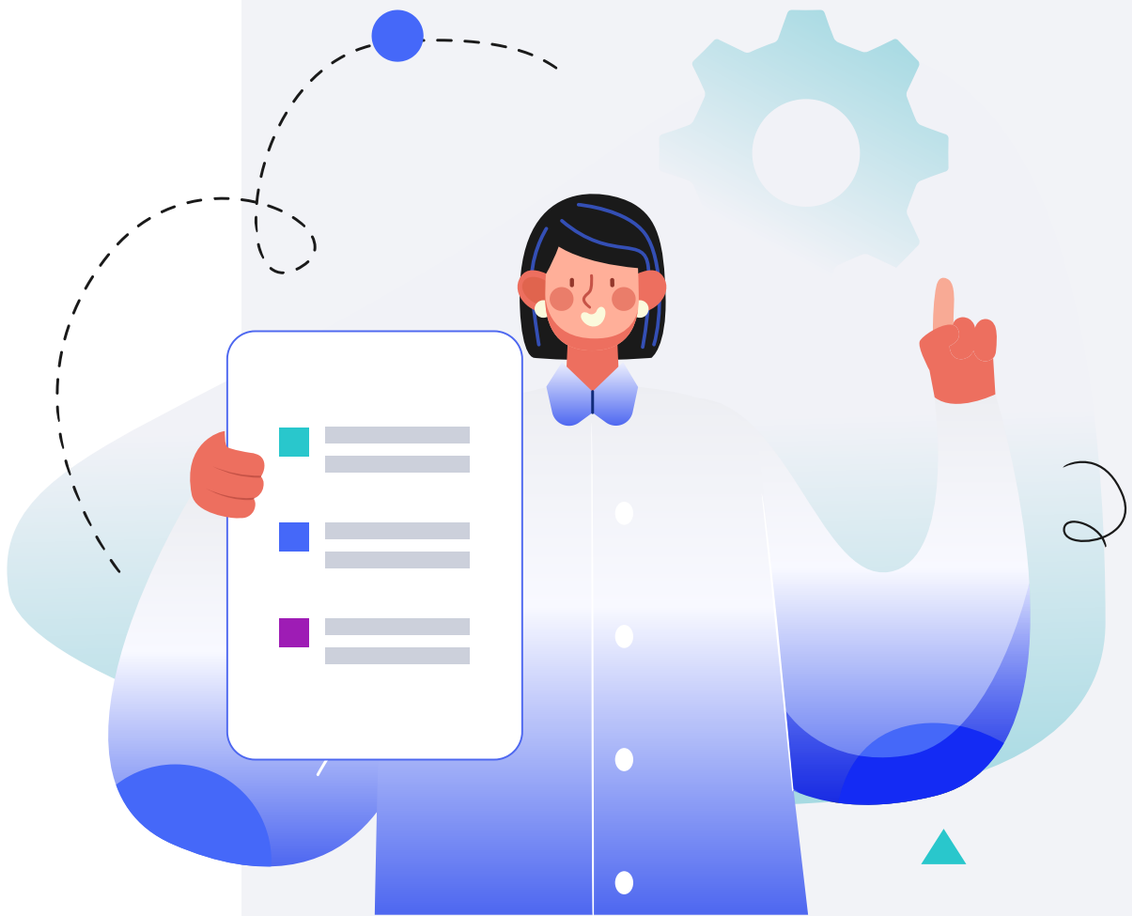
Male

HEIGHT

5ft 5" 165cm

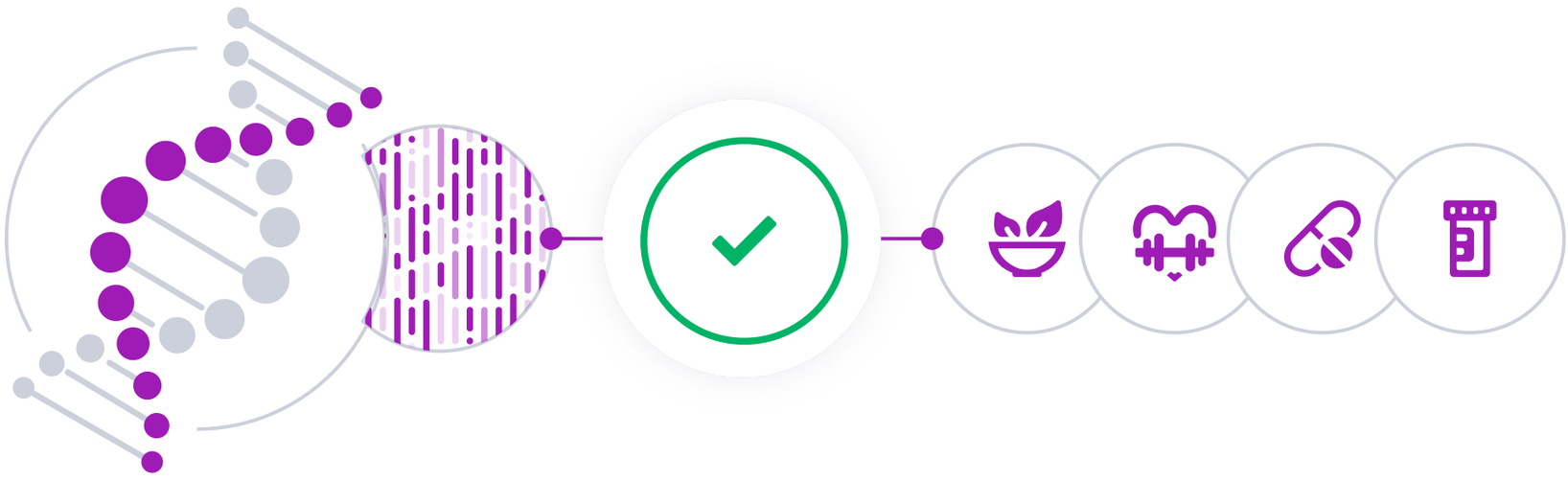
WEIGHT

137lb 62kg



How this works

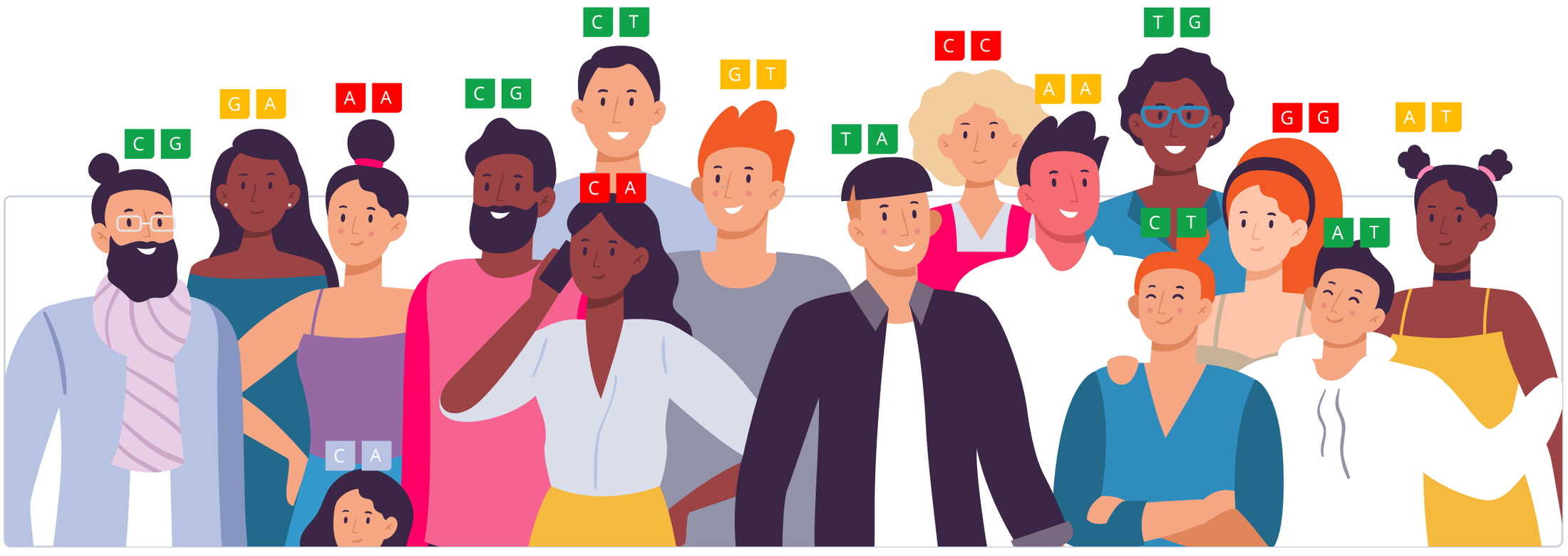
Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.



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.

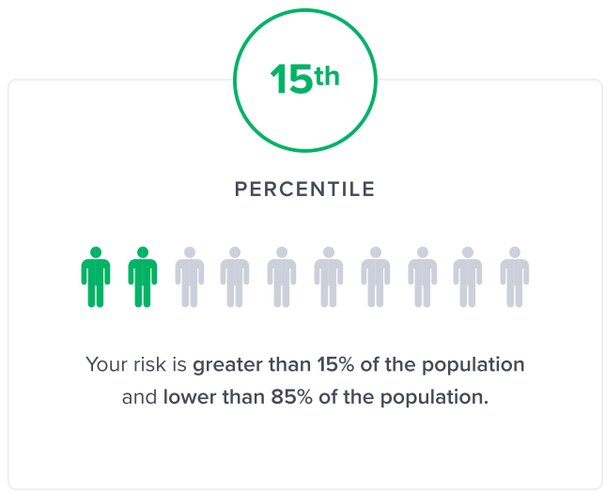
Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



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.



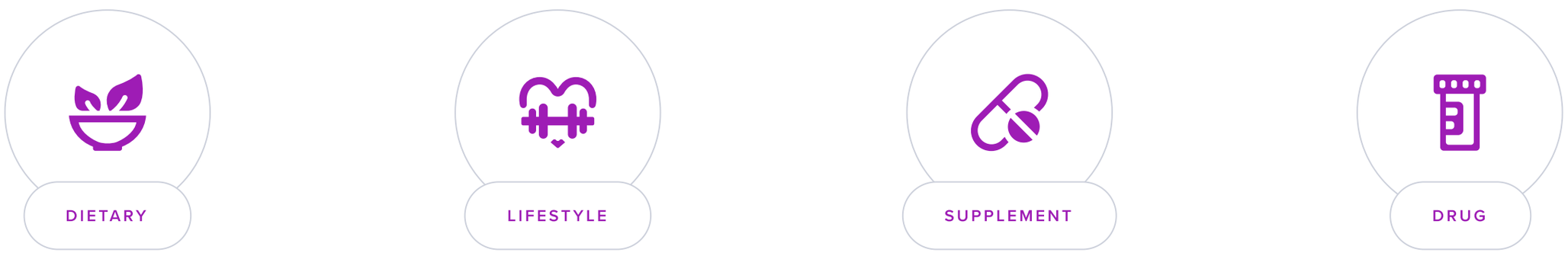
Genotype color info: AA You don't have any risk alleles | AA You have 1 risk allele | AA You have 2 risk alleles

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

PLIN genes encode perilipin proteins, which are found in fat cells (adipocytes) and play key roles as regulators of fat metabolism and storage. They help prevent insulin resistance but may also contribute to weight gain. Perilipin is elevated in obese animals and humans [R, R].

The most abundant one is PLIN1, which coats lipid storage droplets in adipocytes and protects them from breakdown by hormone-sensitive lipase. Its absence may result in leanness. In addition to weight, PLIN1 also controls postprandial lipid levels and aerobic fitness [R, R].

Another, worse-researched perilipin is PLIN4. This protein also coats lipid storage droplets and seems to participate in triglyceride synthesis [R].

Most variants show a paradoxical pattern: they increase metabolic disease risk but help with weight management. Variants in *PLIN* genes have been linked to [R, R, R, R]:

- Metabolic syndrome
- Type 2 diabetes
- PCOS

Despite these metabolic risks, the same variants often help with weight management. Most of them are associated with [R, R, R, R]:

- Lower body weight, BMI, and body fat
- Smaller waist and hip measurements
- Enhanced fat breakdown
- Lower risk of acute coronary syndrome and familial partial lipodystrophy

PLIN Genetics

The best-characterized *PLIN1* polymorphism is **rs894160** (11482 G>A). Its minor 'T' allele increases lower perilipin levels and has been associated with an increased risk of type 2 diabetes, metabolic syndrome, and PCOS [R, R, R, R, R, R].

Interestingly, the effects of this variant on blood glucose control strongly depend on the composition of the diet. While increasing complex carbohydrates may counteract the negative effects of the 'T' allele on insulin sensitivity, dietary fats may have the opposite effect [R, R].

On the bright side, the 'T' variant has been associated with enhanced fat breakdown and decreased obesity risk in white women. Nevertheless, carriers may reduce their waist circumference less in response to energy restriction. This may be related to the composition of the diet rather than the amount of calories, since two studies associated this allele with smaller waist and hip circumferences when complex carbohydrate intake is higher than 144 g/day, but with larger waist circumference when it's lower [R, R, R, R, R, R].

Another allele usually inherited together with the previous one, 'C' at **rs2289487** (PLIN1 6209T>C), has also been associated with an increased risk of type 2 diabetes. However, this variant has also been associated with a decreased risk of obesity and greater weight loss from dietary interventions [R, R, R, R].

Another well-researched variant is **rs1052700** (14995A>T), usually inherited together with rs894160 in Asians. Its minor 'T' allele has been associated with an increased risk of type 2 diabetes and glucose intolerance. As was the case for rs894160, carriers of the minor allele may benefit from increasing their dietary ratio of complex carbohydrates to fat when it comes to reducing insulin resistance [R, R, R, R].

This variant has also been associated with lower body weight, body fat, and waist circumference in whites, especially in women, as well as with greater weight loss in response to calorie restriction and intense exercise (HIIT) [R, R, R, R].

LOWER ACTIVITY

Likely lower PLIN activity based on 7 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
PEX11A	rs894160	CT
KIF7	rs1052700	AT
PLIN1	rs2289487	TC
PLIN1	rs2304795	AG
PLIN1	rs6496589	CC
UBXN6	rs8887	TT
PLIN1	rs2304796	GA

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

Other *PLIN1* variants associated with better weight management (and, presumably, worse blood glucose control) include:

- 'G' of **rs2304795** [R, R]
- 'A' of **rs2304796** [R]
- 'C' of **rs6496589** [R, R]

Finally, the 'T' allele of **rs8887** may reduce *PLIN4* expression by creating a binding site for an inhibitor. This allele has been associated with a lower waist-to-hip ratio and decreased weight in response to dietary omega-3 fatty acids [R, R].