

PPM1K (Blood Sugar/Diet)

Gene Report

REPORT CATEGORY —



Sample Client

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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 [PPM1K](#) gene helps create a protein named mitochondrial protein phosphatase 1K [\[R\]](#).

This protein plays an important role in the metabolism of certain amino acids called [branched-chain amino acids](#) (**BCAAs**), such as [leucine](#) [\[R\]](#).

There’s some evidence that certain genetic variants of *PPM1K* may impair the body’s ability to metabolize BCAAs, ultimately leading to an increase in BCAA levels [\[R\]](#).

This may be an issue as several studies have linked high BCAA levels to metabolic problems, such as [insulin resistance](#), [obesity](#), and [type 2 diabetes](#) [\[R\]](#), [\[R\]](#), [\[R\]](#).

Research also suggests that certain variants of *PPM1K* may affect how the body responds to certain diets [\[R\]](#), [\[R\]](#).

PPM1K Genetics and Blood Glucose Control

Studies show that certain genetic variants of *PPM1K* may have negative effects on the body.

More specifically, research suggests that the ‘C’ allele in [rs1440581](#) may be associated with an increased risk of type 2 diabetes and poor response to certain diets [\[R\]](#), [\[R\]](#), [\[R\]](#).

According to researchers, this occurs because the ‘C’ allele may impair the body’s ability to metabolize BCAAs, leading to a higher-than-normal level of BCAAs. High levels of BCAAs in the blood have been strongly linked to insulin resistance and type 2 diabetes in a number of studies [\[R\]](#), [\[R\]](#), [\[R\]](#).

A study of 6,000 Chinese non-diabetic participants found that an increase in BMI resulted in greater increases in insulin levels and insulin resistance in those with the ‘C’ allele in rs1440581. The researchers also found that each copy of the ‘C’ allele was associated with a 20% higher risk of type 2 diabetes [\[R\]](#).

In the POUNDS LOST trial, subjects who were on a calorie-restricted, high-fat diet and carried the ‘C’ allele in rs1440581 had less weight loss and smaller improvements in insulin resistance compared to those with the ‘T’ allele [\[R\]](#).

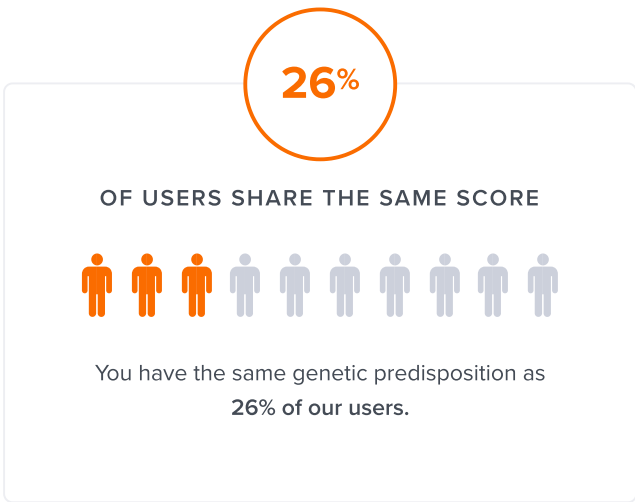
Similarly, those carrying the ‘C’ allele experienced *worse* improvements in weight and insulin resistance while on a calorie-restricted high-fat diet in the NUGENOB trial [\[R\]](#).

To sum up, the ‘C’ allele of rs1440581 is associated with higher insulin levels, insulin resistance, and risk of type 2 diabetes. Carriers may lose less weight from a calorie-restricted, high-fat diet.



LOWER ACTIVITY

Likely lower PPM1K activity based on the genetic variants we looked at



Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
PPM1K	rs1440581	CC

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.

- 1

Limit Dietary Fats

1



Limit Dietary Fats

IMPACT

4 / 5

EVIDENCE

4 / 5

How to implement

Reduce your total fat intake to less than 30% of your total daily calories. This means if you consume 2000 calories a day, aim for less than 67 grams of fat per day. Choose lean meats, opt for low-fat or fat-free dairy products, and cook with minimal amounts of healthy oils like olive or canola oil.

Description

Limiting dietary fats, particularly unhealthy saturated and trans fats, can help reduce the risk of heart disease and maintain a healthy weight. Choosing leaner sources of fats and moderating overall fat intake supports cardiovascular health and general well-being.

How it helps

Low-energy-density foods are foods that provide few calories per weight. Fatty and sugary foods are especially energy-dense, while those rich in proteins, fiber, and water reduce dietary energy density. In 4 non-placebo-controlled trials of 431 people on weight loss programs, those who ate less energy-dense foods lost more weight and maintained it better in the long term [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

In weight-loss interventions lasting 2-12 months, weight reduction increases by 0.37 kg for every 1% reduction of dietary fat according to a meta-analysis of 16 trials and 1,728 participants [\[R\]](#).

Five meta-analyses (the most recent one with 37 trials and over 57k participants) found that adopting a low-fat diet reduces weight (by 1.4-5.41 kg), BMI (by 0.5 kg/m2), waist circumference (by 0.3 cm), body fat (by 0.3-10.2%), and energy intake (by 1,138 kJ/day) when compared with the usual diet. Greater fat reductions resulted in greater weight loss [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

A low-fat diet reduces calorie intake, which can contribute to weight loss.

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.

	HbA1c	30 mmol/mol		29 Dec 2025
	Glucose, Fasting	97 mg/dL		9 Nov 2025
	Insulin, Fasting	9.08 uU/mL		9 Nov 2025
	HbA1c (%)	4 %		29 Dec 2025