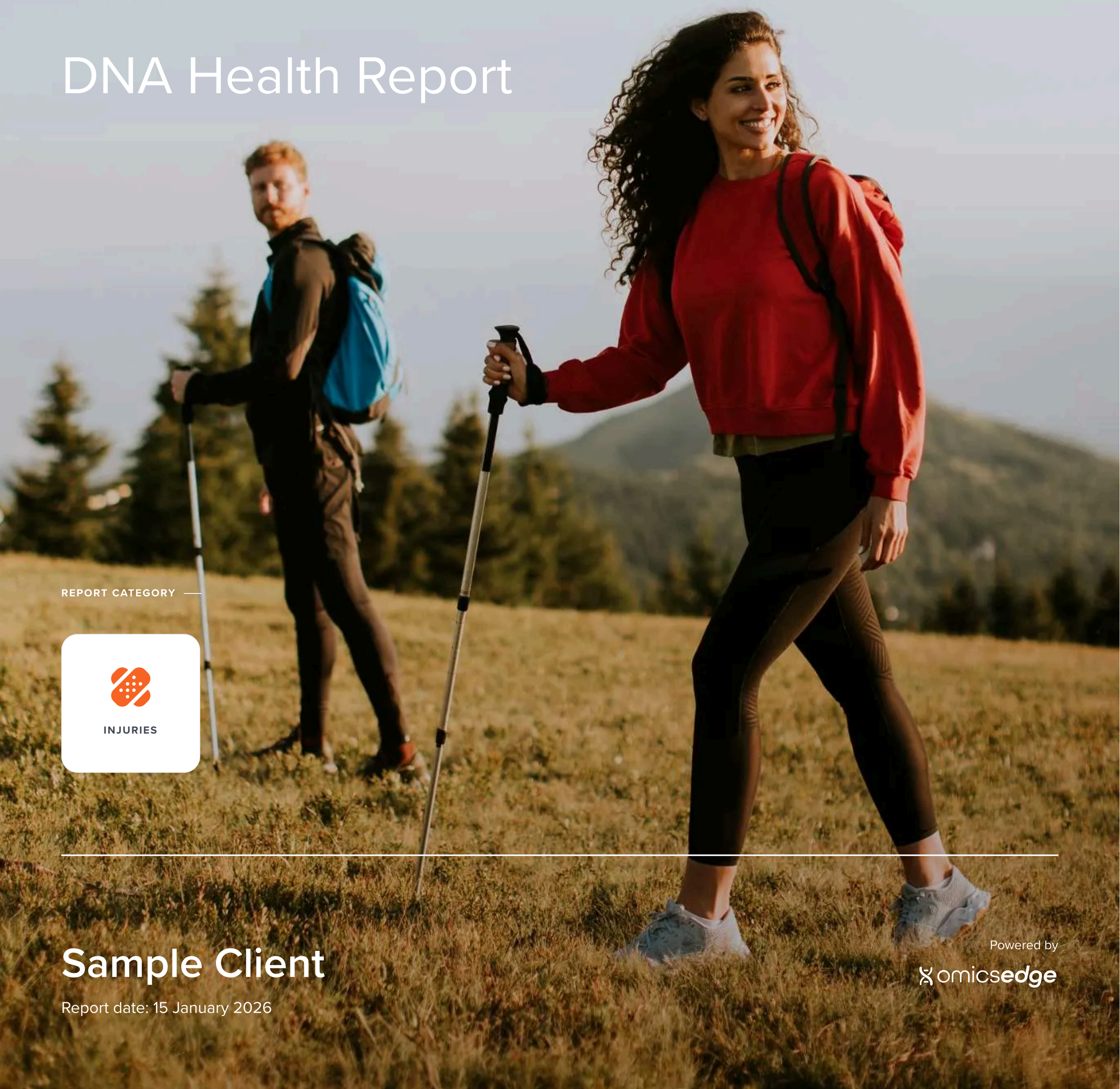
SelfDecode™

Concussion

DNA Health Report



REPORT CATEGORY

INJURIES

Sample Client

Report date: 15 January 2026

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Personal information

NAME

Sample Client

SEX AT BIRTH

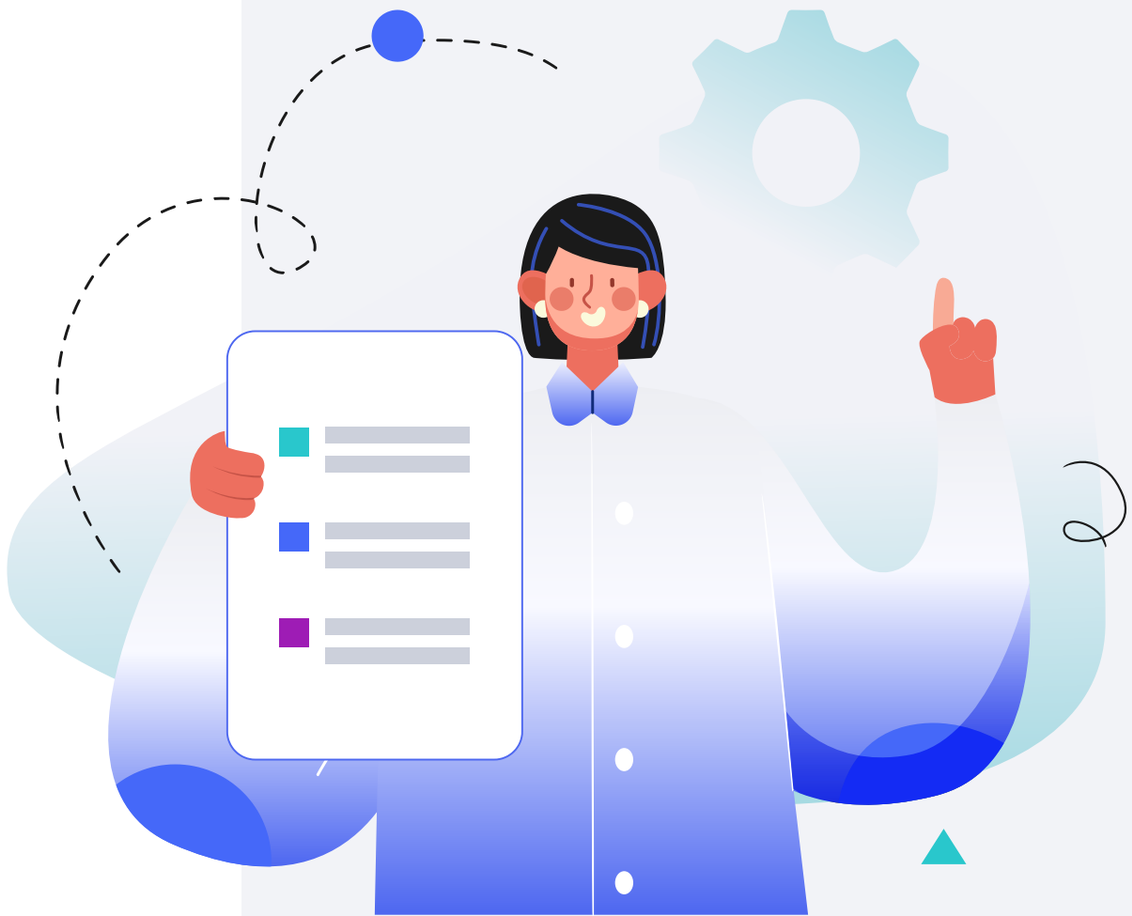
Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg

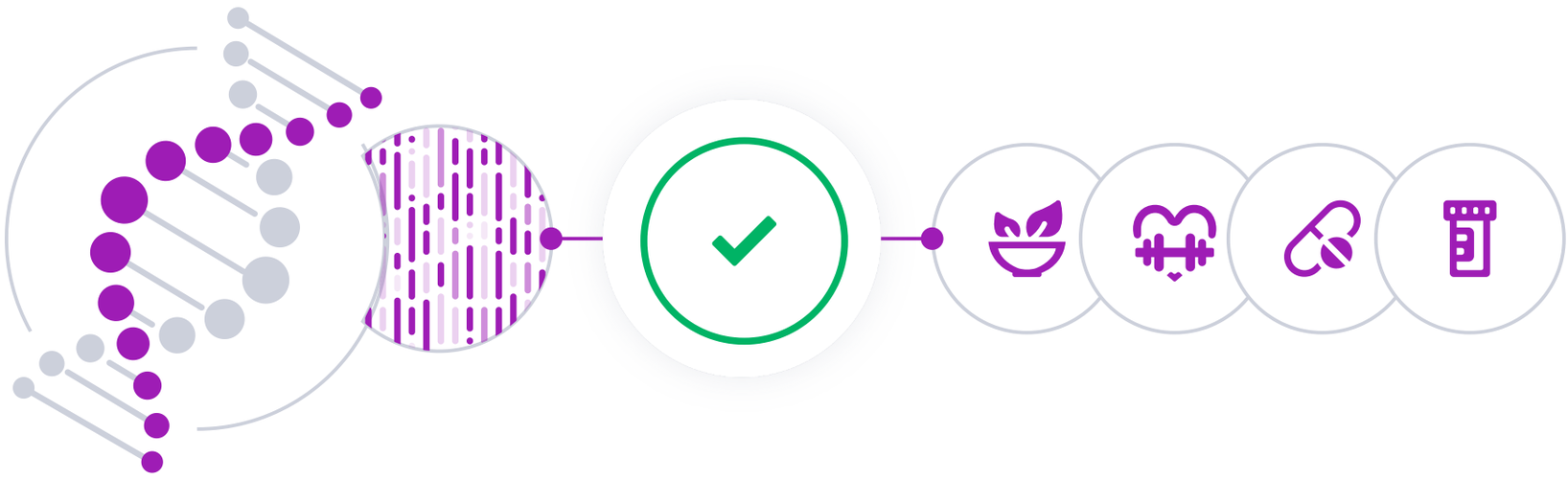


DISCLAIMER

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

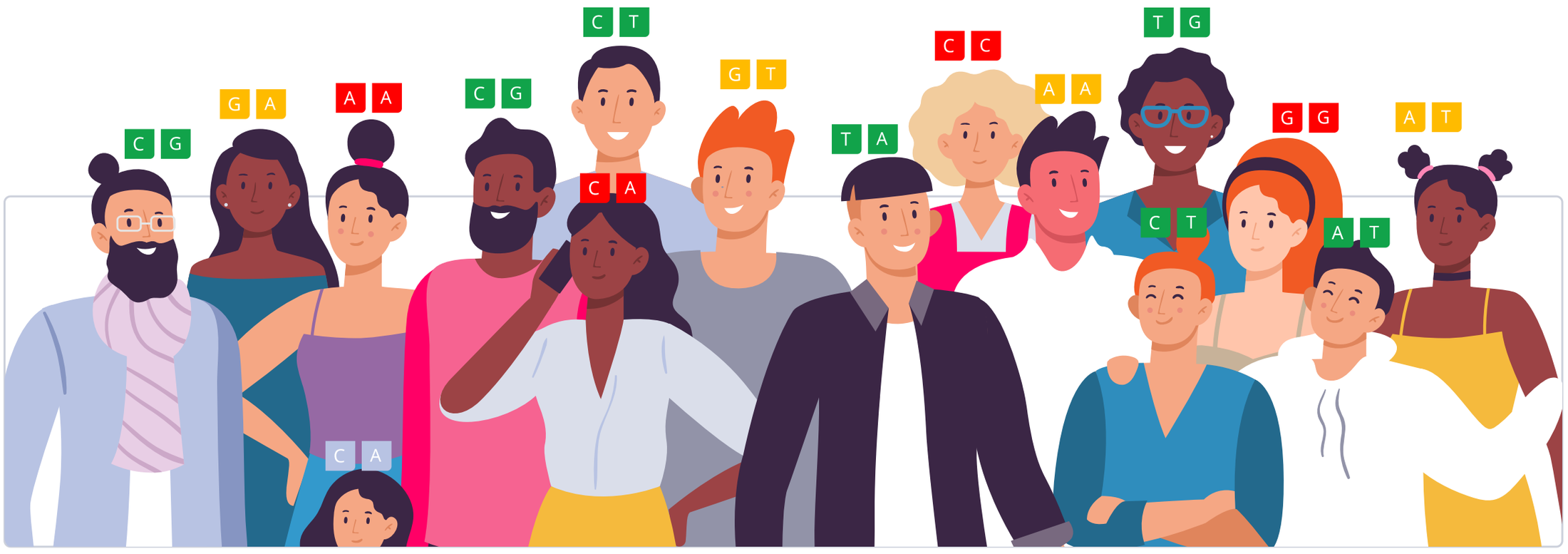
Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.



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.

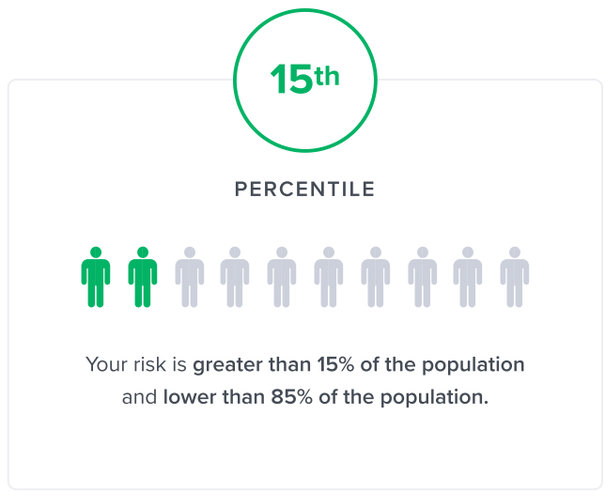
Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



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.

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.



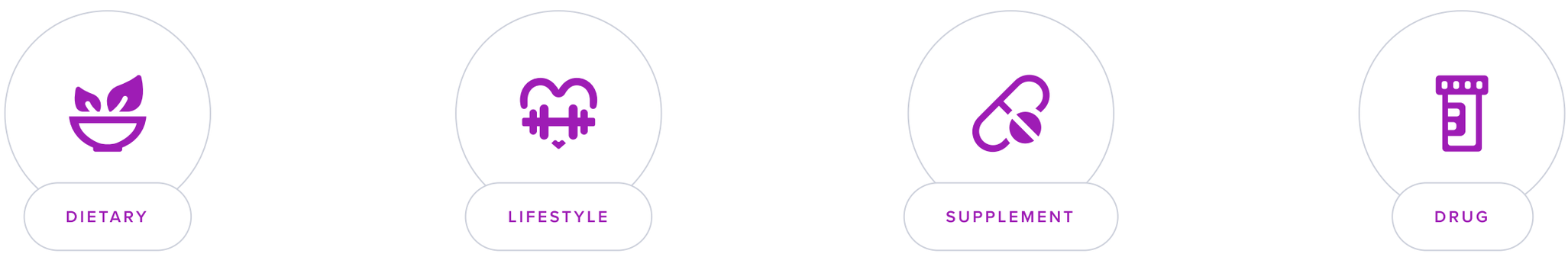
Genotype color info: AA You don't have any risk alleles | AA You have 1 risk allele | AA You have 2 risk alleles

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

A concussion is a type of traumatic brain injury caused by a bump, blow, or jolt to the head or by a hit to the body that causes the head and brain to move rapidly back and forth. This sudden movement can cause the brain to bounce around or twist in the skull, creating chemical changes in the brain and sometimes stretching and damaging brain cells.

Common symptoms of a concussion include:

- Headache or a feeling of pressure in the head
- Temporary loss of consciousness
- Confusion or feeling dazed
- Amnesia about the traumatic event
- Dizziness or "seeing stars"
- Ringing in the ears
- Nausea or vomiting
- Slurred speech
- Fatigue

Some symptoms of concussions may be immediate or delayed in onset by hours or days after the injury.

Risk Factors and Genetics

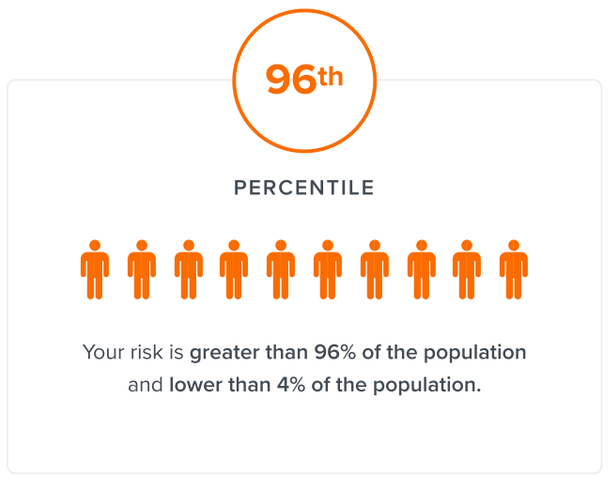
Factors that might increase the risk of getting a concussion include:

- Participation in high-impact or collision sports such as football, hockey, soccer, or boxing.
- Having had a previous concussion.
- Falling, especially in young children and older adults.
- Being involved in a motor vehicle accident.
- Being a pedestrian or cyclist struck by a vehicle.
- Being involved in military combat.
- Being a victim of physical abuse.

While the primary cause of a concussion is a physical trauma, **genetics can play a role in how an individual responds and recovers from a concussion**. Certain genetic factors might influence the brain's structural resilience to injury, susceptibility to inflammation following trauma, and the efficiency of neural repair mechanisms.

MORE LIKELY

More likely to have a concussion based on 341,037 genetic variants we looked at



Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
APOE	rs7412	CC
BDNF	rs6265	TC
PLXNA4	rs117985931	AA
SPATA5	rs144663795	GG
APOE	rs429358	TT

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.

		DOSAGE
1	Aerobic Exercise (Cardio)	1 hour
2	Citicoline (CDP Choline)	250 mg
3	Pet Therapy	30 minutes
4	Pycnogenol	100 mg
5	Focused Attention Meditation	20 minutes
6	Avoid Loud Noises	

1

Aerobic Exercise (Cardio)

IMPACT 3 / 5

EVIDENCE 3 / 5

How to implement

Engage in at least 150 minutes of moderate-intensity aerobic exercise or 75 minutes of vigorous-intensity activity each week. Distribute this time over at least 3 days per week, avoiding consecutive days of vigorous exercise to allow for recovery.

TYPICAL STARTING DOSE

1 hour

Description

Engaging in regular aerobic exercise, such as running, swimming, or cycling, offers numerous health benefits, including improved cardiovascular fitness, weight management, and mood enhancement. It supports overall physical and mental well-being while reducing the risk of chronic diseases.

Cardio, short for cardiovascular exercise, is any type of physical activity that temporarily increases your heart rate. Examples include **running, cycling, swimming, and brisk walking**.

Regular cardio exercise has many benefits for your overall health. It can help lower your risk of heart disease and diabetes, support weight loss, and improve your mood and energy levels. To get the most out of cardio, try to do it for at **least 30 minutes, 3-5 times a week**.

Interval training is a type of cardio that combines periods of high-intensity training with brief rest periods.

How it helps

In six studies, four showed statistically significant improvements in QOL with physical exercise in TBI patients. Meta-analysis suggests a moderate effect [R].

Aerobic exercise improved recovery and reduced post-concussion symptoms and recovery time in adolescents with mild traumatic brain injury (mTBI). However, it did not significantly affect neurocognitive function [R].

Six studies, averaging 42 participants, explored exercise as a brain injury intervention. Three using neuroimaging showed improvement, while cognitive outcomes were mostly inconclusive. Exercise holds promise, particularly in neuroimaging outcomes [R].

Seven randomized controlled trials (RCTs) involving 326 adolescent participants were analyzed. Symptom-limited aerobic exercise programs show significant symptom improvement after a sports-related concussion (SRC), especially when introduced in the acute phase. Three RCTs had a high risk of bias [R].

This study reviewed 12 trials of various therapies for concussions. Subthreshold aerobic exercise improved symptoms but not recovery time. Tailored multimodal interventions sped up recovery for those with persistent symptoms [R].

2

Citicoline (CDP Choline)

IMPACT 2 / 5

EVIDENCE 2 / 5

How to implement

Take 250 to 1000 mg of citicoline (CDP choline) daily, in the morning with or without food. For best results, continue this supplement regimen daily for at least 6 weeks to 3 months.

TYPICAL STARTING DOSE

250 mg

Description

Citicoline is a compound that may have cognitive-enhancing properties and is sometimes used as a dietary supplement to support brain function and memory. It's believed to promote neural health and cognitive performance.

CDP-choline is a molecule naturally produced by the body. It is important for cell structure and function. It also contributes to the production of the chemical messenger acetylcholine [R, R].

The supplement form of CDP-choline is called *citicoline*. It may support brain and eye health. It may also help with drug addictions [R, R].

How it helps

In a single-blind randomized study of 216 patients with severe or moderate head injury, CDP-choline treatment showed improved overall outcomes compared to conventional treatment. Patients on CDP-choline displayed trends of enhanced motor, cognitive, and psychological recovery, with shorter hospital stays, particularly among those with severe injuries [R].

The COBRIT trial investigated citicoline's effects on traumatic brain injury (TBI) in 1213 patients. Citicoline (2000 mg daily) showed no significant improvement in functional and cognitive status compared to placebo over 90 days, concluding citicoline did not benefit TBI patients [R].

In a secondary analysis of the COBRIT trial, patients with traumatic brain injury (TBI) showed high rates of favorable outcomes at 6 months post-injury, with continued improvement beyond. Recovery trajectories were nonlinear, indicating ongoing improvement. The findings suggest that assessing outcomes over time is crucial in TBI clinical trials [R].

3

Pet Therapy

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Engage with a pet, such as a dog or cat, for at least 15-30 minutes a day. This can include activities like playing, petting, or simply sitting together. It's beneficial to do this regularly, aiming for daily interactions, to maximize the emotional and physical health benefits.

TYPICAL STARTING DOSE

30 minutes

Description

Pet therapy, also known as animal-assisted therapy, involves the interaction between trained animals and individuals to provide emotional and physical benefits. Spending time with therapy animals, typically dogs or cats, can reduce stress, improve mood, and enhance overall well-being by promoting relaxation and social interaction, making it particularly beneficial for people facing mental health challenges or chronic conditions.

Animal-assisted therapy, also known as **pet therapy,** involves human-animal interaction to foster physical and emotional healing and provide social support. This therapy may use different animals, such as [R, R]:

- Dogs
- Horses
- Dolphins

Animal-assisted therapy may involve touching, playing, grooming, and talking with the animal [R].

How it helps

A study with 70 severe traumatic brain injury patients found that those receiving canine animal-assisted therapy showed significant improvements in cognitive outcomes, especially in the Rancho Los Amigo Scale and change commands [R].

A randomized trial with 19 brain injury patients revealed that animal-assisted therapy increased self-reported concentration and alertness, despite more instances of distraction, compared to standard therapy [R].

In a study of 19 brain injury patients, animal-assisted therapy significantly enhanced social behavior, verbal and non-verbal communication, and positive emotions, leading to increased mood, motivation, and satisfaction during therapy sessions [R].

4

Pycnogenol

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Take 100 mg of pycnogenol supplement daily. This can be taken in a single dose or divided into two doses of 50 mg each, one in the morning and one in the evening.

TYPICAL STARTING DOSE

100 mg

Description

Pycnogenol (pine bark extract) is derived from the bark of the maritime pine (Pinus pinaster). It has been used in traditional n European folk medicine for centuries, and more recently as a supplement. The extract contains a group of bioactive compounds known as proanthocyanidins, which may be beneficial in supporting cardiovascular health, promoting skin health, and aiding in the management of various conditions related to inflammation and oxidative stress.

Pycnogenol comes from the bark of pine trees that grow in the Mediterranean [R, R].
It may improve [R, R, R, R, R, R]:

- Athletic performance
- Seasonal allergies
- Cognitive function
- Joint health
- Varicose veins

How it helps

A study on 60 adults with mild TBI found that Enzogenol (1000 mg/day) for 6 weeks significantly reduced cognitive failures and was well tolerated R.

In a study with 67 traumatic brain injury patients in ICUs, 150 mg of French maritime pine bark extract supplementation for 10 days significantly decreased inflammation markers (IL-6, IL-1β, CRP) and improved clinical and nutritional statuses, leading to a 15% higher survival rate in the intervention group compared to the control group [R].

5

Focused Attention Meditation

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Sit in a quiet and comfortable place for 10-20 minutes daily, focusing your attention on a single object, thought, or breathing without letting your mind wander. If distractions occur, gently redirect your focus back to the chosen object or activity.

TYPICAL STARTING DOSE

20 minutes

Description

Focused attention meditation is a mindfulness practice that involves concentrating on a specific object, thought, or sensation. It can enhance concentration, reduce stress, and improve overall mental well-being when practiced regularly.

How it helps

In a non-placebo-controlled trial of 20 patients with traumatic brain injury, practicing focused attention mediation 12 min/day for 6 weeks improved neurobehavioral symptoms, anxiety, and depression. Adding neurofeedback to focused attention meditation provided no additional benefits [R].

6

Avoid Loud Noises

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Limit exposure to loud noises by keeping the volume down on personal audio devices, wearing earplugs at concerts or noisy work environments, and taking breaks in quiet areas when possible. Attempt to maintain noise levels below 85 decibels, especially for prolonged periods, to protect your hearing.

Description

Most sounds you're exposed to daily are quiet. However, there are times when sounds can be uncomfortably loud. **Exposure to loud noise for long periods of time can damage the cells of the inner ear**. This may lead to hearing impairment and conditions like tinnitus.

Exposure to loud noises may damage the inner ear or the auditory nerve. This may lead to hearing impairment or conditions like tinnitus [R, R].

Potentially damaging noises can be anything at a volume **above 70 decibels** (dB). The louder the noise, the less time it takes to cause damage to your ear. For reference, some volume levels of common sounds include [R, R]:

- Whispering (30 dB)
- Normal conversation (60-70 dB)
- Motorcycle (95 dB)
- Ambulance siren (110-129 dB)
- Fireworks, gunshots (140-165 dB)

How it helps

Avoiding loud noises is crucial for individuals with concussions, as it minimizes the risk of triggering or worsening symptoms like headaches and dizziness. This protective measure aids in creating a conducive healing environment for the brain.