

# Fitness

## Summary Report

REPORT CATEGORY —



FITNESS

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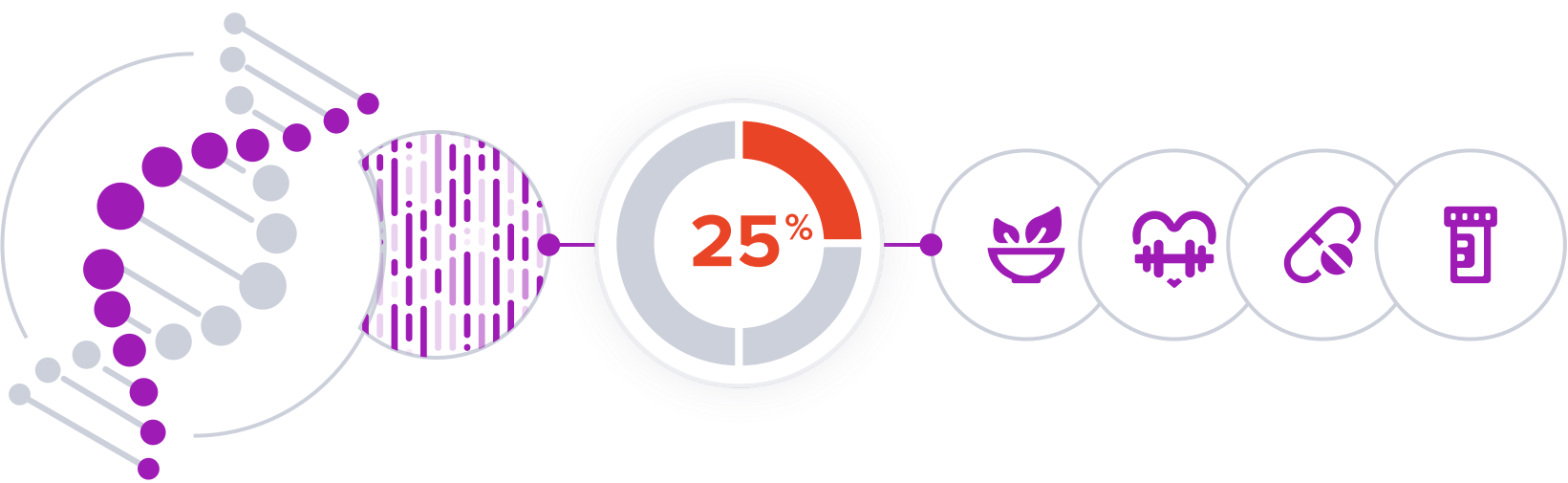


DISCLAIMER

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.

# How this works

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



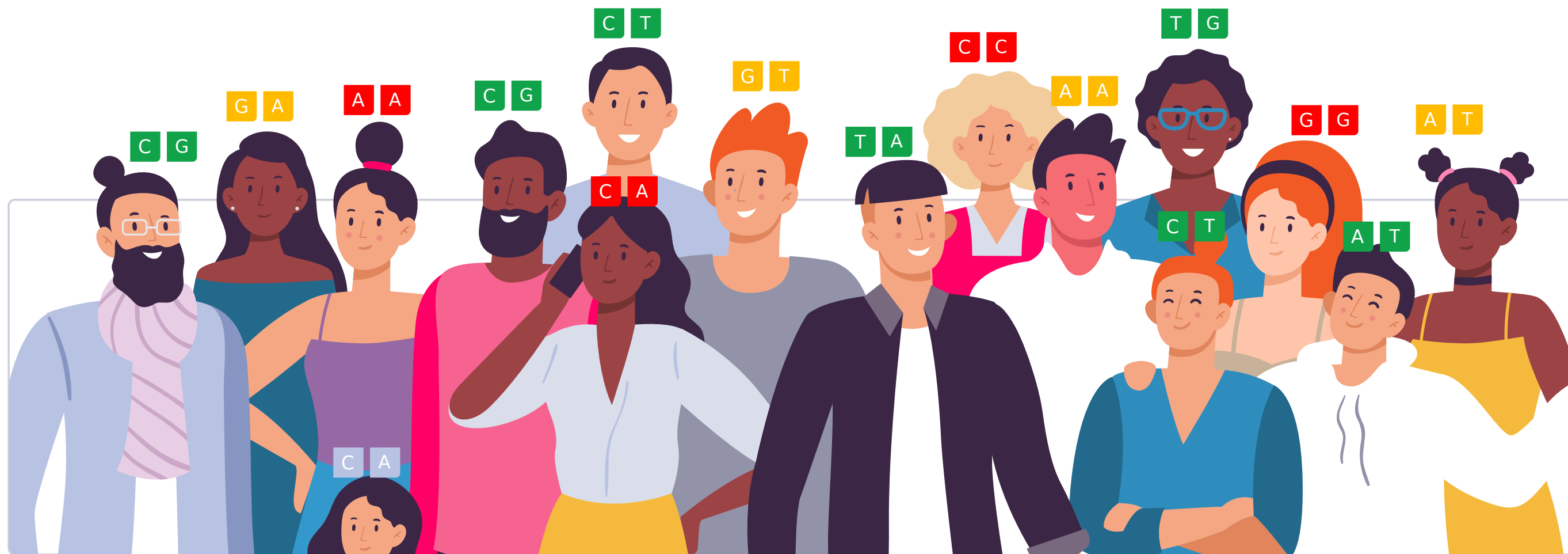
Similarly, our Trait Reports look at how your DNA influences your traits.

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.

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

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.



Summary

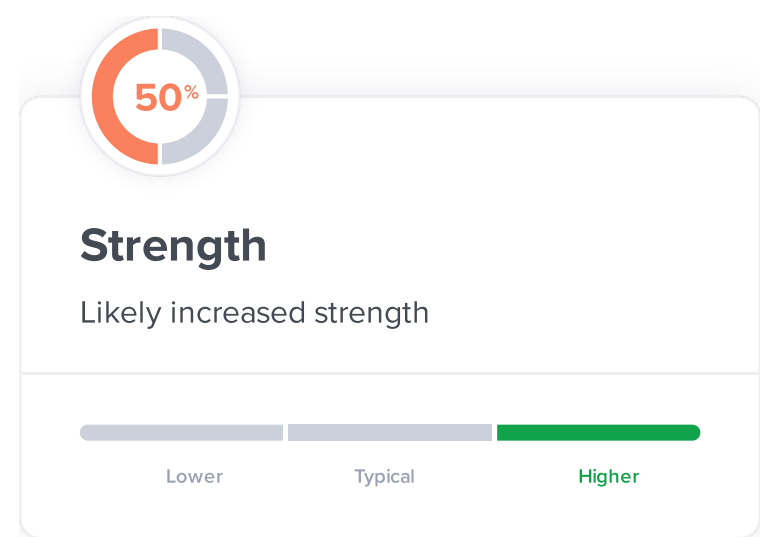
The gauge tells you about the share of strength, power, and endurance exercises in your optimal training. For example, if strength is your genetically stronger weapon, you may want to focus on strength training but still include other types to maintain an optimal balance.



Breakdown

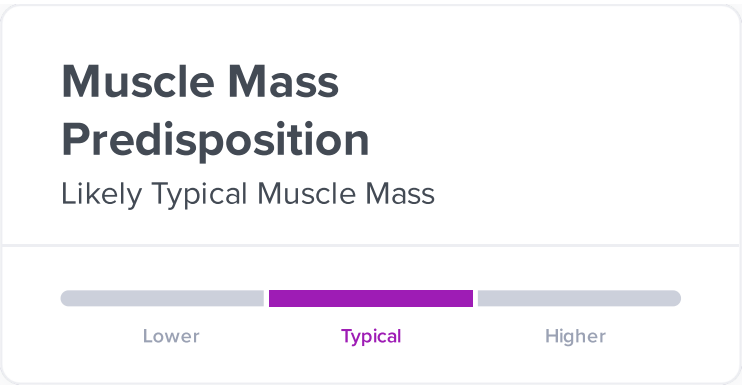
The bar tells you about your genetic predisposition to each type of performance: power, endurance, and strength. Each bar has three segments, corresponding to lower, typical, and higher performance.

The gauge tells you how much your training should focus on a particular performance type. For example, H (high) for strength means that you’re genetically more suited for strength training. The chart tells you about the share of that performance in your overall training (50% in this example).



Optimal Sports

This section takes into account your genetics of power, strength, and endurance to suggest sports that may be the best picks for you. Some sports require more power, while others require more endurance or strength. That’s why your genetics may be an important factor when choosing the right sport.



Muscle Mass

The bar tells you about your genetic predisposition for muscle mass. It has three segments, corresponding to lower, typical, or higher muscle mass.

### Exercise Recovery

The bar tells you how quickly you tend to recover from exercise, based on your genes. It has three segments, corresponding to slower, typical, and faster exercise recovery.

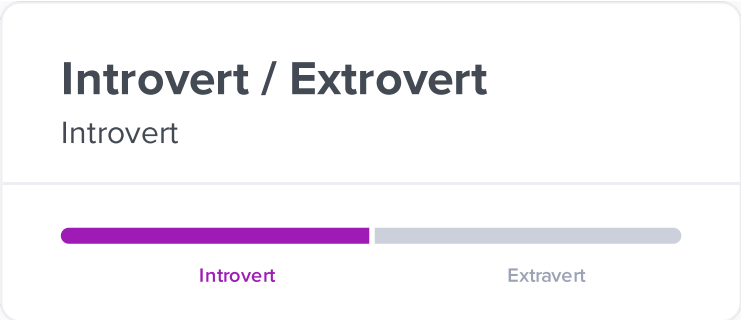


### Injury Risk

The bars tell you about your genetic susceptibility to different sports injuries. Each bar has three segments, corresponding to lower, typical, or increased likelihood of an injury.

### Personality

The bars tell you about your genetic predisposition to a particular personality trait. These traits may influence your optimal sports choice.



## Some things to keep in mind:

- The scores/gauges use the latest scientific studies. But they are not perfect and will change as the models improve.
- Not everyone with risk variants will develop a health condition.
- Genetics is not the whole story. Your health is most often a combination of genetics, lifestyle, and environmental factors. Great news, as this means that you can often change your lifestyle to lower your risk.
- Results might be more accurate for some ethnic groups than others. This depends on the studies used in each report.
- People without risk variants can also develop health conditions.
- It's important to work with your doctor to better understand your risks. Our reports do not diagnose or treat any health condition. They are not a substitute for medical advice. If you're diagnosed with a certain health condition, follow your doctor's advice.

# Summary

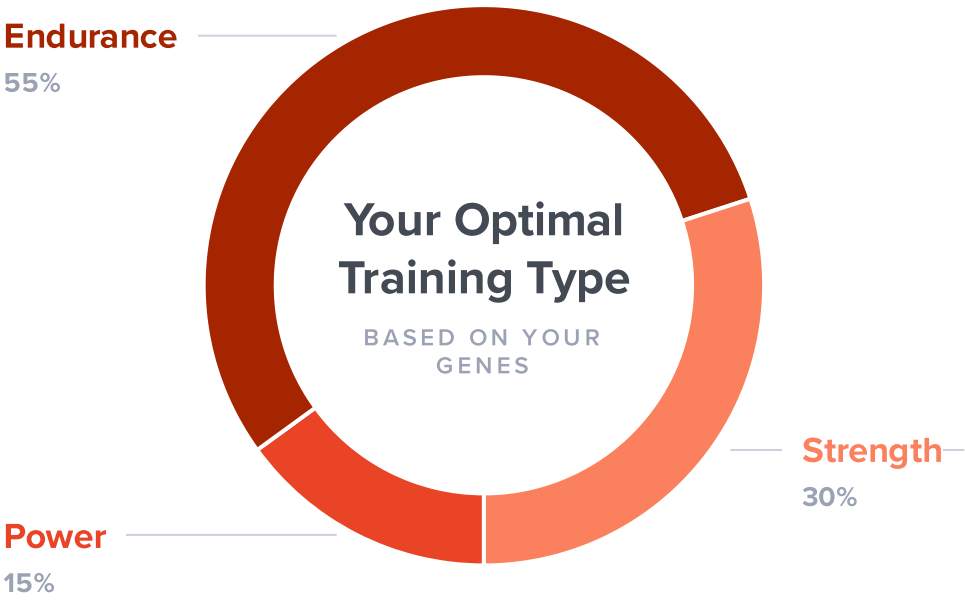
Have you ever tried a friend’s fitness routine and felt like it just wasn’t working for you? It could have been because it wasn’t catered to the types of performance workouts that are best suited for your body!

There are three main types of performance: power, strength, and endurance. How well your body performs with these different types of training greatly depends on your genetics.

This report will help you discover the types of workouts that your body will likely respond best to so that you can follow the most optimal fitness regimen for you.

We’ll also go over your genetic predisposition to other fitness-related traits for a more complete picture about the optimal sports for your genes, such as:

- Muscle mass
- Exercise recovery
- Sports injuries
- Personality traits



## Your weekly training regimen

Based on your goal to exercise **3 hours** per week

### Your Optimal Workouts

Spend your time in the gym each week based on the breakdown below.



**Power Training**  
27 minutes



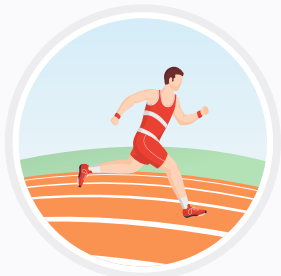
**Endurance Training**  
99 minutes



**Strength Training**  
54 minutes

### Your Optimal Sports

Each of these sports provide an optimal balance of **15% power**, **55% endurance** and **30% strength**.



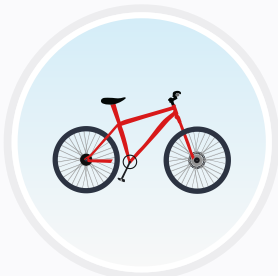
**Running:**  
Distance



**Soccer**



**Swimming:**  
Distance



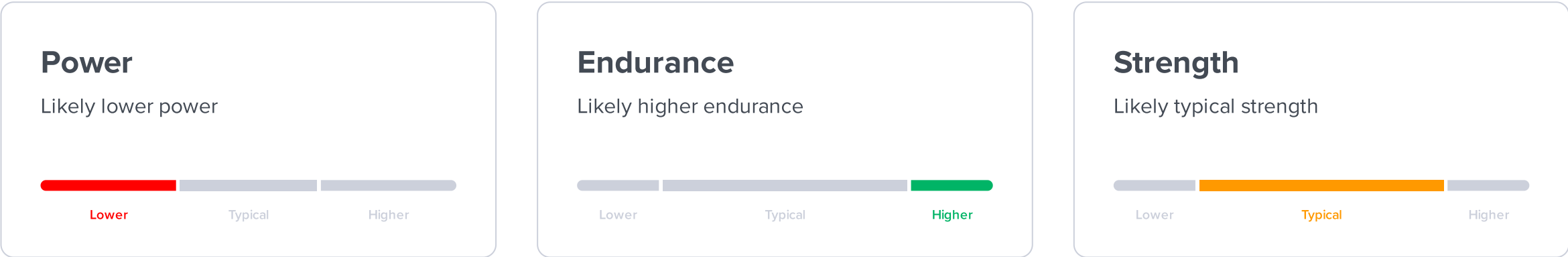
**Cycling**



**Nordic Skiing**

# Overview of Your Results

## Breakdown



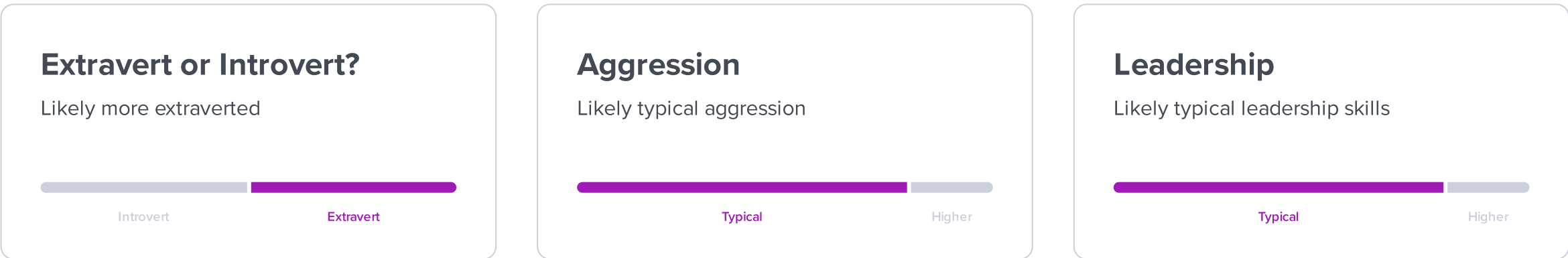
## Muscle & Recovery



## Injury Risk



## Personality





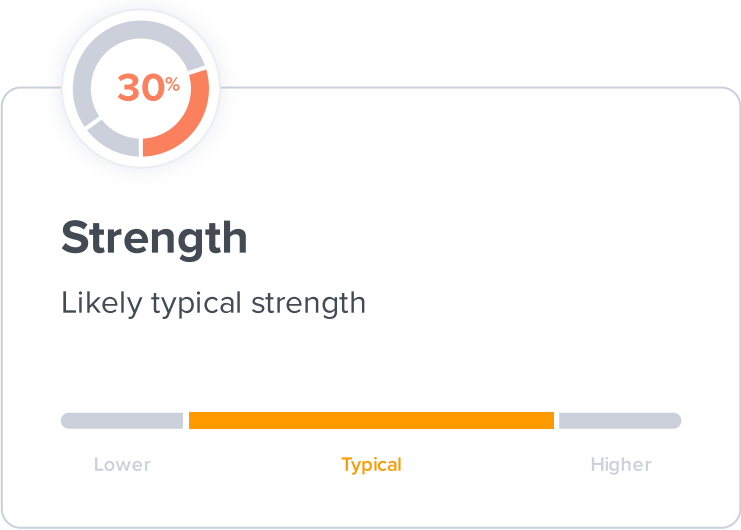
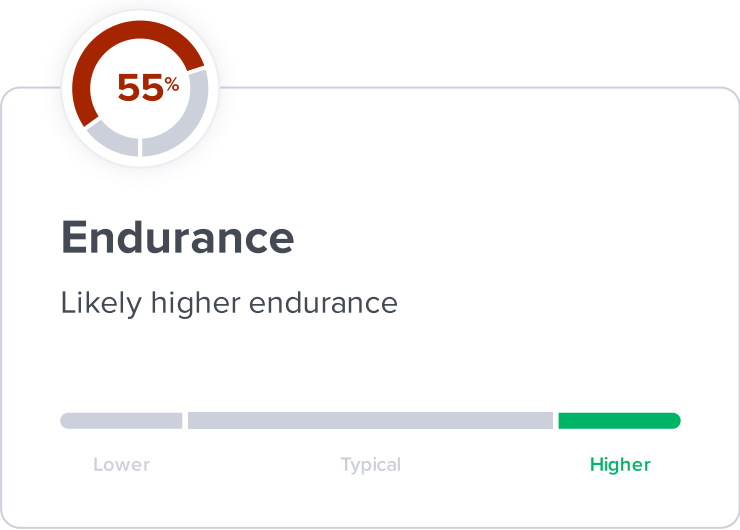
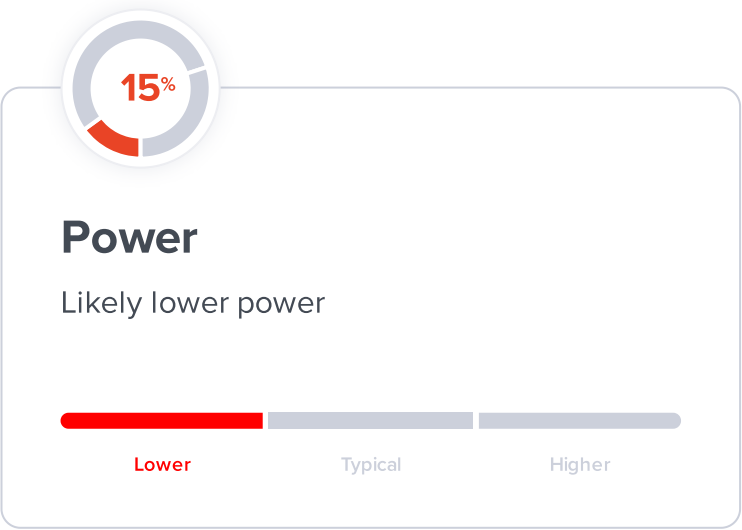
# Your Results in Details



## Breakdown

There are three types of muscle performance: power, endurance, and strength.

Your genes affect your muscle performance by changing the types and amount of your muscle fibers. Muscle fibers impact what activities we’re good at! **Fast-twitch fibers** support rapid movements, and they are common in power athletes. **Slow-twitch fibers** support milder long-term movements, and they are more common in endurance athletes [\[R\]](#), [\[R\]](#).



# Power

Power is the ability to produce short, intense movements. Movements that require a lot of power include sprinting, jumping, and throwing [\[R\]](#).



## Your Result



PERSONALIZED TO YOUR GENES

You don’t carry the [ACTN3](#) variant linked to increased muscle power. People without this variant are less likely to be elite power athletes.

If you’re interested in power training, stick with it! Training can overcome a low genetic predisposition for power. However, if you want to follow your genes, consider focusing on endurance and strength training.

## Your Gene Table

We tested one [ACTN3](#) gene variant because it’s been shown to affect peoples’ power. This gene creates a protein found in muscle fibers that generate power [\[R\]](#).

GENE	VARIANT	GENOTYPE
HFE	rs1799945	CC
GABPB1	rs7181866	AA
GABPB1	rs8031031	CC
SLC16A1	rs1049434	TT
TTN	rs10497520	CC
KDR	rs1870377	TT
PRDM1	rs10499043	CC
ADRB3	rs4994	AA
GSTP1	rs1695	AA
HIF1A	rs11549465	CC
TSHR	rs7144481	TT
CNDP2	rs6566810	TT
DES	rs7564856	AG
SATB1	rs4973706	TC
PPARGC1A	rs8192678	TC
ADRB2	rs1042713	GA
ADRB2	rs1042714	GC
CHRNA3	rs4950	AG
COL5A1	rs12722	CT
GNB3	rs5443	CT

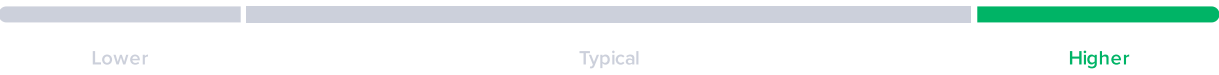


# Endurance

Endurance is the ability to produce low-intensity movements for a long period of time. Activities that require a lot of endurance include cycling, running, and swimming [\[R\]](#).



## Your Result



PERSONALIZED TO YOUR GENES

Based on the genetic variants we looked at, you likely have increased endurance.

Take advantage of your genes, and consider focusing on endurance training! Alternatively, you may want to focus on improving other types of performance you aren’t as strong in.

## Your Gene Table

We tested several of your genetic variants to determine your genetic predisposition for endurance. They may affect your oxygen use, heart function, and muscle type [\[R, R, R, R, R, R, R\]](#).

GENE	VARIANT	GENOTYPE
HFE	rs1799945	CC
GABPB1	rs7181866	AA
GABPB1	rs8031031	CC
SLC16A1	rs1049434	TT
TTN	rs10497520	CC
KDR	rs1870377	TT
PRDM1	rs10499043	CC
ADRB3	rs4994	AA
GSTP1	rs1695	AA
HIF1A	rs11549465	CC
TSHR	rs7144481	TT
CNDP2	rs6566810	TT
DES	rs7564856	AG
SATB1	rs4973706	TC
PPARGC1A	rs8192678	TC
ADRB2	rs1042713	GA
ADRB2	rs1042714	GC
CHRNA3	rs4950	AG
COL5A1	rs12722	CT
GNB3	rs5443	CT

# Strength

Strength is the maximum force applied in one movement. A good example of a movement requiring high strength is lifting weight in a single movement, like the bench press or squat [\[R\]](#).



## Your Result



PERSONALIZED TO YOUR GENES

Based on the genetic variants we looked at, you likely have typical strength.

To build your strength, consider taking part in strength (resistance) training and getting more protein in your diet. Try to combine it with endurance and power training for an optimal balance.

## Your Gene Table

We tested several of your genetic variants to determine your genetic predisposition for strength. They may influence the size and proportion of different muscle fibers [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

GENE	VARIANT	GENOTYPE
HIF1A	rs11549465	CC
TBC1D7	rs6905419	TT
BDNF	rs10501089	CC
/	rs9320823	CC
SLC16A1	rs1049434	TT
LRPPRC	rs10186876	GG
NUDT2	rs41274853	GA
LEMD2	rs12055409	GA
PPARG	rs1801282	CG
MTHFR	rs1801131	TG
IGF2	rs680	CT
AMPD1	rs17602729	AG
ZNF608	rs4626333	CC
ACVR1B	rs2854464	AA
PITX3	rs2273555	AA
ACTN3	rs1815739	TT





# Muscle & Recovery

Are some people genetically wired to be better athletes? You probably know someone that's always involved in some type of intense athletic activity. While training and exercise habits are crucial, your genes also play a part! Your genetics influences your muscle mass, ability to do intense cardio, and the amount of time it takes for you to recover from exercise.

## Muscle Mass

Likely lower muscle mass



## Exercise Recovery

Likely typical recovery after exercise



## VO2 Max

Likely typical VO2 max

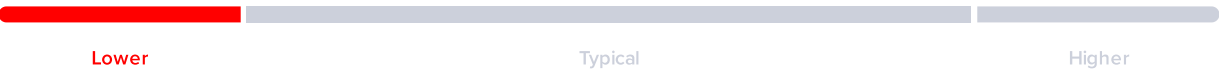


# Muscle Mass

Muscle mass is the amount of all the muscles in your body. It mostly refers to muscles that you can control (skeletal muscles). A person having more body fat also has lower muscle mass because both are usually given as a percentage of total body weight [\[R\]](#), [\[R\]](#), [\[R\]](#).



## Your Result



PERSONALIZED TO YOUR GENES

Based on the genetic variants we looked at, you likely have lower muscle mass. In other words, you may have less muscle mass and more fat tissue.

Take steps to increase and maintain your muscle mass. Practice strength (resistance) training and increase the amount of protein in your diet.

## Your Gene Table

We tested several genetic variants known to affect your muscle and fat mass [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

GENE	VARIANT	GENOTYPE
RPN1	rs111804884	TT
GJA3	rs73442383	TT
STEAP1B	rs10242595	AG
IL1B	rs1143634	GA
RASSF10	rs543716802	GG
AOAH	rs78185366	TT
LEO1	rs190878891	AA
USP34	rs183237934	TT
MARCHF1	rs150541056	TT
CCDC171	rs117635839	AA
ZMAT4	rs184622626	AA
AQP6	rs706798	AA
ZDHHC14	rs749547	GA
ERMAP	rs111455041	CT
FTO	rs9939609	TT
MTCH2	rs4752856	GG
ZNF648	rs190210789	AA
PRELID2	rs574519712	CC
DOCK3	rs551736560	GG
ATG7	rs193172711	GG



# Exercise Recovery

Exercise puts stress on the body. Our bodies need time to recover after each bout. After exercise, it’s common to feel tired and sore. Some people may recover from exercise more quickly and easily than others. Part of the reason for this may be genetic.

## Your Result



PERSONALIZED TO YOUR GENES

Based on the gene variants we looked at, your exercise recovery is likely typical.

Using methods like massage and cold application may help speed up recovery.



## Your Gene Table

We tested several of your genetic variants involved in exercise recovery. They may influence nerve, heart, and muscle function, as well as blood sugar levels [\[R, R, R, R, R\]](#).

GENE	VARIANT	GENOTYPE
FTO	rs9939609	TT
SLC16A1	rs1049434	TT
HGF	rs5745697	GG
HGF	rs5745678	GG
IGF2	rs4244808	TT
SPP1	rs28357094	TG
CCR2	rs3918358	CA
CCR2	rs1799865	CT
CCL1	rs3917878	CT
CCL8	rs2857656	CG
IL1B	rs1143634	GA
IGF2	rs680	CT
IGF2	rs3213221	GC
C11ORF21	rs3842748	CG
COL5A1	rs12722	CT
CYBA	rs4673	AG
IL6	rs1800795	GC
SOD2	rs4880	AG
MICB	rs1800629	GA
ACTN3	rs1815739	TT

# VO2 Max

Maximal oxygen uptake (VO2 max) is the **maximum amount of oxygen (O2) that your body can absorb and use during exercise**. In a nutshell, VO2 max indicates your aerobic fitness. A higher VO2 max means a higher ability for intense cardio exercise (e.g., running, swimming) [\[R, R, R\]](#).


About **45-70%** of differences in people’s VO2 max may be due to **genetics** [\[R, R\]](#).

## Your Result

Lower

Typical

Higher

 PERSONALIZED TO YOUR GENES

Based on the genetic variants that we looked at, you are predisposed to a typical VO2 max. In other words, you may have typical ability for intense cardio exercise like running or swimming [\[R\]](#).

However, keep in mind that your fitness level has a major impact on VO2 max. Regular cardio workout will help you increase VO2 max.



## Your Gene Table

We tested several genetic variants that influence your VO2 max. These variants may also influence the odds of obesity, heart disease, diabetes, and more [\[R, R, R\]](#).

GENE	VARIANT	GENOTYPE
NUP93	rs78291913	CC
KCND3	rs269071	GG
SCN10A	rs6801957	TC
TGM2	rs4811602	GA
ERBIN	rs251295	GA
MOXD1	rs589756	CC
KLRK1	rs10743889	TT
POLM	rs10232743	CC
RSU1	rs11254160	AG
CCDC141	rs10497529	GG
CCDC141	rs142556838	CC
SEC31B	rs11190709	AA





# Injury Risk

Joints, tendons, and ligaments are commonly injured body parts. Based on studies in families and twins, our genes can play a role in injuries. We looked at your genes to help understand your susceptibility to different injuries [\[R\]](#).

## Knee Injury

Less likely to have a knee injury



## Achilles Tendon Injury

More likely to have an Achilles tendon injury



## Ankle Injury

Less likely to have an ankle injury



## Rotator Cuff Injury

Typical likelihood of a rotator cuff injury



# Knee Injury


The knee is a joint that connects the bones of the thigh and the lower leg. The knee is very complex and bears a great deal of stress from everyday activities and exercise. This makes it one of the most easily injured joints. The most common knee injuries include injuries to the anterior cruciate ligament (ACL), knee bursitis, and injuries to the meniscus [\[R,R\]](#).

## Your Result

Less Likely

Typical Likelihood

More Likely

 PERSONALIZED TO YOUR GENES

Based on the genetic variants we looked at, you may be less likely to develop a knee injury.

Try to take preventative measures, such as stretching and strengthening your thigh muscles, to potentially decrease your risk even more.



## Your Gene Table

We tested several of your genetic variants to determine your risk for knee injuries. They may affect bone growth, ligament growth and repair, and blood vessel function [\[R,R,R\]](#).

GENE	VARIANT	GENOTYPE
ZC3H11B	rs112081086	AA
PRRX1	rs151077542	GG
BRINP3	rs72727240	TT
XCL1	rs148262095	GG
SPAG17	rs139101248	GG
MAB21L3	rs79678808	AA
AURKAIP1	rs138046143	TT
COQ8A	rs56339347	AA
NEK7	rs138440178	CC
/	rs567271467	GG
/	rs567271467	GG
FCMR	rs1800895	CC
NR5A2	rs34004246	GG
SYT2	rs145533858	CC
/	rs192853607	GG
CDC42BPA	rs573881227	CC
USH2A	rs140693748	CC
ZC3H11B	rs147060837	AA
/	rs146266096	CC
/	rs146266096	CC

# Achilles Tendon Injury

The Achilles tendon is a cord made of strong tissue. It is found in the lower back leg and connects the calf muscles to the heel bone. Common Achilles tendon injuries include inflammation (tendonitis) and rupture [\[R\]](#).



## Your Result



PERSONALIZED TO YOUR GENES

Based on the genetic variants we looked at, you may be more likely to develop an Achilles tendon injury.

To prevent an Achilles tendon injury, try to [\[R\]](#), [\[R\]](#):

- Stretch and strengthen your calf muscles
- Warm up properly and ease into your workouts
- Alternate high-impact sports with low-impact ones (e.g., alternating running with walking)
- Avoid exercising on hard, uneven, or slippery surfaces
- Use proper equipment (e.g., well-fitting, cushioned running shoes)
- Avoid wearing high heels for long periods of time

## Your Gene Table

We tested several of your genetic variants to determine your risk for Achilles tendon injuries [\[R\]](#).

GENE	VARIANT	GENOTYPE
COL1A1	rs1800012	CC
MMP1	rs650108	AG
MICB	rs1800629	GA
CPNE1	rs143383	AA
MMP1	rs591058	CT
TIMP2	rs4789932	AG
SOAT1	rs113435565	AC
FCN2	rs1134170	TT
/	rs11960097	TG
COL5A1	rs12722	CT
MPP7	rs6481512	TT
MPP7	rs1249269	CT
MRPL43	rs4919510	CG
VEGFA	rs699947	AA
CDCP1	rs183364169	CC
DPP6	rs4067493	CC
TRIML1	rs60713544	GG
ZNF648	rs57104447	TT
MPP7	rs1937810	TT
MPP7	rs1937810	TT



# Ankle Injury

The ankle is a joint that connects the bones of the foot to the bones of the leg. It has a wide range of motion: it can bend sideways, upward, and downward. An ankle sprain is the most common type of ankle injury [\[R\]](#).



## Your Result



PERSONALIZED TO YOUR GENES

Based on the genetic variants we looked at, you may be less likely to develop an ankle injury.

Try to take preventative measures to potentially decrease your risk even more. These include stretching and strengthening your ankle, wearing proper sports shoes, and maintaining a healthy weight.

## Your Gene Table

We tested several of your genetic variants to determine your risk for ankle injury [\[R\]](#), [\[R\]](#).

GENE	VARIANT	GENOTYPE
RALGPS2	rs187271145	GA
/	rs270481	AA
MTIF3	rs67227314	CT
ISOC1	rs35100037	CT
UGDH	rs56118664	CC
/	rs139095264	GG
PRR16	rs4340940	CC
CHD9	rs72797642	AA
GATA3	rs142347570	AA
NPY2R	rs115005126	TT
NFIB	rs13286037	TT
SGO1	rs12489876	GG
RABEPK	rs117724125	CC
ASB18	rs78681719	TT
C8ORF48	rs73210044	GG
GRIA1	rs140053818	GG
DLC1	rs73208003	GG
NTS	rs10506913	AA
/	rs75670712	TT
COL5A2	rs62182422	CC

# Rotator Cuff Injury


The rotator cuff is a group of muscles and tendons that surround the shoulder joint. They keep the upper bone of the arm within the shoulder socket and help you lift and rotate your arms. Symptoms of a rotator cuff injury include a dull pain in the shoulder, shoulder weakness, and movement difficulties [\[R, R\]](#).

## Your Result

Less Likely

Typical Likelihood

More Likely

 PERSONALIZED TO YOUR GENES

Based on the genetic variants we looked at, you may have a typical likelihood of developing a rotator cuff injury.

Try to take preventative measures to potentially decrease your risk. These include stretching and strengthening your shoulder muscles and avoiding repetitive overhead arm movements.



## Your Gene Table

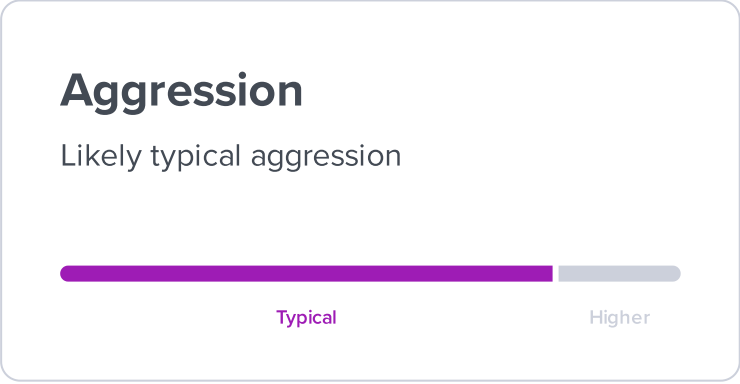
We tested several of your genetic variants to determine your risk for rotator cuff injuries. They may affect tendon growth and repair, inflammation, and blood vessel development [\[R, R, R\]](#).

GENE	VARIANT	GENOTYPE
/	rs140539211	CC
DLC1	rs34045652	CC
RPS29	rs1010586	CC
GLCCI1	rs4725069	CC
CPE	rs138457734	CC
STOML3	rs147482720	TT
ANXA1	rs74821598	TT
RORB	rs72727137	GG
USP6NL	rs3847425	CC
CCDC110	rs11727025	GG
KBTBD3	rs505416	GG
AOAH	rs3807160	GG
CPNE1	rs2104009	GG
GDNF	rs60486174	TT
PLCB1	rs6140637	AA
LONRF1	rs17769850	TT
S100A12	rs143640806	AA
POTEC	rs117141423	GG
MGAT2	rs186974390	CC
ERBB3	rs182687492	AA



# Personality

Physical features are crucial for fitness, but they are not everything! The sports you prefer can greatly depend on your personality as well. That's why we analyzed your genetic predisposition to relevant personality traits. The results in this section will help make a complete picture of your optimal fitness regimen [\[R\]](#), [\[R\]](#), [\[R\]](#).





# Extravert Or Introvert?


Some people thrive on being in big groups. Others need a lot more quiet time alone to feel their best. We call these people extraverts and introverts. For example, an extravert is likely to be talkative, outgoing, and energetic. By contrast, an introvert is likely to be quiet, shy, and reserved.

In line with this, extraverts may be more likely to prefer team sports, while introverts may enjoy individual sports [\[R\]](#), [\[R\]](#).

## Your Result

Introvert

Extravert

 PERSONALIZED TO YOUR GENES

Based on the gene variants we looked at, you are likely more extraverted. That means you may thrive on social interaction with lots of other people [\[R\]](#).

This trait may influence your choice of profession, hobbies, and sports. For example, you may enjoy team sports more [\[R\]](#).



## Your Gene Table

We tested many of your gene variants that influence extraversion. Interestingly, some of these variants have also been linked to mental health conditions [\[R\]](#).

GENE	VARIANT	GENOTYPE
DAB2IP	rs1010235	AA
RASSF2	rs6084912	CC
CCDC83	rs56160063	AG
GBE1	rs57590327	TT
MTMR9	rs2164273	GG
PCDH15	rs6481128	GG
RBFOX1	rs7498702	CT
WSCD2	rs1426371	GA
LRGUK	rs137925278	AA
EXOC4	rs117910294	AA
AADAT	rs114377628	TT
SLC29A3	rs556580453	GG
PPFIA2	rs142468221	TT
RNF8	rs148082170	AA
PIAS1	rs111650392	CC
FOXP1	rs189489530	GG
SNX16	rs117898492	CC
CAAP1	rs149314543	GG

# Aggression


Aggression is the instinct that drives humans and animals to anger and violence. Excessive and uncontrolled aggression can cause major problems [R].

People with higher aggression may prefer contact and combat sports. However, anger can be draining and harmful. Even athletes benefit from learning to relax and soothe their temper [R, R].

## Your Result

Typical

Higher

 PERSONALIZED TO YOUR GENES

Based on the variants we looked at, your aggression is likely typical. This trait may influence your life choices, including your favorite sports.

Less aggressive people may prefer sports that don't involve physical contact.



## Your Gene Table

We tested many of your gene variants that influence aggression. Some genes that impact aggression are involved in pleasure and stress response [R, R, R].

GENE	VARIANT	GENOTYPE
QSER1	rs16924133	AA
PLEK	rs7578047	AA
TRIM31	rs2844775	GG
UQCRFS1	rs8102754	AA
HAND1	rs9324787	AA
KLF6	rs17252078	CC
DPY19L1	rs6954895	CT
IYD	rs670292	CG
PLA2G2D	rs1567102	TC
ABAT	rs1299926	AA
GREM2	rs16840114	AA
FYN	rs2148710	CC
PNLIP	rs12249434	CC
/	rs6834498	TT
E2F3	rs555017	GG
PHEX	rs3752433	CC
CSE1L	rs6012564	AA
AP1S1	rs2227692	CC
SMPDL3A	rs7768692	TT

# Leadership

People tend to have different ideas about what makes a good leader. However, most agree that good leaders can help a group reach a common goal. Experts are still debating what sort of personality lends itself best to leadership. It turns out that good leaders are hard to define [R, R, R].

Leaders or captains are crucial in team sports. This type of personality helps them lead their teams toward better results [R].

## Your Result

Typical

Higher

PERSONALIZED TO YOUR GENES

Based on the genetic variants we looked at, you may have typical leadership skills.

You are not very likely to assume leadership roles, such as a manager at work or a captain in team sports.



## Your Gene Table

We tested many of your gene variants that influence leadership. These variants may play a role in brain function, mental health, and wellbeing [R, R].

GENE	VARIANT	GENOTYPE
COL8A1	rs11705896	GG
DENND1A	rs73665339	CC
DENND1A	rs55734239	GG
DENND1A	rs58139942	GG
DENND1A	rs113133993	CC
DENND1A	rs73665347	TT
DENND1A	rs73665340	GG
DENND1A	rs4836940	TT
DENND1A	rs73665342	AA
/	rs116266809	CC
DENND1A	rs75032775	GG
TRHDE	rs36094040	TT
DENND1A	rs4838072	CC
DENND1A	rs73665346	CC
DENND1A	rs111849916	CC
DENND1A	rs112205541	CC
DENND1A	rs4838075	AA
DENND1A	rs73665345	GG