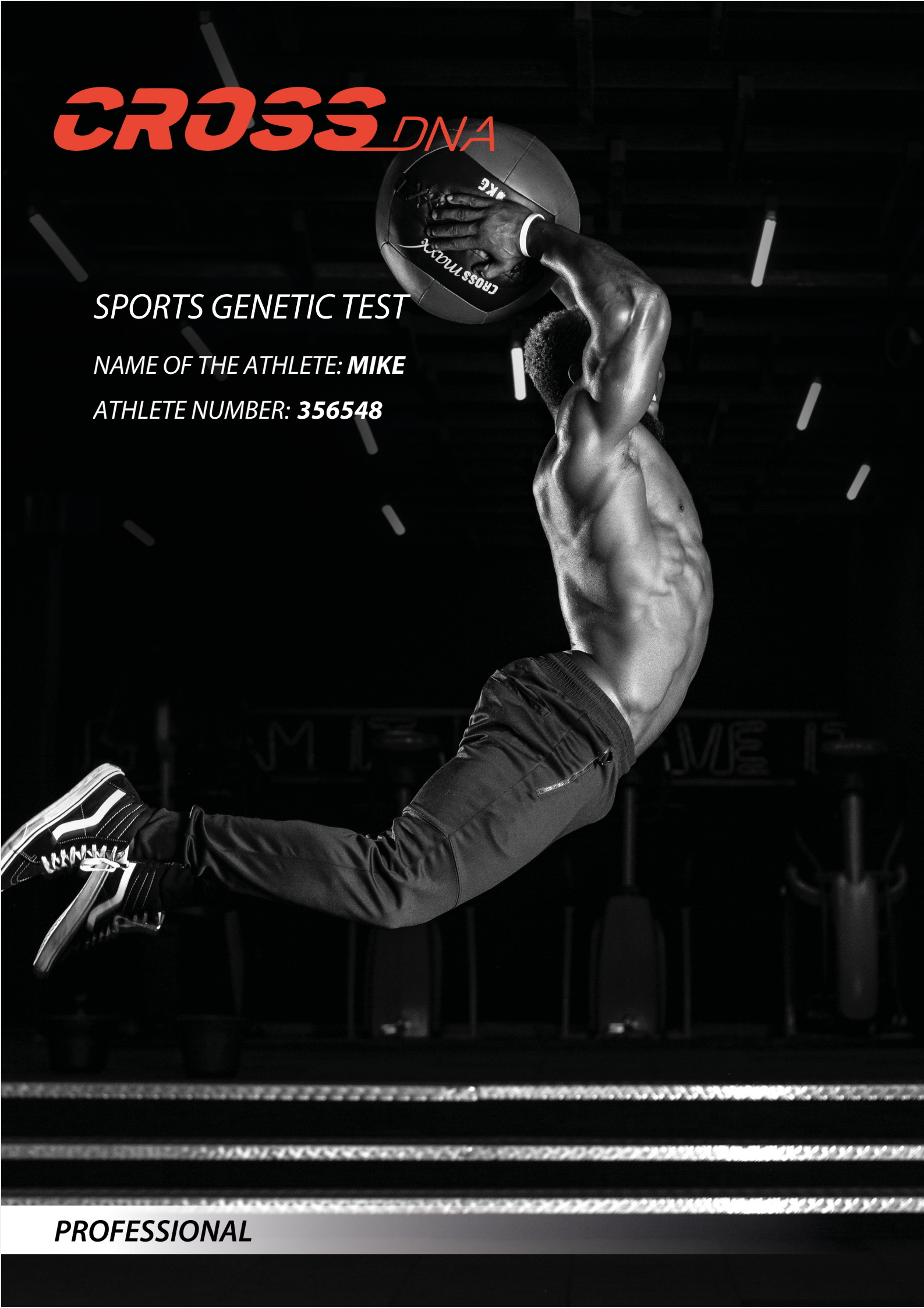
CROSS DNA



SPORTS GENETIC TEST

NAME OF THE ATHLETE: **MIKE**

ATHLETE NUMBER: **356548**

PROFESSIONAL

Table of Contents

Genetics play an important role in your training.

Until now, you were able to know your skills and limitations thanks to your sensations in the sport, physical tests and clinical analyses.

In the 21st century a new variable comes into play: You can learn more about your potential thanks to CrossDNA's sports genetic test.

Discover in this report relevant characteristics about your training skills. So that you can get the best out of yourself, and so that you can discover your "limits".

This report is not valid for clinical or diagnostic use.

CrossDNA. Meet your unlimits.

Introduction

The attached report is an added value for sports training, both amateur and professional. In it you can find your genetic predisposition with respect to multiple variables linked to sports performance, such as the risk of suffering injuries, the capacity to lower pulses or the potential to develop high levels of muscle strength.

But CrossDNA is not just about your sporting traits. We know that sports training encompasses other factors in your physiology. Thanks to the sequencing of your DNA and its subsequent analysis, you will know how your body responds to the intake of nutrients such as fats and carbohydrates, or to the convenience of supplementation with certain vitamins and minerals, which is a great help when it comes to adjusting your training diet. Other factors such as allergies, intolerances, intestinal flora and lifestyle habits also influence your response to food and are not reflected in this report.

In addition, the different talents and personalities of sports people are influenced by a multitude of factors. The experiences that have accompanied us since birth and all kinds of environmental factors have shaped our personality. Therefore, throughout the report you will also find your genetic tendency to different personality traits.

Finally, the report also analyses certain parameters linked to personal health and well-being.

Hereditary diseases are susceptible to being transmitted to your descendants. They are mostly single-genetic diseases. In this group we look for pathogenic mutations, or suspected ones, in the genes involved in these diseases. The mutations we are looking for are those reported in some of the most important genetic databases worldwide, basically OMIM and ClinVar.

***We did not analyze all the genetic information related to each disease,** in particular in this section we managed to analyze on average just under half of the pathogenic markers reported in the databases consulted, so we could have mutations in the other half and not see them in this report.*

It is important to bear in mind that if you need a diagnosis of a particular disease, there are genetic tests that analyse the whole gene or genes involved in that disease that are valid for clinical use. If you have a family history, we recommend that you consult a clinical or geneticist staff to study the need for such a test.

The results of this report are personal, and not applicable to studies on other members of your family.

These reports, as well as the progress of scientific research in the field of genetics, may vary over time. New mutations are continually being discovered and the ones we analyze today are becoming better known. At CrossDNA, we make a great effort to periodically apply consolidated scientific findings to our reports. We remind you that any change you wish to make with respect to your health must be guided by your medical service.

Throughout the report you will find various features in which we use GWAS statistical analysis to calculate your genetic predisposition to have abnormal levels of certain parameters. As a GWAS study, we indicate that you are more predisposed when your predisposition is greater than that of ninety percent of the population, and less so if your predisposition is less than that of ninety percent of the population. Due to the statistical distribution of this analysis, it is normal that several parameters emerge with greater or lesser predisposition.

The report consists of a general presentation of each section, followed by your personalized analysis. For a better visualization, in the first pages we have specified each concept according to a system of icons that indicate graphically the balance of your results. The genetic information provided in this report is valid only for research, information and educational purposes. In no case is it valid for clinical use.

We remind you that any change you wish to make in your diet or medical treatments should be guided by health professionals. Any doubt you may have about any genetic test should be checked with health

professionals who are experts in Genetic Diagnosis or Specialized Physicians.

Frequently Asked Questions

Should I make any drastic changes in the treatment of my health with the data from this test?

No, any change you want to make in your health should be analyzed by an expert geneticist and with specialized doctors. Any doubts you may have about any genetic test should be checked with expert health personnel in Genetic Diagnosis.

Does everything depend on my genes?

No, our body responds to a lot of conditions. Our genes are undoubtedly an important parameter. Lifestyle, sport, food, and many other circumstances influence our body. Knowing yourself well certainly helps to treat our body in the most suitable way. And this is what genetics brings you today: more knowledge.

Are all the genes analysed in the lists in the sections?

We include only a sample of the genes that we analyze, some of the sections are determined by the analysis of more genes that we did not indicate in the report. Our algorithms combine your genotypes of the analyzed markers.

If the report shows that I have genetic mutations in an inherited disease, does that mean it is safe for me to have it?

No, we look for both pathogenic mutations and mutations that could be pathogenic; if you have any that are qualified in this way your report will indicate that we have detected them. On the other hand, this technology is more than 99% reliable but there is no such thing as 100% reliability in this type of genotyping. If in doubt, consult your doctor or geneticist.

If the report shows that I do NOT have genetic mutations in a hereditary disease, does this mean that it is certain that I do NOT have it?

No, our test does not analyse all the genetic areas where pathogenic mutations may exist and we do not analyse deletions, duplications or many of the existing intergenic areas. We analyse only some markers reported as pathogenic. On average our test covers just under 50% of these markers, so there could be pathogenic markers in the other half and we would not be seeing them. There are diagnostic tests with greater coverage than this test in certain pathologies, and which also have clinical validity. If in doubt, consult your doctor or geneticist.

If I am a carrier of a mutation of a hereditary disease, how does this affect my descendants?

Almost all of us are carriers of some mutations of monogenetic diseases, it is normal to find several significant genetic mutations in a person. However, the risk of our offspring suffering from the disease varies greatly depending on the type of inheritance of the disease: autosomal dominant, autosomal recessive, etc., so we always advise you to consult your doctor or geneticist.

What is this report based on?

This test is based on different internationally consolidated genetic studies accepted by the scientific community. There are certain organisms and scientific databases where studies on which there is a certain level of consensus are published. Our genetic tests are performed by applying these studies to the genotype of our clients. In each section you will see some of the studies on which it is based. There are sections where more studies are used than those listed.
The genetic information provided in this report is valid only for research, information and educational uses. In no case is it valid for clinical use.

What can I do if I have questions?

Our tests are accompanied by a 10-minute telephone genetic counselling consultation per client where you can clarify all your doubts. In the email you received this report you have a link to book an appointment. We recommend that all genetic tests be accompanied by a Genetic Counseling Consultation, and that any changes in your health management be supervised by a doctor.

Summary of analysed characteristics

Diet & Nutrition

HDL cholesterol levels

Predisposition to overweight

Predisposition to snacking

Predisposition to emotional eating

The effectiveness of a low-carb diet

Effectiveness of a low-fat diet

Effectiveness of the Mediterranean diet

Appetite and hypocaloric diet

Vitamin K levels

Magnesium levels

Zinc levels

Vitamin A - Carotenoid levels

Homocysteine levels

Calcium levels

Vitamin B9 levels

Glycated hemoglobin levels

Serum total protein level

Serum albumin level

Triglyceride levels

Type 1 diabetes

Iron deficiency anaemia

DAO deficiency and migraines

Hypothyroidism

Ease of weight loss

Predisposition to consume sweets

Caffeine and addiction

Predisposition to fat intake

Effectiveness of a high-protein diet

Longevity and the Mediterranean diet

Appetite and a high-protein diet

Triglyceride levels and the Mediterranean Diet

Omega-6 levels

Vitamin E - Response to supplementation

Vitamin B6 levels

Vitamin A - Retinol levels

Iron levels

Phosphorus levels

Vitamin D levels

Phospholipid levels (plasma)

Bilirubin levels

Celiac disease

Type 2 diabetes

Lactose intolerance

Predisposition to early onset overweight in adults

Hypertension due to salt consumption

Health & Sport

- *Predisposition to power sports*
- *Aerobic capacity*
- *Skeletal muscle development*
- *Endurance swimming*
- *Sprinting*
- *Oxidative stress*
- *White blood cell count*
- *Serum uric acid levels*
- *GGT levels*
- *General risk of muscle injury due to sport*
- *Risk of anterior cruciate ligament rupture*
- *Risk of meniscus tear*
- *Concussion*
- *C-reactive protein*
- *Aortic root size*
- *Cardiomyopathy, Familial Hypertrophic, 2*
- *Long Qt Syndrome 1*
- *Predisposition to endurance sports*
- *Flexibility*
- *Muscle hypertrophy*
- *Rowing*
- *Sport and testosterone levels*
- *Lung volume*
- *Thyroid hormone levels*
- *Liver enzyme levels*
- *Influence of resistance training on blood pressure*
- *Risk of shoulder dislocation*
- *Risk of Achilles tendon rupture*
- *Meniscus recovery after meniscus surgery*
- *Cramps*
- *Resting heart rate*
- *Cardiomyopathy, Familial Hypertrophic, 1*
- *Brugada Syndrome 1*
- *Arrhythmogenic Right Ventricular Dysplasia, Familial, 10*

Lifestyle

- *Global benefit of the sport in your body*
- *Frequency of sport practice*
- *Cavities*
- *Benefits of Exercise in Cholesterol*
- *Impulsivity*
- *Figurative creativity*
- *Sunspots*
- *Personal motivation*
- *Power of sport on glucose levels*
- *Caffeine and anxiety*
- *Benefit of exercise in body mass index*
- *Night person*
- *Ease tanning*
- *Protection against pollution*

 Sensitivity to the sun

 Inflammation of the skin

 Psoriasis

 Dermal sensitivity

 Freckles

Caption:

 Your analyzed genotype is favorable.

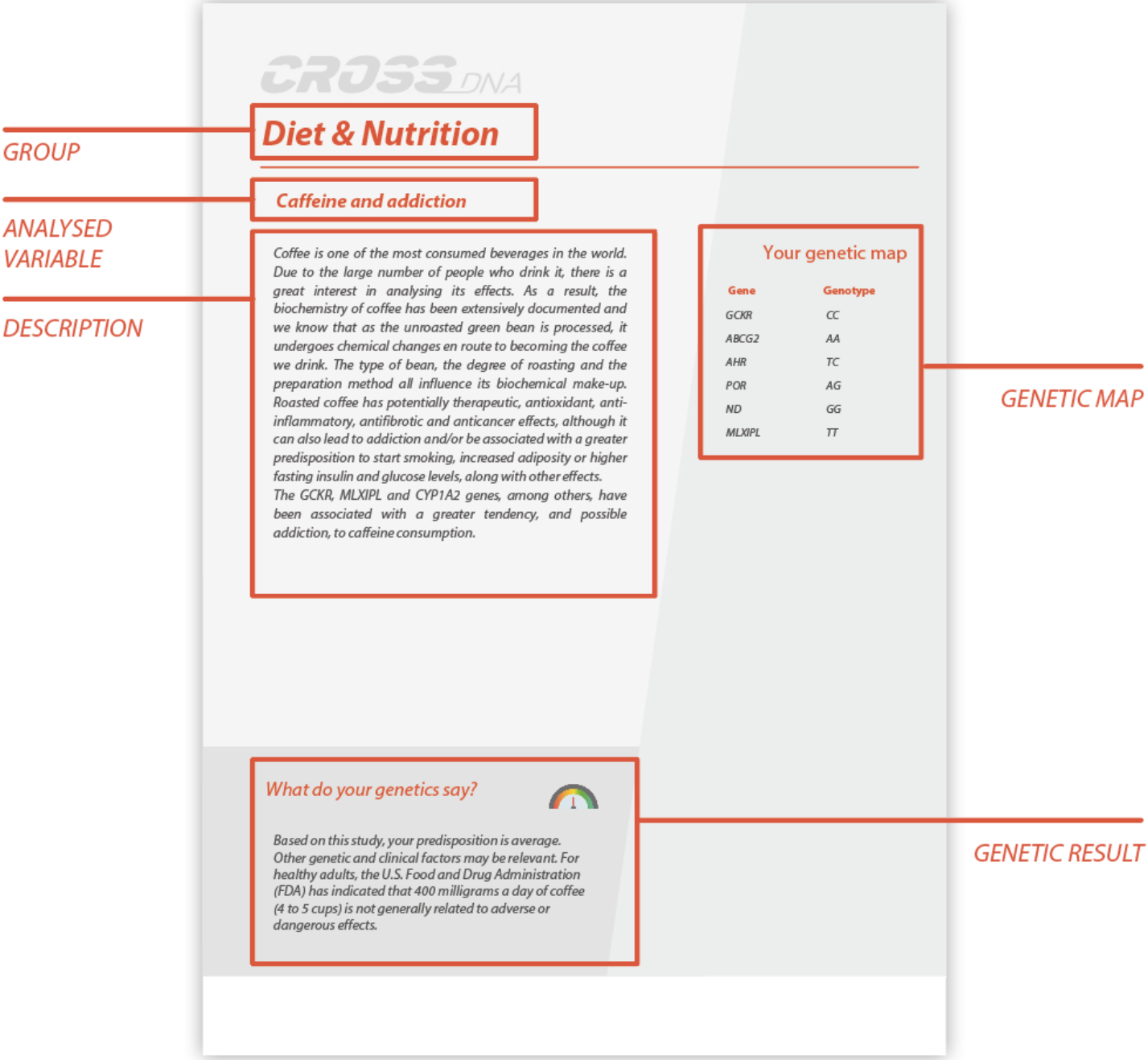
 Your analyzed genotype is a little favorable.

 Your analyzed genotype doesn't particularly affect you.

 Your analyzed genotype is a little unfavorable.

 Your analyzed genotype is unfavorable.

How to interpret the results



Diet & Nutrition

HDL cholesterol levels

Cholesterol is a waxy, fat-like substance found in every cell in the body. HDL cholesterol is a lipoprotein (lipids need to bind to proteins in order to move in the blood), which is usually called "good" cholesterol because it carries cholesterol from other organs to the liver, which removes it from the body. Low HDL levels are directly related to the risk of coronary heart disease.
Variants in the LOC105372112, LIPC and many other genes have been correlated with abnormally high or low levels of HDL in the blood.

Your genetic map

Gene	Genotype
ZPR1	CC
LOC144233	AG
SCARB1	AG
LOC105372112	CC
GALNT2	AG
TTC39B	TT
APOC1	GG
RAB11B	CC
NUTF2	GG
LIPC	AA
ABCA1	CC
LIPC	CC
CETP	TC
FADS2	AG
LPL	AA
LOC101928635	CC

What do your genetics say?

Based on your genotype, you are predisposed to have normal levels of HDL cholesterol. Other genetic and clinical factors may be relevant. Several factors help to raise good cholesterol, such as physical activity and increased consumption of monounsaturated fats (olives or nuts) and polyunsaturated fats (tuna, mackerel, salmon and sardines; or vegetable products, such as olive, soybean, canola, flaxseed and chia oils).

Diet & Nutrition

Ease of weight loss

Weight loss is a goal for an ever-growing part of the population. Diet and physical activity obviously play a key role in achieving the goal of losing weight, but we often notice that other people achieve better results than us when following the same diet and exercise routine. Genetics has a lot to say about that. We know that between 40 and 70% of the tendency to obesity can be inherited, but genetics also influence how easy or hard it is to lose weight.
Several studies have shown that the CLOCK and PPM1K-DT genes influence how easy or hard it is for someone to lose weight.

Your genetic map

Gene	Genotype
TCF7L2	*TC*
PPARG	*CC*
CLOCK	*AA*
PPM1K DT	*TC*

What do your genetics say?

Based on your genotype, your predisposition to weight loss is average. Other genetic and clinical factors may be relevant. Some diseases can make it harder to lose weight. Always consult with a health care professional before starting a diet. And remember that you can also see your predisposition to the effectiveness of different types of diets in other parts of this report.

Diet & Nutrition

Predisposition to overweight

The body mass index (BMI) is a number that is calculated based on a person's weight and height and is used to identify weight ranges that can lead to health problems. A BMI between 18.5 and 24.9 indicates a healthy weight, the overweight range is from 25 to 29.9, and 30 and above indicates obesity, from moderate to very severe. The tendency to overweight is a clear case of a combination of genetic and environmental factors. The environmental factors include mainly the type of diet and physical activity, but approximately 40 to 70% of the predisposition to overweight is inherited.
Several studies have correlated the FTO gene with a predisposition to have a higher BMI. In addition, in men, the MC4R gene is associated with a higher overall excess weight and a higher level of abdominal fat.

Your genetic map

Gene	Genotype
FTO	*AC*
MC4R	*GG*

What do your genetics say?

Based on your genotype, your predisposition to overweight is average. Other genetic and clinical factors may be relevant. Since genetics cannot be changed, to maintain a healthy BMI it is important to follow proper habits under the supervision of a health professional. And remember that you can also see your predisposition to the effectiveness of different types of diets in other parts of this report.

Diet & Nutrition

Predisposition to consume sweets

The sweet taste is mainly detected in the taste buds at the tip of the tongue, and the desire to eat sweet foods is usually influenced by culinary culture, habits and age. Foods with a high content of simple carbohydrates are perceived as sweet, but their excessive intake can lead to a risk of overweight, diabetes and cardiovascular disease.
However, genetics may also influence the desire to eat sweets, and changes in the FGF21/FUT1 intergenic region have been shown to predispose people to increased consumption.

Your genetic map

Gene	Genotype
FUT1	*GG*

What do your genetics say?

Based on your genotype, you are not predisposed to eat sweets. Other genetic and clinical factors may be relevant.

Diet & Nutrition

Predisposition to snacking

Snacking is the impulsive need to eat certain amounts of food at frequent intervals. Snacking can be healthy or not, depending on the amount and type of food that is consumed. The tendency to snack is highly influenced by leptin, a hormone that affects the operation of the hypothalamus, which regulates appetite, satiety and energy use.
It has been shown that people with genetic variations in some genes, such as MC4R, have a greater tendency to eat more without feeling satiated, and consequently to snack more frequently between meals.

Your genetic map

Gene	Genotype
MC4R	TT

What do your genetics say?

Based on your genotype, you have a low predisposition to snacking. Other genetic and clinical factors may be relevant.

Diet & Nutrition

Caffeine and addiction

Coffee is one of the most consumed beverages in the world. Due to the large number of people who drink it, there is a great interest in analysing its effects. As a result, the biochemistry of coffee has been extensively documented and we know that as the unroasted green bean is processed, it undergoes chemical changes en route to becoming the coffee we drink. The type of bean, the degree of roasting and the preparation method all influence its biochemical make-up. Roasted coffee has potentially therapeutic, antioxidant, anti-inflammatory, antifibrotic and anticancer effects, although it can also lead to addiction and/or be associated with a greater predisposition to start smoking, increased adiposity or higher fasting insulin and glucose levels, along with other effects.
The GCKR and LOC101927609 genes, among others, have been associated with a greater tendency, and possible addiction, to caffeine consumption.

Your genetic map

Gene	Genotype
GCKR	TC
ABCG2	AA
LOC101927609	CC
POR	AG
ND	GG
CYP1A2 CYP1A1	CC
EFCAB5	GG
MLXIPL	TT

What do your genetics say?

Based on this study, your predisposition is average. Other genetic and clinical factors may be relevant. For healthy adults, the U.S. Food and Drug Administration (FDA) has indicated that 400 milligrams a day of coffee (4 to 5 cups) is not generally related to adverse or dangerous effects.

Diet & Nutrition

Predisposition to emotional eating

Emotional eating, or uncontrolled eating, is the tendency to eat more than normal as a result of certain emotions, such as stress, anxiety, anger, or certain social situations that create insecurity or discomfort. Sometimes, emotional eating can be brought about by the taste of the food or the pleasure caused by the act of eating itself.
Some studies indicate that certain variations in the TAS2R38 gene may cause some people, especially women, to be more likely to eat excessively when in a certain frame of mind.

Your genetic map

Gene	Genotype
TAS2R38	*AG*
MC4R	*TT*

What do your genetics say?

Based on your genotype, you are not predisposed to emotional eating. Other genetic and clinical factors may be relevant.

Diet & Nutrition

Predisposition to fat intake

Fat is a great source of energy that the body uses to produce nerve tissue and hormones, and to absorb fat-soluble vitamins, such as D, E or K, which are metabolised in the body in the same way as the lipids in the diet. However, excessive fat intake increases the risk of overweight, and therefore of cardiovascular disease.
Genetics are related to the tendency to consume fat in excess, and it has been specifically shown that carriers of mutations in the FGF21/FUT1 intergenic region exhibit a lower predisposition to consume fat.

Your genetic map

Gene	Genotype
FUT1	GG

What do your genetics say?

Based on your genotype, your predisposition to fat consumption is average. Other genetic and clinical factors may be relevant. It is essential to eat the right balance of fats. As a rule, saturated fats (butter, cheese, whole milk, cream, ice cream or fatty meats) should be replaced with unsaturated fats (olive or sunflower oil, oily fish, avocados and nuts).

Diet & Nutrition

The effectiveness of a low-carb diet

A diet low in carbohydrates limits the intake of this type of macronutrient. Carbohydrates are the main source of energy in a diet and can be classified into two different types. Simple carbs provide immediate energy and are mainly found in sugars, such as those contained in fruits, while complex carbs, found in vegetables, cereals and legumes, provide a sustained source of energy throughout the day.
There are studies that indicate that genetics are, in part, responsible for how easy or hard it is to lose weight. In the specific case of a low-carb diet, it has been shown that variants in the FTO gene correlate with a greater predisposition to lose weight with this type of diet.

Your genetic map

Gene	Genotype
FTO	AT

What do your genetics say?

Based on your genotype, you have no special predisposition to lose weight with a low-carb diet. Other genetic and clinical factors may be relevant. Foods high in carbohydrates are some of the main sources of fibre, and a diet low in this substance can negatively affect intestinal health.

Diet & Nutrition

Effectiveness of a high-protein diet

A high-protein diet is based on the increased consumption of protein-rich foods, such as meat and eggs. Eating more protein helps to increase the feeling of satiety, as it affects the levels of ghrelin and other hormones that are responsible for regulating appetite. It is a very effective diet in terms of weight loss while minimising the loss of muscle mass, although it can cause a rebound effect, produce ketosis and have serious health consequences.
Not all metabolisms respond the same to a high-protein diet, and the FTO gene has been linked to its effectiveness.

Your genetic map

Gene	Genotype
FTO	*TA*

What do your genetics say?

Based on your genotype, your predisposition to respond well to a protein-rich diet is average. Other genetic and clinical factors may be relevant.
Regardless of an individual's genetic predisposition to one type of diet being more effective than another, it is important to check with a health care professional before starting any nutritional regimen so that it can be tailored to each person's habits.

Diet & Nutrition

Effectiveness of a low-fat diet

A low-fat diet is one in which the total fat intake is below 20% of the daily caloric intake, although the WHO considers a fat intake of up to 30% as healthy. In addition, experts recommend reducing the intake of saturated fats, such as pork fat, butter, milk fat, meat, ice cream and cheese, and replacing them with unsaturated fats, such as olive or seed oil, avocados, peanut butter or nuts. One way to distinguish between saturated and unsaturated (healthier) fats is that the former are solid at room temperature, while unsaturated fats only solidify when cooled.
Several large-scale studies on weight loss have shown a correlation between a variant in the IRS1 gene and an enhanced response to a low-fat diet.

Your genetic map

Gene	Genotype
IRS1	*CC*

What do your genetics say?

Based on your genotype, you are predisposed to lose weight with a low-fat diet. Other genetic and clinical factors may be relevant. Regardless of an individual's genetic predisposition to one type of diet being more effective than another, it is important to check with a health care professional before starting any nutritional regimen so that it can be tailored to each person's habits and lifestyle.

Diet & Nutrition

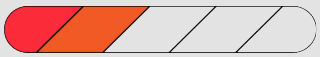
Longevity and the Mediterranean diet

Telomeres (a name of Greek origin meaning "final part") are the ends of chromosomes, akin to the plastic tips of shoelaces, whose main function is to protect the genetic material that carries the rest of the chromosome. As our cells divide in order to multiply and thus regenerate the tissues and organs in the body, telomeres shorten over time. This shortening is thus highly associated with the aging process and, consequently, with the time remaining before death. In other words, the shortening of telomeres has a direct relationship with longevity.
Studies have shown that people with mutations in the PPARG gene get an extra benefit from the Mediterranean diet that protects them against telomere shortening.

Your genetic map

Gene	Genotype
PPARG	*CC*

What do your genetics say?



Based on your genotype, you have no special predisposition to live longer with the Mediterranean diet. Other genetic and clinical factors may be relevant.

Diet & Nutrition

Effectiveness of the Mediterranean diet

The Mediterranean diet is rich in vegetables, fruit, fish, legumes, nuts, dairy products and olive oil, with smaller amounts of meat and eggs. This diet is easy to follow and maintain in the long term, since it does not eliminate any foods or restrict calories or quantities. It is also flexible and can be tailored based on preferences and lifestyles. Numerous studies have associated this type of diet with a low risk of obesity, and its health benefits are also well known. A general study conducted with over 11,000 participants determined that the people who followed this diet lost more weight than the rest.

Numerous studies have linked variations in the FTO and TCF7L2 genes with a positive effect on the control of weight gain associated with the Mediterranean diet.

Your genetic map

Gene	Genotype
GCKR	TC
FTO	AT
LPL	TT
TCF7L2	TC

What do your genetics say?

Based on your genotype, your predisposition to maintain your weight with the Mediterranean diet is average. Other genetic and clinical factors may be relevant. Regardless of an individual's genetic predisposition to one particular type of diet being more effective than another, it is important to check with a health care professional before starting any nutritional regimen so that it can be tailored to each person's habits and lifestyle.

Diet & Nutrition

Appetite and a high-protein diet

Appetite is the psychological desire to eat. It differs from hunger, which is the physiological need to eat food. In other words, appetite has more of an emotional component, whereas hunger is more physical. Appetite regulation is a very complex mechanism in which the brain, digestive system, fat deposits, genetic, environmental and psychological factors, and food characteristics are all involved. A high-protein diet, also called a hyperproteic diet, is based on increasing the proportion of protein-rich foods such as meat and eggs.
A genetic study has demonstrated a correlation between a variant in the FTO gene and the decreased appetite associated with a high-protein diet.

Your genetic map

Gene	Genotype
FTO	*AT*

What do your genetics say?

Based on your genotype, a high-protein diet has no influence on your appetite level. Other genetic and clinical factors may be relevant. Before starting any weight loss plan, we recommend you consult a health professional, who can supplement this report with diagnostic tests and a medical evaluation to design your personalised diet.

Diet & Nutrition

Appetite and hypocaloric diet

Appetite is the psychological desire to eat. It differs from hunger, which is the physiological need to eat food. In other words, appetite has more of an emotional component, whereas hunger is more physical. Appetite regulation is a very complex mechanism in which the brain, digestive system, fat deposits, genetic, environmental and psychological factors, and food characteristics are all involved. A low-calorie diet is one that relies on daily calorie restriction, or the reduction of amounts in general, and not on restricting specific types of food.

A genetic study has demonstrated a correlation between a variant in the FTO gene and the decreased appetite associated with a hypocaloric diet.

Your genetic map

Gene	Genotype
FTO	*AT*

What do your genetics say?

Based on your genotype, a low-calorie diet has no influence on your appetite level. Other genetic and clinical factors may be relevant. Before starting any weight loss plan, we recommend you consult a health professional, who can supplement this report with diagnostic tests and a medical evaluation to design your personalised diet.

Diet & Nutrition

Triglyceride levels and the Mediterranean Diet

Triglycerides are the most common type of fat in the body. They come from foods such as butter, some oils, and other fats. However, they can also come from the calories we eat through any other type of food, but that the body does not use and stores in fat cells instead. The most common consequence of high triglycerides is an increased risk of cardiovascular disease (heart attack, stroke, atherosclerosis) or type II diabetes.
Genetic research has shown a correlation between certain genetic mutations, such as in the LPL gene, and the predisposition that the Mediterranean diet will influence triglyceride levels.

Your genetic map

Gene	Genotype
LPL	*TT*

What do your genetics say?

Based on your genotype, you are not predisposed to have abnormal triglyceride levels with the Mediterranean diet. Other genetic and clinical factors may be relevant. To maintain adequate triglyceride levels, you should eat a balanced diet, limit your consumption of fats and carbohydrates, not smoke, limit your consumption of alcohol, and exercise to consume the calories ingested.

Diet & Nutrition

Vitamin K levels

Vitamin K (phytomenadione) is a fat-soluble vitamin. Known as the clotting vitamin, it is essential to ensure proper blood clotting and bone health. In addition, numerous studies have shown that it contributes to longer life. Low levels of vitamin K increase the risk of bleeding, calcification of blood vessels, and bone fracture. This vitamin is obtained from the diet, but a portion is obtained from our own bodies, since the intestinal microbiota is able to synthesise it. The destruction of the microbiota from excess medication, such as antibiotics, or alcoholism, for example, can reduce the amount of vitamin K in the body.
Genetic variations, as with the VKORC1 gene, have been described that are associated with abnormally low levels of vitamin K.

Your genetic map

Gene	Genotype
VKORC1	*CC*

What do your genetics say?

Based on your genotype, your predisposition to have low levels of vitamin K is average. Other genetic and clinical factors may be relevant.

Diet & Nutrition

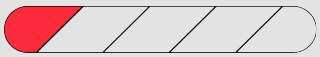
Omega-6 levels

Omega-6 are essential fatty acids that are crucial for certain bodily functions, but the body does not generate them, meaning it must obtain them through diet. They play a crucial role in brain function and normal growth and development. They also help to stimulate hair and skin growth, maintain bone health, regulate metabolism and maintain the reproductive system. They are found mainly in nuts, cereals, vegetable oils, avocados and eggs. Excess omega-6 in the blood can contribute to the onset of inflammatory diseases, while low levels can cause dermal disorders, such as eczema or hair loss, liver dysfunctions or kidney disorders.
Large-scale studies have shown that certain variants of the ELOVL2 gene cause people who carry that variant to have abnormal levels of omega-6.

Your genetic map

Gene	Genotype
PDXDC1	*CC*
TMEM258	*TC*
IL23R	*TG*
C10orf128	*GG*
FADS1	*CC*
FADS2	*TC*
PDXDC1	*TT*
FTLP19 RNU6	*TC*
PDXDC1	*AG*
TMEM39A	*CC*
PDXDC1	*GC*
ELOVL2	*GC*

What do your genetics say?



Based on this study, your predisposition to have abnormal levels is above average. Other genetic and clinical factors may be relevant.

Diet & Nutrition

Magnesium levels

Magnesium is an essential mineral in human nutrition. It is very important in many bodily processes, such as the regulation of blood sugar levels, the control of blood pressure or the proper functioning of the muscles and nervous system. In short, magnesium is needed for more than 300 biochemical reactions in the body. It is found in nuts, seeds such as pumpkin or chia, beans, green vegetables, cocoa and dark chocolate, and oily fish. Excess magnesium in the blood can cause stomach upset, nausea, vomiting, and diarrhoea. Conversely, a deficit could bring about mood swings, anxiety, depression, or intestinal symptoms, such as constipation.
Numerous studies have linked the MUC1 and LOC100129455 genes with a predisposition to have altered levels of magnesium in the blood.

Your genetic map

Gene	Genotype
MUC1	*CC*
SHROOM3	*GG*
LOC107984543	*AA*
LOC101928338	*TC*
LOC100129455	*GG*
MECOM	*AG*

What do your genetics say?

Based on this study, your predisposition to have normal levels is average. Other genetic and clinical factors may be relevant.

Diet & Nutrition

Vitamin E - Response to supplementation

Vitamin E (tocopherol) is a fat-soluble vitamin. In addition to being an antioxidant, it is essential for the operation of the immune system and for cardiovascular health, and prevents cataracts, age-related macular degeneration and fatty liver disease. It is also essential for the skin due to its anti-inflammatory and photoprotective properties. Vitamin E deficiency is rare in healthy individuals and is usually caused by diseases in which nutrients are not properly absorbed, such as Crohn's disease, liver diseases or cystic fibrosis. Vitamin E poisoning is also rare, but can cause risk of haemorrhaging, muscle weakness, fatigue, nausea and diarrhoea.
One study has correlated variations in the ZPR1, CYP4F2 and NKAIN3 genes in men with abnormal levels of vitamin E obtained through supplements.

Your genetic map

Gene	Genotype
ZPR1	*CC*
CYP4F2	*CC*
NKAIN3	*TC*

What do your genetics say?

Based on this study, your predisposition to have normal levels is average. Other genetic and clinical factors may be relevant.

Diet & Nutrition

Zinc levels

Zinc is a fundamental trace element in the body in the right concentration. Not having the minimum level is harmful, but very high levels can be toxic. Low levels of zinc can slow the growth rate of infants and children, slow sexual development in adolescents, and cause impotence in men. Other symptoms such as diarrhoea, nausea, vomiting, and loss of appetite are associated with zinc levels that are either too high or too low. Zinc is obtained mainly through the diet, from foods such as red meats, poultry, oysters and other seafood, nuts, whole grains, dairy products, and others.
However, genetics also play a role in blood zinc levels. Specifically, the CA3 gene has been shown to influence zinc levels.

Your genetic map

Gene	Genotype
CA1	AG
ND	TT
PPCDC	TC
NBDY	TT

What do your genetics say?

Based on this study, your predisposition to have normal levels is average. Other genetic and clinical factors may be relevant.

Diet & Nutrition

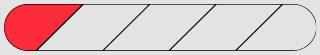
Vitamin B6 levels

Vitamin B6 (pyridoxine) is a water-soluble vitamin that is involved in numerous essential processes, such as protein metabolism, the proper functioning of the nervous system, the production of haemoglobin and maintaining proper homocysteine levels. It is found naturally in foods such as peas, whole grains, meat, eggs, and fish. Most people get enough vitamin B6 with a balanced diet, and vitamin B6 deficiency is rare. However, even slight imbalances in the levels of this vitamin can lead to various symptoms: nerve inflammation, irritability, depression, dermatitis, cracked and painful lips, swollen mouth and tongue, or confusion.
Numerous studies have linked the NBPF3 gene with reduced levels of vitamin B6, possibly due to the increased degradation of this vitamin in the blood.

Your genetic map

Gene	Genotype
NBPF3	*CC*

What do your genetics say?



Based on your genotype, you are predisposed to have low levels of vitamin B6. Other genetic and clinical factors may be relevant. Studies have shown a link between vitamin B6 levels and different genotypes, but this does not mean that your levels are not adequate. Environmental factors, such as the type of food, can compensate for a natural tendency to have levels below what is appropriate.

Diet & Nutrition

Vitamin A - Carotenoid levels

Carotenoids, also called tetraterpenoids, are vitamin A provitamins in the form of yellow, orange, and red organic pigments, and are produced by plants, algae, and various bacteria and fungi. They have an antioxidant and anti-inflammatory function, are fat-soluble and are stored in the fatty tissues of animals.
Studies have shown that PKD1L2 gene, among others, is directly related to circulating carotenoid levels.

Your genetic map

Gene	Genotype
PKD1L2	*GG*
PKD1L2	*TT*
ND	*TG*

What do your genetics say?

Based on this study, your predisposition to have normal levels is above average. Other genetic and clinical factors may be relevant.

Diet & Nutrition

Vitamin A - Retinol levels

Retinol, a compound popularly known for its application in the world of cosmetics, is a precursor of vitamin A. It plays an important role in storing this vitamin, which has multiple functions: it is important for growth and development, for maintaining the immune system and for good vision. It behaves like a hormone and is an important growth factor for epithelial and other cells.
Genetic factors, such as those involved in the FFAR4 gene, play an essential role in the circulation of vitamin A in the blood.

Your genetic map

Gene	Genotype
TTR	*AC*
FFAR4	*TT*

What do your genetics say?

Based on this study, your predisposition to have normal levels is average. Other genetic and clinical factors may be relevant. Retinol and, by extension, all retinoids, are found in foods of animal origin: meat, fish, seafood, dairy products, eggs, and others.

Diet & Nutrition

Homocysteine levels

Homocysteine is an amino acid present in the body whose metabolism is linked to that of some B vitamins, mainly B6, B9 and B12. When there is a deficiency in any of these vitamins, the levels of homocysteine in the blood increase, which can result in cardiovascular diseases, such as myocardial infarction or stroke. It has also been shown that people with high levels of homocysteine in the blood often have other associated risk factors, such as hypertension or high cholesterol.
Several studies have shown a link between the MTHFR gene and the propensity to have abnormal levels of homocysteine.

Your genetic map

Gene	Genotype
MTHFR	*TT*
MTHFR	*AG*

What do your genetics say?

Based on your genotype, you are predisposed to have normal levels of homocysteine. Other genetic and clinical factors may be relevant.

Diet & Nutrition

Iron levels

Iron is an essential mineral for many bodily functions. For example, it is a basic component in the proper functioning of antioxidant enzymes. The absorption, transport and storage of iron are closely regulated by metabolism, because it is an essential but potentially toxic element. Iron deficiency is the most common nutritional dysfunction in the world. Symptoms include fatigue, rapid heart rate and palpitations. Children, women of childbearing age and vegetarians or vegans are at high risk of iron deficiency.
It has been found that the TF gene affects the level of iron in blood in men.

Your genetic map

Gene	Genotype
TF	*AA*
TMPRSS6	*GG*

What do your genetics say?

Based on your genotype, you are not predisposed to have low levels of iron. Other genetic and clinical factors may be relevant.

Diet & Nutrition

Calcium levels

Calcium is the most abundant mineral in the human body and a fundamental element in the development of bones and teeth, blood clotting, sending and receiving nerve signals, muscle contraction and relaxation and regulating heart rate. The human body does not produce calcium, so it must be ingested through foods such as milk, yogurt, cheese, broccoli, kale or fish. Very high calcium levels can affect kidney function, lead to nervous system problems, disorientation, dementia, or even coma. By contrast, the main consequence of calcium deficiency is the loss of bone mass and the risk of osteoporosis, but it can also cause cramps in the back and legs, cause confusion, lack of memory, delirium, depression and hallucinations.
Studies have shown that the LINC00709 and CASR genes are related to the level of calcium in blood.

Your genetic map

Gene	Genotype
CASR	*GG*
DGKD	*GC*
GCKR	*TC*
LINC00709	*TC*
CARS1	*GG*
LOC105370176	*GG*
CYP24A1	*AG*
WDR81	*CC*

What do your genetics say?

Based on this study, your predisposition to have normal levels is average. Other genetic and clinical factors may be relevant.

Diet & Nutrition

Phosphorus levels

Phosphorus is a mineral that is found in our body's cells and plays an important role in how the body metabolises carbohydrates and fats. The main function of phosphorus is in bone and tooth formation, but it is also needed to produce proteins to grow, maintain and repair cells and tissues. Phosphorus is found in foods such as sardines, yogurt, meat and others. Low levels of this mineral usually do not produce symptoms, unless the deficit is very severe, in which case it may cause respiratory problems, confusion, irritability or coma. On the other hand, high levels may be indicative of kidney disease or hypoparathyroidism.
Multiple studies have shown a relationship between the FERRY3, PDE7B and IP6K3 genes to the predisposition to have abnormal levels of phosphorus in the blood.

Your genetic map

Gene	Genotype
NBPF3 ALPL	*CC*
CSTA	*AG*
IP6K3	*CC*
PDE7B	*TT*
FERRY3	*TT*

What do your genetics say?

Based on this study, your predisposition to have normal levels is average. Other genetic and clinical factors may be relevant.

Diet & Nutrition

Vitamin B9 levels

Vitamin B9 (folate) is a water-soluble vitamin that is essential in processes such as DNA synthesis, cell repair, protein metabolism and proper brain function. It is naturally present in foods such as leafy green vegetables, peas, lentils, fruits, cereals and other foods. Folic acid is an artificial (synthetic) folate contained in supplements and added to fortified foods. Vitamin B9 deficiencies are associated with anaemia, high homocysteine levels, increased risk of heart disease, complications during pregnancy, increased risk of cancer, and cognitive dysfunction in old age.
Genetic studies have shown that the MTHFR gene is associated with low levels of vitamin B9 in the blood and an increase in homocysteine, a substance that, at high levels, is linked to cardiovascular disease.

Your genetic map

Gene	Genotype
MTHFR	*AG*
MTHFR	*TT*

What do your genetics say?

Based on your genotype, you are not predisposed to have a vitamin B9 deficiency. Other genetic and clinical factors may be relevant.

Diet & Nutrition

Vitamin D levels

Vitamin D (calcidiol or calcifediol) is a fat-soluble vitamin that is important in the absorption and use of calcium, for maintaining good bone and muscle health, and for the proper functioning of the immune, endocrine and cardiovascular systems. It is synthesised in the skin after exposure to sunlight, which transforms it to its active form. Recently, an increase in cases of vitamin D deficiency has been identified in developed countries mainly due to lifestyle, the use of sunscreens and environmental conditions (pollution, geographic location). Numerous studies have identified variations in the GC gene related to vitamin D deficiency.

Your genetic map

Gene	Genotype
GC	TT

What do your genetics say?

Based on your genotype, you are not predisposed to vitamin D deficiency. Other genetic and clinical factors may be relevant. Exposure to sunlight is crucial to a person's vitamin D levels because there are few dietary sources of this vitamin.

Diet & Nutrition

Glycated hemoglobin levels

Glycated hemoglobin A1c (HbA1c) is used as a measure of glycemic control, and also as a diagnostic criterion for diabetes.

Your genetic map

Gene	Genotype
SMG5	AG
LOC107986647	TC
FADS2	CC
PIEZO1	CC
MYO9B	TC
ANK1	GG
FN3KRP	AG
ABCB11	CC
CDKAL1	TT
GCK	CC
SLC30A8	TC

What do your genetics say?

According to this study, your propensity is to have normal levels, in line with the average person.

Diet & Nutrition

Phospholipid levels (plasma)

Phospholipids are a source of essential fatty acids and act as critical components in the formation and function of cell membranes, making them vital to ensure optimal cellular health, as well as functioning as a biological vehicle for the absorption of fat-soluble vitamins, such as A, D, E, and K. Stored lipids represent the body's energy pantry and are a source of energy during exercise. Alterations in the balance of these lipids can be a precursor to metabolic dysfunction and cardiovascular problems, among other pathologies. Diet and the individual's metabolism are determining factors in the concentration of these lipids, but scientific studies have shown the influence of genetics in this process. In particular, it has been highlighted that variants in genes such as LCT influence the predisposition to have abnormal levels of phospholipids.

What do your genetics say?

According to this study, you are more prone than the average person to having normal levels.

Your genetic map

Gene	Genotype
TMEM258	*TC*
MYRF	*AC*
RPLP0P2 DAGLA	*GG*
FADS1	*CC*
FADS2	*AG*
FADS2 FADS3	*AG*
FEN1	*TT*
LCT	*AA*
TMEM258	*AA*
MYRF	*TC*
FADS2	*AC*
ELOVL2	*GC*
BEST1	*AC*
LOC101926964	*TT*
ELOVL2	*TC*
SYCP2L	*TG*
RAB3IL1	*TG*
DAGLA	*CC*
GCKR	*TC*
LOC105370339	*TT*
RPS2P37	*TC*
STIM2	*TT*

Diet & Nutrition

Serum total protein level

We could say that serum is the liquid part of blood that remains after blood cells (such as red blood cells and white blood cells) and platelets have been removed, and contains elements such as water, salts, sugars, proteins, and other compounds necessary for the functioning of your body. The proteins present in blood serum play a crucial role in modulating and monitoring multiple biological processes in our body and are not only a reflection of our general health and nutritional status but can also be affected by diseases, infections, and nutritional imbalances, such as malnutrition, cancer, and cardiovascular, renal and inflammatory diseases. At the genetic level, variants in the RPS11 gene, among others, have been confirmed to have the ability to influence predisposition to abnormal serum protein levels.

Your genetic map

Gene	Genotype
TNFRSF13B	*TC*
intergenic	*AG*
GCKR	*TC*
ARID5B	*TT*
RPS11	*GG*
ELL2	*CC*

What do your genetics say?

According to this study, your propensity is to have normal levels, in line with the average person.

Diet & Nutrition

Bilirubin levels

Bilirubin is a yellowish pigment produced during the breakdown of red blood cells, passes through the liver, and is eventually excreted from the body. Lower than average levels are not a concern, but abnormally high levels may indicate that the liver is not eliminating bilirubin properly, which may indicate liver disease or damage. It is, therefore, considered an essential indicator for detecting certain conditions. While liver disease is a common factor influencing these levels, genetics also plays a role. Variations in specific genes, such as UGT1A10, play a role in determining bilirubin levels.

Your genetic map

Gene	Genotype
UGT1A10	*GG*
HIST1H1T	*CC*
ARHGEF7	*GG*
SLCO1B1	*TT*

What do your genetics say?

According to this study, your propensity is to have normal levels, in line with the average person.

Diet & Nutrition

Serum albumin level

Albumin is a protein produced by the liver that stands out as the most prevalent protein in blood serum. It is vital for regulating osmotic balance, the relationship between the fluids inside the cell (intracellular) and its external environment (extracellular), and for transporting various molecules. A decreased albumin level can be a warning sign of possible kidney or liver disease; low albumin levels usually indicate dehydration. In any case, either too high or too low, abnormal levels are not necessarily associated with a health problem. It has been shown that certain medications can have an impact on albumin levels, and genetics is also an important influencing factor. Specifically, variants in genes, such as FRMD5, have been identified that influence serum albumin concentration.

Your genetic map

Gene	Genotype
MIR22HG	*TT*
ACTBP9	*TC*
RPS11	*GG*
FRMD5	*GG*
TNFRSF13B	*TC*
FKBPL PRRT1	*AG*
LOC107984237	*TT*
HPN AS1	*TT*
CHRNA3	*CC*
ELL2	*CC*

What do your genetics say?

According to this study, your propensity is to have normal levels, in line with the average person.

Diet & Nutrition

Celiac disease

Celiac disease is an immune disease in which people cannot eat gluten because it damages their small intestine. If you have celiac disease and eat foods with gluten, your immune system responds by damaging the small intestine. Gluten is a protein found in wheat, rye, and barley. It may also be found in other products, like vitamins and supplements, hair and skin products, toothpastes, and lip balm. Celiac disease affects each person differently. Symptoms may occur in the digestive system, or in other parts of the body. One person might have diarrhea and abdominal pain, while another may be irritable or depressed. Irritability is one of the most common symptoms in children. Some people have no symptoms.

What do your genetics say?

According to this study, you are less likely to suffer from this disease than most of the population.

Your genetic map

Gene	Genotype
LOC105371664	*AA*
PUS10	*AA*
IL18R1 IL1RL1	*TT*
LINC01934	*AA*
ICOS	*CC*
CCRL2 CCR5	*CC*
IL12A AS1	*AA*
LPP	*CC*
BLTP1	*AA*
HLA DQA1	*CC*
TNFAIP3	*AA*
ATXN2	*TT*
PTPN2	*AA*
MMEL1	*AA*
RUNX3	*AG*
MROH3P	*CC*
PLEK	*TC*
ARHGAP31	*TT*
BACH2	*AC*
THEMIS PTPRK	*AA*
Intergenic	*AA*
ZMIZ1	*AG*

Diet & Nutrition

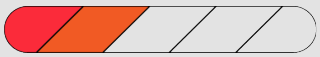
Triglyceride levels

Triglycerides are the most common type of fat in the body. They come from foods such as butter, some oils, and other fats. However, they can also come from the calories we eat through any other type of food, but that the body does not use and stores in fat cells instead. High triglyceride levels are often also associated with conditions such as lack of exercise, excessive consumption of alcohol, tobacco, or refined carbohydrates, and being overweight. Its most common consequence is an increased risk of cardiovascular disease (heart attack, stroke, atherosclerosis) or type II diabetes.
Genetic research has shown a correlation between certain mutations in the APOC1, FADS1, GCKR and other genes and a predisposition to have high levels of triglycerides.

Your genetic map

Gene	Genotype
GCKR	TC
SCARB1	AG
APOC1	GG
FADS1	CC

What do your genetics say?



Based on your genotype, you are more predisposed to high triglyceride levels than the majority of the population. Other genetic and clinical factors may be relevant. To maintain adequate triglyceride levels, you should eat a balanced diet, limit your consumption of fats and carbohydrates, not smoke, limit your consumption of alcohol, and exercise to consume the calories ingested.

Diet & Nutrition

Type 2 diabetes

Type 2 diabetes mellitus (DM2), or type 2 diabetes, is a chronic autoimmune disease that is characterized by the body's resistance to metabolise insulin and/or by the incorrect functioning of the pancreas, which secretes less insulin than the body needs. Since insulin is the hormone that regulates blood glucose levels, this pathology leads to hyperglycaemia, which can cause serious health complications, such as blindness, myocardial infarction, stroke, kidney failure or partial amputations. The classic symptoms are constant hunger, excessive thirst, and frequent urination.
Genetics influence the predisposition to this disease, as shown by the POU5F1 and LOC107986166 genes, which are directly correlated with it, although the interaction of environmental factors is also required. Obesity is thought to be one of its main causes.

What do your genetics say?

Based on this study, your predisposition to this disease is similar to that of the majority of the population.
Other genetic and clinical factors may be relevant.

Your genetic map

Gene	Genotype
RREB1 SSR1	*TC*
FAF1	*GG*
POU5F1	*CC*
LOC107986166	*CC*
ARL15	*AA*
MPHOSPH9	*GG*
PLEKHA1	*CC*
LINC00824	*TT*
LOC107986598	*CC*
ETV1	*AG*
C6orf173	*AA*
TCF7L2	*TC*
CDKAL1	*AG*
GRB14	*AC*
TLE4	*AG*
CDC123	*CC*
ARAP1	*AA*
KCNQ1	*TG*
JAZF1	*AA*
KCNJ11	*TC*
ST6GAL1	*CC*
MTNR1B	*CC*

Diet & Nutrition

Type 1 diabetes

Type 1 diabetes mellitus (DM1), or type 1 diabetes, is a chronic autoimmune disease that occurs when the pancreas does not secrete insulin, which is the hormone that regulates the level of glucose in the blood (glycaemic index). This type of diabetes, also called insulin-dependent diabetes, causes hyperglycaemia and requires the administration of a daily dose of insulin. Its main consequence is an increased risk of cardiovascular problems, such as angina pectoris, myocardial infarction, stroke, atherosclerosis or hypertension.
An individual's susceptibility to type 1 diabetes mellitus is associated with their genes, including PTPN22 and C12orf30. However, the interaction of environmental factors, such as infections or diet, among others, is required for the disease to develop.

Your genetic map

Gene	Genotype
BACH2	*GG*
PRKCQ	*AA*
CTSH	*TC*
C1QTNF6	*AG*
PTPN22	*CC*
CTLA4	*AG*
IL2RA	*TC*
C12orf30	*AA*
ERBB3	*TG*
CLEC16A	*AG*
PTPN2	*TG*

What do your genetics say?

Based on this study, your predisposition to this disease is similar to that of the majority of the population. Other genetic and clinical factors may be relevant. To keep blood sugar level under control, you should reduce your intake of products with a high carbohydrate content, especially sugary foods. However, a doctor has to diagnose and monitor this disease.

Diet & Nutrition

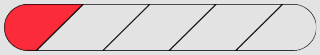
Lactose intolerance

Lactose is the main naturally-occurring sugar in milk and dairy products. It consists of a glucose molecule and a galactose molecule, two simple sugars that the body uses to produce energy. The enzyme lactase is essential for breaking down lactose into glucose and galactose, a key step in certain immune and neuronal processes. Some people cannot produce enough lactase; as a result, they do not digest lactose, which ferments in the intestine, generating gas, digestive distress, abdominal distension, and/or diarrhoea.
There are genetic factors that play an important role in lactose absorption, such as the MCM6 gene, which is directly related to this process.

Your genetic map

Gene	Genotype
MCM6	*GG*

What do your genetics say?



Based on your genotype, you are predisposed to have problems metabolising lactose. Other genetic and clinical factors may be relevant. Limiting the consumption of milk and other dairy products, consuming dairy products with reduced lactose content or adding a liquid or powdered lactase enzyme to milk are practices that can reduce the amount of lactose in the diet and/or aid in its metabolism.

Diet & Nutrition

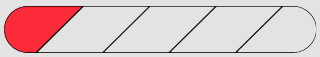
Iron deficiency anaemia

Anaemia is a condition in which the body does not have enough healthy red blood cells needed to carry nutrients to the body's tissues. Iron plays an important role in the production of red blood cells, and not having the right levels can cause anaemia, called iron deficiency anaemia, which is in fact the most common type. However, it should be noted that having low levels of iron does not necessarily lead to anaemia.
Certain genes have been shown to be associated with the development of anaemia; specifically, the TMPRSS6 gene increases the risk of anaemia in men.

Your genetic map

Gene	Genotype
TMPRSS6	*GG*

What do your genetics say?



Based on your genotype, you are predisposed to have iron deficiency anaemia. Other genetic and clinical factors may be relevant. There are two types of iron: heme (which is absorbed better) and non-heme. To facilitate the absorption of non-heme iron, you can eat citrus fruits or foods rich in vitamin C-rich. A health care professional may also prescribe an iron supplement if deemed necessary.

Diet & Nutrition

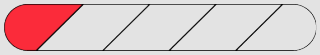
Predisposition to early onset overweight in adults

As we have seen above, the body mass index (BMI) is a number calculated based on a person's weight and height and used to identify weight ranges that can lead to health problems. Healthy weight is considered to be between 18.5 and 24.9; overweight corresponds to the range between 25 and 29.9; and over 30 is considered obesity, from moderate to very severe. The tendency to become overweight sometimes develops early in adults, which has a genetic component. Several studies have correlated the FTO gene with a predisposition to early-onset overweight.

Your genetic map

Gene	Genotype
FTO	AT

What do your genetics say?



Based on your genotype, you are predisposed to early onset obesity. Other genetic and clinical factors may be relevant. Since genetics cannot be changed, to maintain a healthy BMI it is important to follow proper habits under the supervision of a health professional. And remember that you can also see your predisposition to the effectiveness of different types of diets in other parts of this report.

Diet & Nutrition

DAO deficiency and migraines

Diamine oxidase (DAO) is the enzyme responsible for reducing histamine, which is a molecule the body uses to respond to substances it considers harmful. With a DAO deficiency, histamine builds up, causing allergies and bothersome symptoms, which can be worsened by eating foods that contain high levels of histamine, such as tomatoes, fish preserves, processed sauces, dairy products and other foods. One of the best-known consequences of DAO deficiency is migraines, but dizziness, irritable bowel syndrome, Crohn's disease, stomach pain, nausea and/or vomiting, abnormal blood pressure and arrhythmias can also occur.
The AOC1 gene is responsible for producing the DAO enzyme, and several studies confirm that mutations in this gene create a propensity for this process to malfunction, with the consequent generation of reduced levels of DAO.

Your genetic map

Gene	Genotype
AOC1	GG
AOC1	GC

What do your genetics say?

Based on your genotype, your predisposition to have reduced DAO enzyme activity is average. Other genetic and clinical factors may be relevant.

Diet & Nutrition

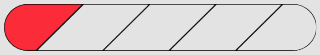
Hypertension due to salt consumption

Blood pressure is the force that the blood exerts against the walls of the blood vessels along the circulatory system. Hypertension is a chronic condition in which the pressure in blood vessels is persistently high, which can damage them. Sodium, the main component of salt, is directly related to the risk of hypertension, although other factors such as age, physical activity and fat consumption also influence it. The most common consequence of hypertension, along with other pathologies, is the greater propensity to suffer from cardiovascular diseases, such as heart attack or stroke.
At the genetic level, hypertension caused by salt consumption has a high heritability index. Several studies have shown that the ADD1, AGT and AGTR1 genes are related to an increased risk of this pathology, while the SLC4A5 gene has a protective effect.

Your genetic map

Gene	Genotype
AGT	*GG*
AGTR1	*AA*
ADD1	*GG*
SLC4A5	*AA*

What do your genetics say?



Based on your genotype, you are predisposed to hypertension as a result of salt consumption. Other genetic and clinical factors may be relevant. The habits to prevent hypertension are well known: keep an adequate BMI, exercise, lower your salt intake, limit alcohol, tobacco, and caffeine, and reduce stress. However, it is important to have a health professional keep track of it.

Diet & Nutrition

Hypothyroidism

The thyroid is an endocrine gland in the shape of a butterfly that is located in the neck. It produces hormones that control the rhythm of many bodily activities, such as how fast you burn calories or how fast your heart beats. Hypothyroidism is a dysfunction in which the thyroid does not produce enough of its hormones to satisfy the body's needs. The best known consequence of this pathology is weight gain due to a slower metabolism, but other common symptoms include fatigue, intolerance to cold, depression, decreased memory and ability to concentrate, dry skin, dry and brittle hair, pale skin, persistent constipation and excessive drowsiness.
Studies have shown a relationship between the PTPN22 and SH2B3 genes and an increased risk of hypothyroidism.

Your genetic map

Gene	Genotype
INSR	TT
TRNAH GUG	AA
LINC00327	AG
HLA C	AA
MTF1	TT
PDE8B	AA
ZBTB10	TC
ZNF804B	TT
PTCSC2	CC
VAV3	TC
SH2B3	CC
PHTF1	CC
HLA DQA2 HLA	CC

What do your genetics say?

Based on this study, your predisposition to this disease is similar to that of the majority of the population.
Other genetic and clinical factors may be relevant.

Health & Sport

Predisposition to power sports

Power measures the speed at which force is applied. That is, it is an athlete's ability to exert force quickly, as opposed to endurance, which measures the ability to repeat an activity over a long period of time without feeling fatigue. Fast twitch fibers generate a high amount of force in a short time, but fatigue faster. They have a lower capacity to obtain aerobic energy and higher levels of glycogen, so, for muscle contraction, they get points through anaerobic respiration. Several studies have analyzed genetic markers associated with power sports and show that mutations in the AGTR2, MSTN, EPAS1, IGF2BP2AGT, IL6, AMPD1, ACE, VEGFA, ACVR1B and NOS3 genes, among others, correlate with a greater or lesser predisposition to achieve a good performance in power sports in men.

Your genetic map

Gene	Genotype
ACE	*AG*
ACVR1B	*GG*
AGT	*GG*
AGTR2	*AA*
AMPD1	*GG*
EPAS1	*AG*
IGF2BP2	*TG*
IL6	*CC*
MSTN	*TT*
NOS3	*TT*
VEGFA	*GG*

What do your genetics say?

You are highly predisposed to perform well in power sports, according to your genotype. Other genetic and clinical factors may play a role. Regardless of your genetic predisposition, power can be trained with different types of exercise. We recommend you consult a health or sports professional before starting a training routine.

Health & Sport

Predisposition to endurance sports

Endurance measures the ability to repeat an activity without feeling fatigued. Therefore, endurance training is defined as a high or low-intensity activity performed for a prolonged period, as opposed to power training, in which the action is very high intensity for a short period. Endurance is greatly influenced by the proportion of slow twitch fibres in skeletal muscle, known as red fibres because they contain more myoglobin. This protein stores oxygen, obtaining its energy source and allowing it to maintain its strength for longer. In addition, studies have associated a specific variant in the PPARA gene with a predisposition to better performance in endurance sports in men.

Your genetic map

Gene	Genotype
PPARA	*CG*

What do your genetics say?

According to your genotype, you are predisposed to perform well in endurance sports. Other genetic and clinical factors may play a role. Training such as slow long-distance running, cycling or swimming, yoga, sit-ups, squats or push-ups will improve your endurance. However, we recommend you consult a health or sports professional before starting a training routine.

Health & Sport

Aerobic capacity

Maximal aerobic capacity (or maximal volume of oxygen - VO2 max) is the maximum amount of oxygen that the body can absorb, transport and use per unit of time and, consequently, determines a person's aerobic fitness and power during prolonged exercise. Aerobic capacity can be improved through sports training to achieve a higher maximal oxygen volume, leading to low blood pressure, low cholesterol levels, and lower risk of obesity, type 2 diabetes and cardiovascular disease. Conversely, a low flow of oxygen to our cells explains possible shortness of breath, decreased endurance and increased susceptibility to respiratory infections with age. In addition, studies show that mutations in the ACSL1 gene correlate with poorer trainability of aerobic capacity.

Your genetic map

Gene	Genotype
ACSL1	*GG*

What do your genetics say?

According to your genotype, your predisposition to improve your aerobic capacity through sport is normal. However, other genetic and clinical factors may play a role. Cross-training, combining several sports, is an excellent way to train aerobic capacity.

Health & Sport

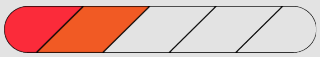
Flexibility

Flexibility is the ability of a muscle to passively lengthen through a range of motion and mobility. It could be defined as the ability to actively move a joint through its range of motion. Programs to improve joint mobility and flexibility are standard in clinical and physical sports settings. They generate multiple benefits, such as improved physical performance, reduced risk of injury or joint discomfort, improved posture and lower back pain. In addition, it helps to increase blood and nutrient flow to the tissues and, above all, improves muscle coordination and increases the range of mobility available in the joints.
At the genetic level, several studies show that people with mutations in the COL5A1 and ACTN3 genes tend to have less flexibility than individuals without those mutations.

Your genetic map

Gene	Genotype
COL5A1	*TT*
ACTN3	*CC*

What do your genetics say?



According to your genotype, your flexibility tends to be reduced. Other genetic and clinical factors may play a role. The flexibility program design should be personalized whenever possible, so we recommend that you seek the advice of a specialized personal trainer or physiotherapist.

Health & Sport

Skeletal muscle development

There are three types of muscles: skeletal, cardiac and smooth. Skeletal muscles are striated muscles attached to the skeleton, formed by cells or elongated fibres. Their function is to facilitate movement and maintain the bone-joint union through their contraction. The biceps, pectorals or quadriceps are examples of skeletal muscles. Strength is influenced, among other factors, by muscle volume, which can be increased by training through functional exercises, repetitions with weight load and an adequate diet. At the genetic level, a study has found that a genetic variant in the BMP2 gene is associated with a better predisposition to skeletal muscle development due to endurance sports.

Your genetic map

Gene	Genotype
BMP2	*CC*

What do your genetics say?

According to your genotype, you have a good predisposition to skeletal muscle development, thanks to endurance sports. However, other genetic and clinical factors may play a role. For example, a proper diet is essential in addition to sports to achieve muscle growth goals. Therefore, we recommend you share your genetic reports with health and sports professionals (doctor, nutritionist, personal trainer) to reach your maximum potential safely.

Health & Sport

Muscle hypertrophy

Muscle hypertrophy is the scientific name given to the growth of muscle cell size, which implies an increase in fibre size and thus muscle development. Almost any type of sports training usually involves muscle development to a greater or lesser extent. Still, sometimes hypertrophy is a goal in itself for some athletes, in which case specific routines are designed for that purpose, based mainly on strength training. Some benefits of muscle hypertrophy are increased strength and endurance, joint strengthening, and injury prevention.
One study shows that individuals with mutations in the PPARG gene tend to obtain more significant muscle hypertrophy, i.e., increased muscle development, due to sports training.

Your genetic map

Gene	Genotype
PPARG	*CC*

What do your genetics say?

According to your genotype, your predisposition to obtain muscular hypertrophy due to the practice of sport is normal. However, other genetic and clinical factors may have an influence. For example, training is usually based on weight lifting to achieve muscle hypertrophy. The so-called "training to failure" system is standard among other routines, combining repetitions and weight until the last repetition cannot be performed entirely.

Health & Sport

Endurance swimming

Swimming is a sport that mainly exercises the latissimus dorsi, pectoralis, deltoid, triceps, biceps, teres major and trapezius muscles, and, secondarily, the abdominals, gluteus, intercostals, and quadriceps. On a cardiorespiratory level, it improves oxygen consumption by up to 10%. In addition, it allows the heart to pump up to 18% more blood, resulting in better circulation and reducing the heart rate. It is also one of the sports that helps to improve coordination. There are four basic swimming styles (crawl, breaststroke, backstroke, and butterfly), each with its specific technique and level of difficulty, as well as its muscular and skeletal indications so that it is a sport that can be adapted to the particular needs of each person.

In genetics, a specific mutation in the NOS3 gene has been correlated with a predisposition to a better performance in endurance swimming.

Your genetic map

Gene	Genotype
NOS3	TT

What do your genetics say?

Depending on your genotype, you are predisposed to perform well in endurance swimming. Other genetic and clinical factors may play a role. We can say that swimming is a sport recommended for almost any type of person, as it generates a little impact on bones and joints, improves flexibility and elasticity, and burns fat. It can also help to manage stress and anxiety.

Health & Sport

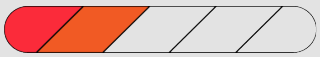
Rowing

Rowing is a sport discipline that consists of propelling a boat over the water using the muscular strength of one or more rowers, each using one or two oars as levers. At body level, the benefits of rowing are strengthening of the musculature, reduction of joint stiffness, elimination of body fat and improvement of cardiovascular endurance. But, at a mental level, it also helps release endorphins. The muscle groups most exercised with rowing are the cervical musculature, shoulder, back and arm, although indirectly also work the abdomen, buttocks and legs. In general, it helps build muscle and increases strength and endurance simultaneously.
At the genetic level, it has been shown that mutations in the ACTN3 gene are correlated with better rowing performance.

Your genetic map

Gene	Genotype
ACTN3	*CC*

What do your genetics say?



You are not predisposed to perform well in rowing, depending on your genotype. Other genetic and clinical factors may play a role.

Health & Sport

Sprinting

Sport sprinting is the increase in exercise speed over a period of time, usually short. It is also known as doubling, because it is estimated to consist of doubling the energy level during that time interval. It should be noted that, like any form of exercise, it requires prior preparation in which the body becomes accustomed to these changes in intensity. Sprinting has many benefits: it improves reaction capacity and increases bone density and sports performance in general. Studies have associated specific variations in the AMPD1 and ACVR1B genes with the level of sprinting performance.

Your genetic map

Gene	Genotype
AMPD1	*GG*
ACVR1B	*GG*

What do your genetics say?

According to your genotype, your predisposition to correct sprint performance is average. However, other genetic and clinical factors may have an influence. Therefore, before you start sprinting, it is advisable to seek the advice of a doctor and a sports specialist to help you define your goals and burst times in a personalized and controlled manner.

Health & Sport

Sport and testosterone levels

Testosterone is the primary sex hormone in men. During puberty, it causes body hair growth, muscle development, and deepening of the voice. In adult men, it controls sexual desire, helps produce sperm and maintains muscle mass. As for the relationship of testosterone with sport, it is worth noting that it has an essential role in regulating metabolism, whose proper functioning is vital for weight control, maintaining sufficient energy levels throughout the day, or having a good mood, among other functions. In particular, testosterone plays a significant role in making muscle fibres grow and become stronger. And since muscle is the most energy-consuming tissue in our body, metabolic activity improves when testosterone levels are adequate.
A study shows that mutations in the SHBG gene are correlated with the tendency to have low testosterone levels.

Your genetic map

Gene	Genotype
SHBG	*GG*
SHBG	*CC*

What do your genetics say?

According to this study, you have a predisposition similar to most of the population to have low levels. Other genetic and clinical factors may play a role. To maintain adequate testosterone levels, it is advisable to maintain a healthy weight; practice sports regularly; do not consume too much caffeine, tobacco or alcohol; sleep well; and avoid stress. A doctor can prescribe vitamin supplements or particular medication if deemed necessary.

Health & Sport

Oxidative stress

Oxidative stress is the process by which our body's cells become oxidized, resulting in damage that affects their functions. It occurs due to an excess of free radicals and oxygen and a lack of antioxidants to counteract it. Environmental pollution, active and passive smoking, excessive sunbathing, and consuming drugs or too much alcohol are some leading causes. But during the practice of sport, free radicals and the consequent oxidative stress are also increased, which can be damaging in the case of a weakened antioxidant defence system. Its consequences are usually excessive muscle pain and fatigue after training.
Genetics is an influential factor in this regard, and a study shows that a particular variant of the SOD2 gene reduces the efficiency of the organism in its defence against oxidative stress caused by sport, which could be unfavourable in the practice of sports, especially high-intensity sports.

Your genetic map

Gene	Genotype
SOD2	GG

What do your genetics say?

According to your genotype, you are not particularly predisposed to suffer oxidative stress due to sport. However, other genetic and clinical factors may play a role. Broccoli, blueberries, carrots, tomatoes, cocoa, peppers, almonds, green tea, red wine in moderation, and some vegetable oils, such as olive oil, are antioxidant foods. Other micronutrients, such as selenium, beta-carotene and vitamins C and D, also have this effect.

Health & Sport

Lung volume

Lung volume is an essential factor influencing our respiratory function. It is measured by forced vital capacity (FVC), which indicates the maximum volume of air exhaled at maximum possible effort, starting from a maximal inspiration. It is expressed as volume (in ml). Low levels of this indicator may indicate lung obstruction. The analysis tool used is spirometry, which is used to diagnose and monitor respiratory diseases such as asthma and COPD (chronic obstructive pulmonary disease), among others. Environmental factors such as smoking and pollution exposure can influence the results, but genetics also plays a significant role. It has been found that specific variants in genes, such as BMP6, can affect a person's forced vital capacity.

Your genetic map

Gene	Genotype
EFEMP1	*AT*
BMP6	*TT*
MIR129 2	*GG*
PRDM11	*AA*
WWOX	*AA*

What do your genetics say?

According to this study, you have a propensity similar to that of most of the population.

Health & Sport

White blood cell count

White blood cells are a type of blood cell that is produced in the bone marrow and found in blood and lymphatic tissues. White blood cells are part of the body's immune system. These help the body fight infections and other diseases. The types of white blood cells are granulocytes (neutrophils, eosinophils, and basophils), monocytes, and lymphocytes (T cells and B cells).

White blood cell count is a common clinical measurement of whole blood count tests, and varies widely among healthy individuals.

Your genetic map

Gene	Genotype
LINC01565	*AA*
EPS15L1	*AG*
LOC101927156	*TC*
LINC01565	*GC*
CCDC26	*GG*
LOC105376219	*TC*
PSMD3 CSF3	*TT*
HCG22 C6orf15	*TT*
PSMD3 CSF3	*TC*

What do your genetics say?

According to this study, your propensity is to have normal levels, in line with the average person.

Health & Sport

Thyroid hormone levels

Thyroid hormone is essential for normal metabolism and development, and overt abnormalities in thyroid function lead to common endocrine disorders affecting approximately 10% of individuals over their life spans. In addition, even mild alterations in thyroid function are associated with weight changes, atrial fibrillation, osteoporosis, and psychiatric disorders.

What do your genetics say?

According to this study, your propensity is to have normal levels, in line with the average person.

Your genetic map

Gene	Genotype
PDE8B	*AG*
PDE10A	*CC*
LOC105376817	*AG*
LOC105371356	*TC*
LOC107986598	*CC*
LINC01512	*CC*
LOC107986195	*TT*
IGFBP AS1	*AA*
SOX9	*TT*
NFIA	*GG*
FGF7	*TT*
PRDM11	*CC*
DET1	*GG*
INSR	*TT*
ITPK1 CYB5AP3	*CC*
NRG1	*AG*
LINC00609	*TT*
SASH1	*TC*
GLIS3	*GG*
DIO1	*AC*
LHX3	*AG*
PTCSC2	*TC*

Health & Sport

Serum uric acid levels

Uric acid is a chemical that is created when the body breaks down substances called purines. Purines are normally produced in the body and are also found in some foods and beverages. Foods with a high purine content include liver, anchovies, mackerel, beans (beans) and dried peas and beer.

Most of the uric acid dissolves in the blood and travels to the kidneys. From there it comes out through the urine. If your body produces too much uric acid or does not eliminate it in sufficient quantities, you can get sick. High levels of uric acid in the blood are called hyperuricemia.

Your genetic map

Gene	Genotype
ABCG2	*GG*
SLC2A9	*TG*
SLC17A1	*AG*

What do your genetics say?

According to this study, your propensity is to have normal levels, in line with the average person.

Health & Sport

Liver enzyme levels

Liver enzymes play a vital role in the breakdown of compounds in the liver, and abnormal levels may indicate certain conditions. Low levels are often associated with jaundice, ascites, or hepatic encephalopathy, while high levels usually indicate inflammation or injury to liver cells. While factors such as alcohol consumption, some medications, and certain diseases can alter these levels, genetics also plays a significant role. Studies have identified that specific variants in genes, such as SMG6, among others, can influence plasma levels of liver enzymes.

Your genetic map

Gene	Genotype
JMJD1C	*CC*
JMJD1C	*AA*
LINC01363	*TC*
ADAMTS13	*GG*
PNPLA3	*AA*
NBPF3 ALPL	*GG*
GPLD1	*GG*
GGT1	*GG*

What do your genetics say?

According to this study, your propensity is to have normal levels, in line with the average person.

Health & Sport

GGT levels

GGT (Gamma Glutamyl Transferase) is a type of liver enzyme essential in the metabolic process of amino acids, which stands out for its ability to diagnose potential liver disorders. Low GGT, in many cases, is not due to a disease but simply to an unbalanced diet with specific nutrient and vitamin deficiencies. However, elevated blood levels may indicate liver disease or damage to the bile ducts, the tubes through which bile enters and exits the liver. Environmental factors, such as alcohol intake, certain medications, and some diseases, can directly affect these levels, but we also find a determining influence in our genetic inheritance. Specifically, specific gene variants, such as PNPLA3, can influence GGT levels in the blood.

What do your genetics say?

According to this study, your propensity is to have normal levels, in line with the average person.

Your genetic map

Gene	Genotype
PNPLA3	*CG*
NBPF3	*AC*
RNU6 1151P	*TA*
LOC105376184	*CC*
ABO LCN1P2	*CC*
JMJD1C	*GG*
FADS2	*TT*
ST3GAL4	*TC*
ASGR1 DLG4	*TC*
ABHD12	*AA*
LOC101927479	*AA*
CEPT1	*AA*
EFHD1	*AC*
SLC2A2	*GG*
HPRT1P2	*AA*
MLXIPL	*CC*
DLG5	*AA*
HNF1A	*AG*
EXOC3L4	*AA*
RORA RORA AS1	*AC*
CD276	*CC*
LOC102724084	*CC*

Health & Sport

Influence of resistance training on blood pressure

Blood pressure is the force exerted by the blood against the walls of the blood vessels throughout the circulatory system. Arterial hypertension is a chronic condition in which the blood vessels have persistently high blood pressure, which can damage them. It is estimated that most of the population will have hypertension at some point. The practice of endurance sports (running, swimming, cycling, prolonged sessions on the elliptical bike or rowing machine, among others) can help reduce blood pressure. Still, this influence depends very much on the individual, and genetics plays an important role. Several studies have associated specific variations in the NOS3 gene with an antihypertensive effect in particular genotypes.

Your genetic map

Gene	Genotype
NOS3	AG

What do your genetics say?

According to your genotype, your predisposition to lower blood pressure through resistance training is typical. Other genetic and clinical factors may play a role. Besides sports, healthy lifestyle habits to prevent hypertension are well known to the population: maintaining an adequate BMI, reducing sodium in our diet, limiting alcohol, tobacco and caffeine consumption, and reducing stress levels.

Health & Sport

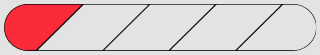
General risk of muscle injury due to sport

Sport has numerous health benefits, but any physical activity carries a risk of injury from the activity itself and the possibility of performing the exercises incorrectly. To avoid the latter, having a sports or health professional supervise the correct development of the sports routine is essential. When a muscle is injured, proteins are released into the blood, the concentration of which is evidence of more significant damage to the muscle fibres and a greater likelihood of muscle fatigue. However, some people have a greater predisposition to injury than others, and this, in part, is due to their genetics. Scientific evidence has shown that specific variation in the IL6 gene correlates with the risk of injury.

Your genetic map

Gene	Genotype
IL6	*CC*

What do your genetics say?



According to your genotype, you have a high predisposition to suffer muscle injuries due to sports. Other genetic and clinical factors may also play a role. In addition to trying to avoid falls or using protective equipment, if you do certain activities, such as risky or contact sports, it is advisable to do physical exercise to strengthen and maintain the flexibility of your joints and muscles.

Health & Sport

Risk of shoulder dislocation

Shoulder dislocation occurs when the head of the humerus is displaced out of the joint. It is usually caused by trauma due to accidents, falls or seizures, among other reasons. It is a relatively common injury; approximately 1.7% of the population suffers it at some point. Recent genetic studies link mutations in the COL1A1 gene with a lower risk of shoulder dislocation.

Your genetic map

Gene	Genotype
COL1A1	CC

What do your genetics say?

According to your genotype, your predisposition to shoulder dislocation is normal. However, other genetic and clinical factors may play a role. In addition to trying to avoid falls or using protective equipment, if you do certain activities, such as risky or contact sports, it is advisable to do physical exercise to strengthen and maintain the flexibility of your joints and muscles.

Health & Sport

Risk of anterior cruciate ligament rupture

The anterior cruciate ligament connects the posterior-lateral part of the femur with the anterior-middle part of the tibia, passing behind the patella. This junction prevents a forward displacement of the tibia with respect to the femur, while the posterior cruciate ligament prevents a backward displacement of the tibia with respect to the femur. The combination of the two provides rotational stability to the knee. Ruptures of the anterior cruciate ligament are frequent during physical activities. Recent genetic studies point to mutations in the COL1A1 gene as a protective factor against injuries to this ligament.

Your genetic map

Gene	Genotype
COL1A1	CC

What do your genetics say?

According to your genotype, your predisposition to anterior cruciate ligament rupture is normal. However, other genetic and clinical factors may play a role. In addition to avoiding falls or using protective equipment, if you do certain activities, such as risky or contact sports, it is advisable to do physical exercise to strengthen and maintain the flexibility of your joints and muscles.

Health & Sport

Risk of Achilles tendon rupture

The Achilles tendon is a strong band of fibrous tissue that connects the muscles in the back of your calf to the heel bone, and its function is plantar flexion of the foot. It allows the calf muscle to move the foot, making it essential for walking, running and jumping. Abnormalities of the tendon can include inflammation, degeneration and rupture. Recent genetic studies point to mutations in the COL1A1 gene as a protective factor against Achilles tendon injury.

Your genetic map

Gene	Genotype
COL1A1	CC

What do your genetics say?

According to your genotype, your predisposition to Achilles tendon rupture is normal. However, other genetic and clinical factors may play a role. In addition to trying to avoid falls or using protective equipment, if you do certain activities, such as risky or contact sports, it is advisable to engage in physical activity to strengthen and maintain the flexibility of your joints and muscles.

Health & Sport

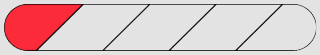
Risk of meniscus tear

Cartilage is a strong but flexible tissue that cushions between the ends of bones in a joint. The meniscus is a C-shaped piece of cartilage, of which there are two in each knee. A torn meniscus usually causes medial or lateral pain depending on whether it is internal or external, although sometimes it can also cause pain in the back of the knee. In addition to pain, meniscal tears can cause a sensation of the knee giving way, inability to move the knee normally, and increased susceptibility to osteoarthritis in the injured joint. Studies have associated a particular variation in the GDF5 gene with the risk of meniscal tears in men.

Your genetic map

Gene	Genotype
GDF5	*AA*

What do your genetics say?



According to your genotype, you are predisposed to meniscus tears. Other genetic and clinical factors may play a role. In addition to trying to avoid falls or using protective equipment, if you do certain activities, such as risky or contact sports, it is advisable to do physical exercise to strengthen and maintain the flexibility of your joints and muscles.

Health & Sport

Meniscus recovery after meniscus surgery

The treatment of a meniscal tear usually depends on the disability that the injury causes to the patient, among other factors. It is generally conservative in degenerative lesions of this age, but it is often necessary to go to the operating room. Meniscus surgery is usually performed by arthroscopy, using a camera inserted through a small incision in the joint, which allows the problem to be identified and solved from the inside. The most common techniques are meniscal suture and partial removal (partial meniscectomy). The postoperative period depends on many factors, such as the result of the surgery, the previous state of the joint, the patient's physical condition, age, etc. But genetics also has something to say since studies associate a specific variation in the GDF5 gene with better recovery and more excellent knee stability after meniscus surgery.

Your genetic map

Gene	Genotype
GDF5	AA

What do your genetics say?

According to your genotype, you have a normal predisposition to make a good recovery after meniscus surgery. However, other genetic and clinical factors may play a role. Therefore, healing after trauma surgery should always be supervised by a healthcare professional, rehabilitation physician or physiotherapist.

Health & Sport

Concussion

A concussion, also called a traumatic brain injury, can occur when the head hits an object or when a moving object strikes the head. This type of injury can cause headaches, changes in alertness, loss of consciousness (rare), or memory loss. It can also affect how the brain functions, and depending on the severity of the trauma, the extent of the injury and its duration, the consequences can be more or less significant. Sports activities are a common cause of concussion, which a physician should diagnose.
Several studies have shown that mutations in the IL6R and APOE genes are correlated with a greater or lesser likelihood of concussion.

Your genetic map

Gene	Genotype
IL6R	*AC*
APOE	*TG*

What do your genetics say?

According to your genotype, you have a low predisposition to concussion. Other genetic and clinical factors may play a role. Since a concussion is caused by trauma, it is a complex injury to prevent. Helmets, mouthguards and other safety items can reduce the risk of head injury, especially in high-risk sports where the trauma may be more severe.

Health & Sport

Cramps

Muscle cramps are sudden involuntary contractions or spasms in one or more muscles. They are relatively frequent and usually occur after exercise. The most typical case is muscle cramps in the legs at night. They can be very painful and last from a few seconds to several minutes. Dehydration; low levels of electrolytes, such as magnesium, potassium or calcium; muscles with poor blood supply; pregnancy; or certain medications are some of the causes, although the main reason is usually excessive tension of a specific muscle. If you have a cramp, it is essential to stop exercising, gently stretch the muscle, drink water, walk a little and relieve the pain with ice, if necessary.
On a genetic level, a study shows that people with a particular mutation in the COL5A1 gene are more prone to muscle cramps than people without the modification.

Your genetic map

Gene	Genotype
COL5A1	*TT*

What do your genetics say?

According to your genotype, you are not particularly predisposed to muscle cramps. However, other genetic and clinical factors may play a role. To avoid cramps, it is recommended to stretch your muscles before exercising and drink plenty of fluids to stay hydrated. If cramps occur at night, it is advisable to stretch before going to bed. If you have frequent cramps, we recommend you visit your doctor or physiotherapist.

Health & Sport

C-reactive protein

C-reactive protein (CRP) is a molecule the liver produces in response to inflammation. It is, therefore, used as a marker in clinical tests to identify inflammatory diseases, usually resulting from infections and tissue damage. While some lifestyle factors, such as consumption of dairy, oils, and other fats, influence baseline CRP levels at the genetic level, variants in the HNF1A gene, among others, have been shown to influence a predisposition to abnormal C-reactive protein levels. Your doctor may ask you to avoid such activities before the test. Also, some medications can affect the CRP level. Tell your doctor about any medicines you take, including over-the-counter drugs.

Your genetic map

Gene	Genotype
FLJ20021	*TT*
DOCK4	*GG*
LOC105377910	*TT*
KCNE4	*GG*
HNF1A	*TT*
LOC105374322	*AA*
PSMD3 CSF3	*TT*
LOC100506403	*AA*

What do your genetics say?

According to this study, your propensity is to have normal levels, in line with the average person.

Health & Sport

Resting heart rate

The adult heart usually beats between 60 and 100 times per minute at rest. When the heart beats below 60 times per minute, it is bradycardia, which can be a severe problem if the heart rate is too slow and the heart cannot pump enough oxygen-rich blood to the body. A heart rate above 100 beats/min at rest is called tachycardia and is associated with an increased risk of cardiovascular disease. In terms of sports practice, cardiovascular or aerobic exercises such as running, swimming or cycling increase heart rate to a greater extent. In contrast, isometric activities, such as weight lifting, induce a minor increase in heart rate. Several studies have associated specific variations in the FADS1 and CD46 genes, among many others, with abnormal heart rates in particular genotypes.

What do your genetics say?

According to this study, your propensity is to have normal levels, in line with the average person.

Your genetic map

Gene	Genotype
TFPI	*GG*
LOC105375402	*AA*
RNU3P3	*TT*
SYT10	*AC*
LOC105369698	*AA*
CD46	*TT*
MYH6	*AA*
LOC105377979	*CC*
ACHE	*AG*
FADS1	*AG*
SLC35F1	*TT*
KIAA1755	*TT*
CCDC141	*GG*
GNB4	*TG*
CHRM2	*TT*
NKX2 5	*AA*
LOC105373926	*AA*
FNDC3B	*GG*
RFX4	*TT*
CPNE8	*TC*
RBFOX1	*GG*
SLC10A7 RNU1	*GG*

Health & Sport

Aortic root size

Echocardiographic measures of Left Ventricular (LV) structure and function are heritable phenotypes of cardiovascular disease.

Your genetic map

Gene	Genotype
SLC35F1	*GG*
TMEM232	*TC*
SMG6	*GG*
PRDM6	*GG*
HMGA2	*TT*
LINC02398	*AA*
LOXL1	*GG*

What do your genetics say?

According to this study, your propensity is to have normal levels, in line with the average person.

CROSS DNA

Health & Sport

Cardiomyopathy, Familial Hypertrophic, 1

Hypertrophic Cardiomyopathy (HCM) is typically defined by the presence of Left Ventricular Hypertrophy (LVH). SUCH LVH occurs in a non-dilated ventricle in the absence of other cardiac or systemic diseases capable of producing the observed magnitude of increased LV wall thickness, such as pressure overload (e.g., long-standing hypertension, aortic stenosis) or storage/infiltrative disorders (e.g., Fabry Disease, amyloidosis). The clinical manifestations of HCM range from asymptomatic LVH, to progressive heart failure, to Sudden Cardiac Death (SCD), and vary from individual to individual, even within the same family. Common symptoms include shortness of breath (particularly with exertion), chest pain, palpitations, orthostasis, presyncope, and syncope. Most often the LVH of HCM becomes apparent during adolescence or young adulthood, although it may also develop late in life, or in childhood.

Your genetic map

Gene	Genotype
MYBPC3	*DD*
MYBPC3	*CC*
MYH7	*CC*
MYH7	*GG*
MYH7	*II*
MYH7	*TT*
MYH7	*AA*
MYBPC3	*GG*

What do your genetics say?

We have not detected any pathogenic mutations, but you might have some in non-analysed genetic regions.

Health & Sport

Cardiomyopathy, Familial Hypertrophic, 2

Hypertrophic Cardiomyopathy (HCM) is typically defined by the presence of Left Ventricular Hypertrophy (LVH). SUCH LVH occurs in a non-dilated ventricle in the absence of other cardiac or systemic diseases capable of producing the observed magnitude of increased LV wall thickness, such as pressure overload (e.g., long-standing hypertension, aortic stenosis) or storage/infiltrative disorders (e.g., Fabry Disease, amyloidosis). The clinical manifestations of HCM range from asymptomatic LVH, to progressive heart failure, to Sudden Cardiac Death (SCD), and vary from individual to individual, even within the same family. Common symptoms include shortness of breath (particularly with exertion), chest pain, palpitations, orthostasis, presyncope, and syncope. Most often the LVH of HCM becomes apparent during adolescence or young adulthood, although it may also develop late in life, or in childhood.

Your genetic map

Gene	Genotype
TNNT2	*GG*
TNNT2	*CC*
TNNT2	*II*

What do your genetics say?

We have not detected any pathogenic mutations, but you might have some in non-analysed genetic regions.

Health & Sport

Brugada Syndrome 1

Brugada Syndrome (BrS) manifests with ST segment elevation in right precordial leads (V1 to V3), incomplete or complete Right Bundle Branch Block, and susceptibility to ventricular tachyarrhythmia and sudden death. BrS is an electrical disorder without overt myocardial abnormalities. As the aberrant ECG pattern is often intermittent and shows a distinct regionality, it is difficult to estimate the prevalence of the disease. The largest cohorts in Far East countries indicate a prevalence of 1/700-1/800. Its prevalence in Europe and the United States is lower: 1/3,300 to 1/10,000. An analysis of worldwide literature suggests a prevalence of the Type 1 (diagnostic) ECG pattern of 1/1000.

Your genetic map

Gene	Genotype
SCN5A	*GG*
SCN5A	*CC*

What do your genetics say?

We have not detected any pathogenic mutations, but you might have some in non-analysed genetic regions.

Health & Sport

Long Qt Syndrome 1

Congenital Long QT Syndrome (LQTS) is a hereditary cardiac disease characterised by a prolongation of the QT interval at basal ECG and by a high risk of life-threatening arrhythmias. The disease's prevalence is estimated at close to 1 in 2,500 live births.

Your genetic map

Gene	Genotype
KCNQ1	*CC*
KCNQ1	*GG*

What do your genetics say?

We have not detected any pathogenic mutations, but you might have some in non-analysed genetic regions.

Health & Sport

Arrhythmogenic Right Ventricular Dysplasia, Familial, 10

Die familiäre isolierte arrhythmogene rechtsventrikuläre Dysplasie (ARVC) ist die familiäre autosomal dominante Form der ARVC, einer Herzmuskelerkrankung, die durch lebensbedrohliche ventrikuläre Arrhythmien mit Linksschenkelblockkonfiguration - Left Bundle Branch Block Configuration (LBBBC) gekennzeichnet ist, die sich durch Herzklopfen, ventrikuläre Tachykardie, Synkopen und plötzliche, tödliche Angriffe manifestieren kann. Sie ist auf Dystrophie und fibro-fetten Ersatz des rechtsventrikulären Myokards zurückzuführen, was zu rechtsventrikulären Aneurysmen führen kann.

Your genetic map

Gene	Genotype
DSG2	GG
DSG2	TT
DSG2	AA

What do your genetics say?

We have not detected any pathogenic mutations, but you might have some in non-analysed genetic regions.

Lifestyle

Global benefit of the sport in your body

The benefits of exercise and regular physical activity are well known, and all people, regardless of age, sex or physical ability can notice its benefits. Exercise can prevent weight gain and help prevent many health problems, such as heart attacks, metabolic syndrome, type-2 diabetes, depression, various cancers, and arthritis.

Exercise releases oxygen and nutrients to tissues and helps the cardiovascular system work more efficiently. When the heart and lungs are healthier, the body has more energy.

Some people experience the benefits of exercise more quickly than others, but may also require dietary changes. People with certain genetic variants experience rapid results, such as lower cholesterol, triglycerides and blood pressure.

Your genetic map

Gene	Genotype
CETP	CC
BDNF	TC

What do your genetics say?

Based on your genotype, to note the benefits of regular exercise you should also make changes in your diet.

Lifestyle

Personal motivation

When we undertake any task or project, there can be two motivations. Rational motivation is the set of objective reasons why it is positive to carry out such a project. On the other hand, personal or intrinsic motivation is the set of psychological forces that lead us to undertake such action. It arises from within the individual and is usually a reliable indicator of our possibilities to carry it out. In sports, both types of motivations have an influence. For example, we can exercise because we are overweight or have high blood pressure, and we can do it because our body asks us to, without any apparent objective reasons.
In the case of personal motivation, genetics has a lot to say. For example, several studies show that variations in the BDNF and VDR genes can influence our motivation to practice sport.

Your genetic map

Gene	Genotype
BDNF	*TC*
VDR	*AA*

What do your genetics say?

According to your genotype, you are predisposed to have a greater personal motivation to practice sports. Other genetic and clinical factors may also play a role. Sport is an objectively healthy practice that helps prevent diseases, and taking into account the objective factors that advise us to exercise is a sound reinforcement. In addition, the advice of a personal trainer can provide reinforcement and technical and motivational support.

Lifestyle

Frequency of sport practice

By training frequency, we mean the number of sports sessions performed, or the number of times a specific muscle group is exercised, during a given period of time, (usually, a whole week). But, leaving aside technical definitions, we can say that frequency in sport is the periodicity with which we carry out this activity and is directly related to the achievement of the objectives set, together with other factors, such as the type of training, the intensity, the duration of the sessions, etc.
Genetics can influence our predisposition to exercise more frequently. In this regard, a study shows that a mutation in the GCKR gene is directly related to a greater tendency to practice sports more assiduously.

Your genetic map

Gene	Genotype
GCKR	TC

What do your genetics say?

According to your genotype, you are predisposed to practice sports frequently. However, other genetic and clinical factors may play a role. Regardless of your genetic predisposition, we recommend you consult a personal trainer, who can define your personalized routine with the optimal training, intensity, frequency and rest times according to your goals and physical condition.

Lifestyle

Power of sport on glucose levels

Insulin is a hormone generated by the pancreas, which controls glucose levels in two ways: by using it as a source of energy, mainly by the muscle and by regulating its production by the liver. This function is "insulin sensitivity". When insulin does not perform this function well, it is called "insulin resistance", and glucose accumulates in the blood, producing hyperglycemia, which can lead to obesity and type II diabetes. Sport involves increased energy expenditure, which positively influences glucose levels. According to genetics, specific variants of the HNF4A and LIPC genes show a predisposition to obtain adequate insulin and glucose levels, thanks to the practice of sports regularly.

Your genetic map

Gene	Genotype
HNF4A	*GG*
LIPC	*CC*

What do your genetics say?

According to your genotype, you are predisposed to obtain adequate insulin and glucose levels through regular sports practice. Other genetic and clinical factors may play a role. A decrease in weight, under the supervision of a physician or nutritionist, with particular emphasis on reducing the consumption of sweets, bread, pasta and other carbohydrates, can help to achieve better insulin control.

Lifestyle

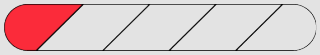
Cavities

Tooth decay is one of the most widespread dental diseases in the world, which led the World Health Organization (WHO) to declare its care and prevention as a priority for this millennium. Cavities are damaged areas on the surface of teeth that develop into openings or holes, and occur when certain bacteria secrete acids that attack the enamel. This damage can range from small holes to tooth loss. Their causes can range from eating processed foods or sugary beverages, to improper dental hygiene.
Recent studies have correlated the TAS1R2 gene with a greater predisposition to tooth decay.

Your genetic map

Gene	Genotype
TAS1R2	*GG*

What do your genetics say?



Based on your genotype, your predisposition to tooth decay is above average. Other genetic and clinical factors may be relevant. As we all know, brushing after meals, eating fruits and vegetables, and limiting foods high in sugar all help to maintain dental health. In addition, you should visit a dentist for periodic check-ups and professional cleanings.

Lifestyle

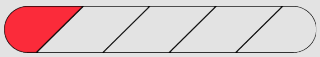
Caffeine and anxiety

Caffeine is an alkaloid of the xanthine group. This solid, crystalline, white and bitter-tasting substance acts as a psychoactive drug to stimulate the central nervous system.
In addition to this and other effects, caffeine is also related to anxiety, which is described as a feeling of restlessness, nervousness, worry, fear, or panic about what may happen. This process is triggered by neuronal receptors, called adenosine receptors, that are located in the brain and are closely related to activities such as sleep and neuronal activity. Recent studies have discovered a relationship between a genetic variant in the ADORA2A gene and caffeine-induced anxiety.

Your genetic map

Gene	Genotype
ADORA2A	*TC*

What do your genetics say?



Based on your genotype, your predisposition to caffeine-influenced anxiety is above average. Other genetic and clinical factors may be relevant.

Lifestyle

Benefits of Exercise in Cholesterol

One of the benefits of exercise is improved cholesterol levels. HDL cholesterol is known as good cholesterol, and having high levels of HDL is beneficial. Many people can improve their HDL levels through exercise.

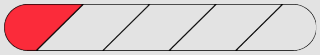
Research has shown that exercise stimulates enzymes that help move bad cholesterol from the blood to the liver, allowing it to be excreted with bile. It has also been stipulated that exercise increases the size of protein particles that carry cholesterol through the blood, reducing the possibility that small particles clog arteries.

Individuals with certain genetic variants will do well to increase their good cholesterol levels while exercising, while carriers of other genetic variants are less likely to lower their bad cholesterol levels through exercise alone.

Your genetic map

Gene	Genotype
CETP	*CC*
PPARD	*TT*

What do your genetics say?



Your genotype is not associated with a greater capacity to regulate your cholesterol levels through exercise.

Lifestyle

Benefit of exercise in body mass index

Exercise is part of weight loss plans, and is a crucial tool for maintaining a healthy weight. Physical activity is beneficial for all people, regardless of their genetics, but exercise is especially recommended for people at increased risk of being overweight.

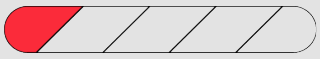
People with a certain variant in the genetic marker of the FTO gene are more likely to be overweight, have an increased Body Mass Index, and waist circumference. However, a large-scale study has shown that genetic susceptibility to obesity-induced variants in the FTO gene can be changed by adopting an active lifestyle.

In fact, people who are more susceptible to obesity experience greater weight loss by exercising at moderate intensities.

Your genetic map

Gene	Genotype
FTO	GG
FTO	AC

What do your genetics say?



Your genotype is not associated with easier weight loss through exercise.

Lifestyle

Impulsivity

Impulsivity is the predisposition to react unexpectedly, quickly, and disproportionately to an external situation that may be threatening, or to an internal stimulus specific to the individual, without prior reflection or taking into account the consequences that one's actions might have. Variants of the DBH gene related to dopamine metabolism seem to influence impulsivity.

Your genetic map

Gene	Genotype
DBH	*TC*

What do your genetics say?

Based on your genotype, you do not have a propensity towards impulsive personality traits. Other genetic and clinical factors may also have an effect.

Lifestyle

Night person

The body's internal biological clock controls behaviour and physiological processes occurring in 24-hour cycles, such as the sleep-wake cycle. Numerous genes regulate one's circadian rhythm. One of them, CLOCK, has been associated with a preference for early or late-night behaviour.

Your genetic map

Gene	Genotype
CLOCK	*AA*
PER3	*CC*

What do your genetics say?

Your genotype is not associated with a genetic propensity to being a night owl.

Lifestyle

Figurative creativity

Creativity refers to the ability to invent or create something. It is closely related to human development and achievement, both individually and socially. The COMT gene and its function as a dopamine transmitter have long been researched as a contributor to creativity.

Your genetic map

Gene	Genotype
COMT	GG

What do your genetics say?

Based on your genotype, your genetic propensity to have figurative creative skills is normal.

Lifestyle

Ease tanning

Tanning is the physiological response stimulated by ultraviolet (UV) radiation from the sun's rays. Exposure to UV rays increases the production of eumelanin, a type of melanin pigment that darkens the skin to protect it from damage. Different individuals' tanning capacities vary, and can have positive and negative effects on the health of the skin.

People with less capacity are more prone to burns and sun spots, wrinkles, folate loss and melanoma, while people who tan easily are at risk for Vitamin D deficiency, because they can produce less Vitamin D in response to solar exposure.

The skin's tanning capability is variable and is genetically determined. People with certain variants in genes related to pigmentation usually have light-coloured eyes and skin, and a reduced tanning capacity. Variations in the GAS8 gene (melanin receptor) are the most determinant, and are associated with red hair, freckles, increased sensitivity to the sun and less tanning.

Your genetic map

Gene	Genotype
LOC105374069	TC
LOC105374875	TC
HERC2	AA
ASIP	CC
ASIP	GG
IRF4	CC
MC1R	CC
TYR	AC
TYR	GG
GAS8	CC

What do your genetics say?

Your skin is very likely to tan easily.

Lifestyle

Sunspots

Facial sunspots (sun lentigos, or lentigines) are oval or round, pigmented spots that measure 2 to 20 mm, are brown, uniform, and located in areas frequently exposed to the sun, like the face, arms and back of the hands. They are larger than freckles/ephelides, do not disappear in the winter, and are common in ageing skin.

Solar lentigines are the result of the local growth of melanin-producing cells in response to ultraviolet radiation. These spots are more frequent among the Caucasian and Asian populations, and in women, especially after age 50. Although they are benign lesions that do not need medical treatment, they indicate that sun exposure has been excessive. For aesthetic reasons they can be eliminated by different treatments, although the best form of prevention is the use of sunscreens and limiting sun exposure.

Variations in MC1R and IRF4 genes have been associated with an increased risk of sunspots. There are numerous risk alleles in the MC1R (melanin receptor) gene.

Your genetic map

Gene	Genotype
IRF4	*CC*
MC1R	*GG*
MC1R	*CC*

What do your genetics say?

Your predisposition to sunspots is very low.

Lifestyle

Protection against pollution

Environmental pollution causes signs of ageing on the skin, dark spots and inflammation. Two important enzymes (EPHX1 and NQO1) protect the skin and body from highly reactive external chemicals (epoxides and quinones).

The EPHX1 enzyme prevents the absorption of epoxides by converting them into less reactive, water-soluble forms. The NQO1 enzyme converts the coenzyme Q10 (ubiquinone) to its reduced form, ubiquinol, which captures free radicals in the mitochondria and in the lipid membrane of the skin. This enzyme detoxifies quinones by converting them into reduced forms that can be excreted. On the skin, both enzymes play an important role in preventing the outer layer (the epidermis) from absorbing toxins.

Genetic variations in the EPHX1 gene may cause deficiencies in its function and, in the NQO1 gene, decrease the production of ubiquinol. People with reduced levels of these two enzymes suffer from significantly reduced skin protection against environmental toxins.

Your genetic map

Gene	Genotype
EPHX1	*TC*
NQO1	*GG*

What do your genetics say?

You enjoy good protection against that external agents that can damage your skin.

Lifestyle

Sensitivity to the sun

The skin can be sensitive to the sun for a variety of reasons: it is underdeveloped (childhood), or inflamed (atopic dermatitis or acne), or due to photosensitivity induced by drugs or dermatological treatments. In these cases it is vital to use protection with a Sun Protection Factor (SPF) suitable for each type of skin.

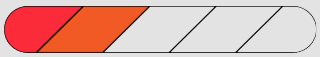
Sensitivity to the harmful effects of ultraviolet radiation is inheritable. Numerous large-scale studies have identified genetic variations that enhance sensitivity to the sun and the tendency we have to suffer from sunburn (erythema).

The genes related to skin pigmentation (ASIP, TYR, MC1R, and OCA2) and a low tanning capability are those that most influence the skin's sensitivity to the sun. In addition, there is a strong association between DNA repair genes and the tendency to suffer from sunburn. These genes have no relation to tendency to tan, so there is an underlying mechanism to burns that is independent of pigmentation.

Your genetic map

Gene	Genotype
NTM	AA
TYR	GG
ASIP	CC
LOC105374875	TC

What do your genetics say?



You are at a high risk of skin sensitivity to the sun. Supplementation with omega-3 reduces sensitivity to solar erythema. Apply a sunblock suitable for your skin type, even in cases of brown skin or good tans. Keep a close eye on any changes in the colour, size or texture of moles.

Lifestyle

Dermal sensitivity

The skin functions as a permeable barrier that blocks the penetration of harmful pathogens and toxins. A hyperreactive immune response to allergens and deficiencies in protection against environmental toxins contribute to the overall risk of dermal sensitivity. In some cases dermal sensitivity results in atopic dermatitis, or eczema, which is the most common skin involvement, with a prevalence of up to 20% in children and 3% in adults in developed countries. People living in cities and in dry climates are more susceptible to this disease. Atopic dermatitis is characterised by very dry skin and inflammatory lesions, which are frequently infected by bacteria and viruses. It is important to see a dermatologist if you have these symptoms.

Genetic and environmental factors appear to be the cause of increased dermal sensitivity. Your overall risk is calculated using the results of a large-scale study in which a number of genetic variants associated with increased risk have been identified.

Your genetic map

Gene	Genotype
IL18	*CG*
ADAD1	*GG*
EPHX1	*TC*

What do your genetics say?

You have genetic variants associated with normal dermal sensitivity.

Lifestyle

Inflammation of the skin

Skin inflammation occurs when skin cells have a hyperreactive response to allergens or toxins. Acute inflammation is a natural reaction to repair the skin after being exposed to environmental infections or toxins, and usually lasts a few days. While it is a useful short-term response, if inflammation continues it can play a negative role. When the inflammation is chronic it begins to be destructive and damages the skin.

There are numerous stimuli that induce chronic inflammation: UV rays, stress, toxins, tobacco, alcohol, pathogen infections, excess free radicals. While inflammation is the skin's first line of defence, excessive inflammatory response causes premature ageing of the skin.

Signs include dermal tenderness, redness, and irritation. Genetic variations in various proinflammatory and antiinflammatory genes are associated with an increased risk of chronic skin inflammation.

Your genetic map

Gene	Genotype
IL18	*CG*
IL6	*AA*
IFNG	*AG*
ADAD1	*GG*
IL10	*AG*
IL6	*CC*

What do your genetics say?

Your genetics predispose you to a lower risk of excessive inflammatory responses on your skin.

Lifestyle

Freckles

Freckles, also known as ephelides, are hyperpigmented spots that often appear on the face, neck, thorax, and arms. They are the result of an increase in the production of melanin in the skin. They usually appear in childhood, but decrease with age, and darken with sun exposure.

Freckles are common among the Caucasian population and more frequent in light-skinned and red-haired people, who tend not to tan, are more likely to suffer sunburn and sun spots, and are at an increased risk for malignant melanoma and skin cancers.

Freckles are associated with genetic variations in the LOC105374875, IRF4 and MC1R genes. The MC1R gene contributes the most to red hair and fair skin. The number of parts depends on the number of variants of the MC1R gene.

Your genetic map

Gene	Genotype
LOC105374875	*CC*
Intergenic	*GG*
IRF4	*CC*
TYR	*AC*
TYR	*GG*
MC1R	*CC*

What do your genetics say?

Your genotype is the most favourable, so you are at a very low risk of freckles.

Lifestyle

Psoriasis

Psoriasis is a skin disease that causes itchy or sore patches of thick, red skin with silvery scales. Patients usually get the patches on their elbows, knees, scalp, back, face, palms and feet, but they can show up on other parts of the body. Some people who have psoriasis also get a form of arthritis called psoriatic arthritis. A problem with your immune system causes psoriasis. In a process called cell turnover, skin cells that grow deep in your skin rise to the surface. This normally takes a month. In cases of psoriasis this happens in just days, because one's cells rise too fast. The disease is not hereditary, but there is a genetic predisposition to it, and a third of those affected have direct relatives with psoriasis.

What do your genetics say?

According to this study, you have a propensity similar to that of most of the population.

Your genetic map

Gene	Genotype
TP63	*AC*
COG6	*TC*
LOC144817	*TC*
RUNX1	*CC*
CLIC6	*AG*
LOC107986171	*CC*
LOC285626	*TC*
TNIP ANXA6	*AG*
IL12B	*TC*
IFIH1	*TC*
LCE region	*AC*
TNFAIP3	*CC*
REL DT	*AA*
IL12B	*TG*
PSMA6 NFKBIA	*TG*
NOS2	*AA*
IL13	*GG*
RIGI	*TC*
IL28RA	*CC*
QTRT1	*AG*
IL23R	*CC*
STAT2	*CC*

CROSS DNA