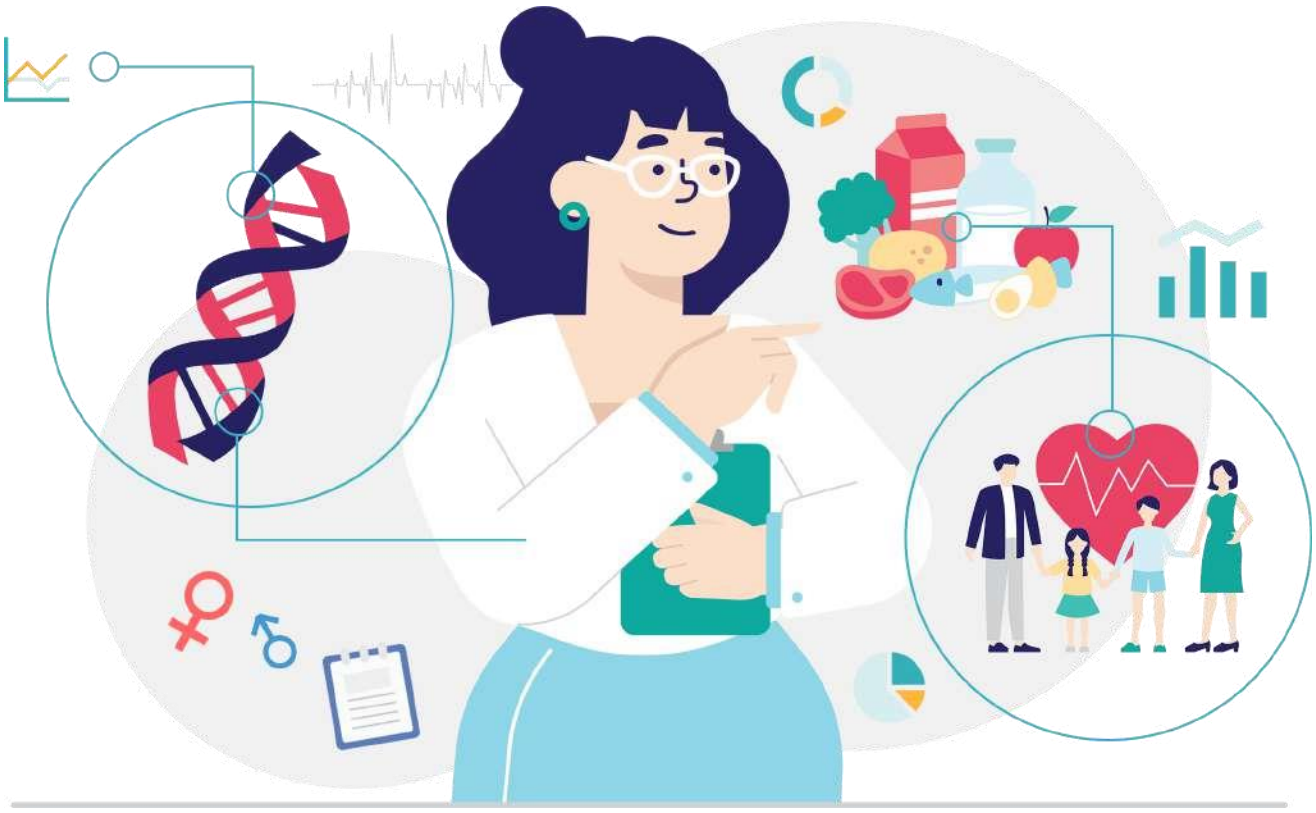
Personal Genomics Report

Customer ID:	**36220513024104**
Date of Birth (DD/MM/YYYY):	**01/01/1970**
Gender:	**/**
Reported Date (DD/MM/YYYY):	**22/08/2024**



Ginekalix laboratory Address: Stevo Crvenkovski No. 32-1, Ext. 2 and 3; 1000, Skopje; North Macedonia
Tel: +389 2 20 30 424 | E-mail:laboratory@ginekaliks.mk

Let us introduce you to the world of DNA

DNA, namely deoxyribonucleic acid, is a complex molecule that is present deep inside cells through all over your body. DNA contains all of the information necessary to build and define you. DNA is written in code to form genes, making you one-of-a-kind on this planet.

The DNA molecule consists of two strands that wind around one another to form a shape known as a double helix. Each strand has a sugar-phosphate backbone loaded with four bases: Adenine (A), Cytosine (C), Guanine (G) and Thymine (T). The two strands spiral about one another by base-pairing: an A with a T, and a C with a G. DNA strands are so long that they must be packed, in the form of chromosome, in order to fit in the nucleus of every cell.

Explore your DNA, know yourself better.

"Genes are like the story, and DNA is the language that the story is written in."

Our service can help you understand your "*stories*" better by exploring through your DNA. You can make a better living with food your body may prefer, or even know what exercise options are safer and effective for you.

Ginekalix laboratory

Address: Stevo Crvenkovski No. 32-1, Ext. 2 and 3; 1000, Skopje; North Macedonia

Tel: +389 2 20 30 424 | E-mail:laboratory@ginekaliks.mk

Wellness Health

Sport genes analysis helps you discover how your genes influence attributes like physical characteristics, exercise response and injury risk. You can also learn the influences of diet or exercise on weight as well as how to get the most out of your workouts.

Ginekalix laboratory Address: Stevo Crvenkovski No. 32-1, Ext. 2 and 3; 1000, Skopje; North Macedonia
Tel: +389 2 20 30 424 | E-mail:laboratory@ginekaliks.mk

Wellness Health

10 Reports

Basal Metabolism

Total Calorie Intake Tendency	Moderate
Total Carbohydrate Intake	Moderate
Saturated Fat Sensitivity	Slightly Low
Carbohydrate Sensitivity	Moderate
Caffeine Sensitivity	Low

Weight Management

Influences of Exercise on Weight	Moderate
Influences of Diet on Weight	Slightly Small

Sport Protection

Anterior Cruciate Ligament (ACL) Injury Risk	Moderate
Achilles Tendon Injury Risk	Slightly Low
Lumbar Disc Injury Risk	Slightly Low

Contents

Total Calorie Intake Tendency

Human body consumes energy which can be measured by Calorie. The higher the total Calorie intake tendency, the greater the likelihood a person is to consume more food. If weight loss is required, this population must pay special attention to how much they eat and exercise can help with avoiding Calorie intake.

My Total Calorie Intake Tendency

Moderate

29.7% of DNAset users are similar to me

Knowledge

Energy source

The carbohydrates, fats and proteins in food will be decomposed and absorbed in the human body to provide energy for normal activities.

BMI and obesity

If the energy intake from food is more than the energy consumed by daily life and exercise, the weight will increase over time. When the energy intake from food is less than the energy consumed by daily life and exercise, the weight will be reduced. The degree of body obesity can be roughly estimated by the body mass index (BMI for short, which is defined as the weight calculated in kilograms divided by the square of the height calculated in meters). The definition of overweight and obesity made by the World Health Organization for adults is: BMI ≧25 as overweight, and BMI ≧30 as obesity.

Recommended calorie intake

The dietary guidelines for Chinese residents recommend that adult women should intake 1800-2200 kcal per day, and adult men should intake 2200-2600 kcal per day. Studies have found that individuals with certain genotypes tend to intake higher energy in their daily diet, and their BMI index is often higher. Therefore, people with a higher tendency of total calorie intake should control their appetite more strictly if they want to reduce fat.

My Genetic Result Details

Gene locus	Gene name	My genotype	Description
RS5082	APOA2	AA	no tendency to consume an increased a mount of calorie
RS9939609	FTO	AT	inclined to consume slightly more calorie

Test details

Applicable situation

The total calorie intake tendency item uses two polymorphic loci on FTO and APOA2 genes: rs9939609 and rs5082.

Notification

1. The test is mainly based on the research of Caucasian, and other populations are only for reference.

2. The test may not cover all genes or loci that related to the tendency of total calorie intake.

Scoring model

According to the frequency of the reference sample and the control sample carrying the corresponding genotype in the literature, the weight of each locus is divided. Finally, the item is scored according to the detected genotype and the weight of the locus itself. The average score of all users and the distribution of scores are obtained through the algorithm, and the user is divided into project results accordingly.

How to use the test results

Notification

The test only evaluates your total calorie intake tendency from the genetic level, and does not include the influence of environment and other factors. Therefore, the test results may not be equal to your actual calorie intake.

Population samples

The basis of the test is mainly from the research of Caucasian.

Limit of detection

The test may not include all loci related to total calorie intake tendency.

Total Carbohydrate Intake

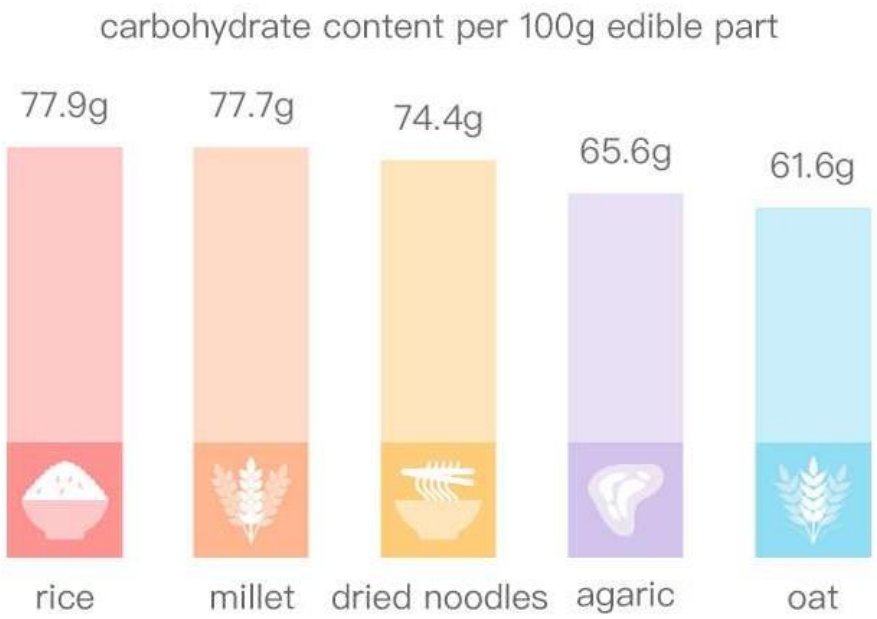
Those who have a greater tendency to consume carbohydrates need to pay more attention to controlling their daily intake of carbohydrates.

My Total Carbohydrate Intake

Moderate

66.9% of DNAset users are similar to me

Common carbohydrate rich foods



Knowledge

What are carbohydrates

In food science, carbohydrates refer to starch-rich foods (such as bread and cereals) or simple sugar foods (edible sugar). After entering the human body, carbohydrates can be stored in the form of glycogen, or they can be metabolized under aerobic or anaerobic conditions to produce energy, and they can also be converted into fat for storage in the body. They are the main energy source for human daily life activities. The World Health Organization recommends that in a reasonable diet, the energy from carbohydrates should account for 55% to 65% of the total energy intake.

Recommended intake

The naturally occurring sugars in intact fruits and vegetables belong to endogenous sugars, while sucrose (white sugar, brown sugar), sweet additives (such as starch hydrolyzed products such as glucose syrup, maltose syrup, corn syrup, etc.), honey and concentrated fruit juices used in the food industry all belong to free sugars. Due to the great impact of free sugar on dental caries and cardiovascular diseases, the World Health Organization (WHO) recommends that the intake of free sugar should be limited to less than 10% of dietary energy intake.

My Genetic Result Details

Gene locus	Gene name	My genotype	Description
RS5082	APOA2	AA	inclined to consume more carbohydrates
RS35874116	TAS1R2	TT	no tendency to consume an increased a mount of carbohydrates

Test details

- Applicable situation

The carbohydrate intake tendency item uses two polymorphic loci on APOA2 and TAS1R2 genes: rs5082 and rs35874116.

- Notification

1. The test is mainly based on the research of Caucasian, and other populations are only for reference.

2. The test may not cover all genes or loci that related to the tendency of carbohydrate intake.

Scoring model

According to the frequency of the reference sample and the control sample carrying the corresponding genotype in the literature, the weight of each locus is divided. Finally, the item is scored according to the detected genotype and the weight of the locus itself. The average score of all users and the distribution of scores are obtained through the algorithm, and the user is divided into project results accordingly.

How to use the test results

- Notification

The test only evaluates your carbohydrate intake tendency from the genetic level, and does not include the influence of environment and other factors. Therefore, the test results may not be equal to your actual carbohydrate intake.

- Population samples

The basis of the test is mainly from the research of Caucasian.

- Limit of detection

The test may not include all loci related to carbohydrate intake tendency.

Saturated Fat Sensitivity

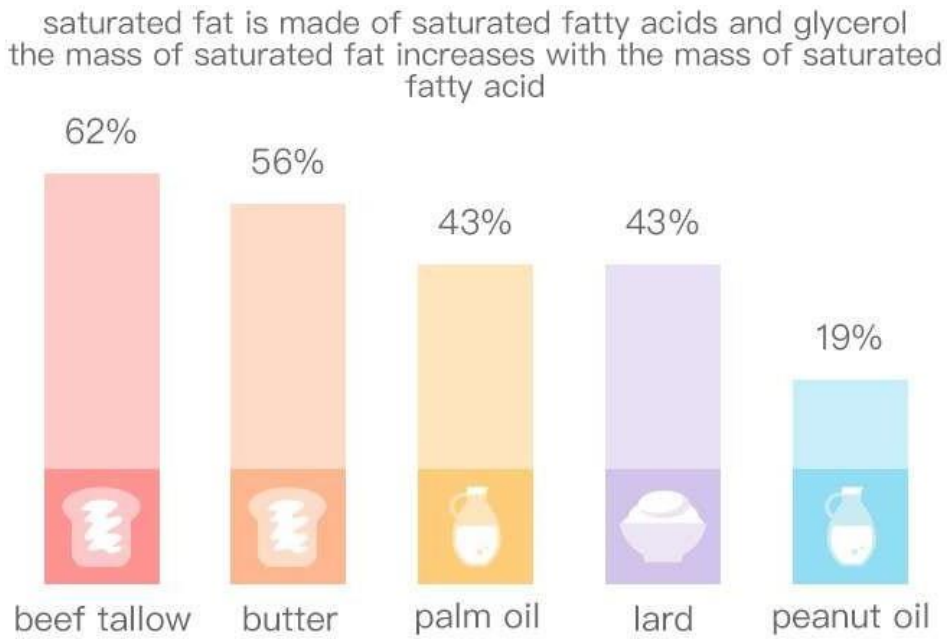
Higher saturated fat sensitivity means that consumption of the same amount of saturated fat results in higher energy, so attention must be paid to the proportion of saturated fat in the daily diet.

My Saturated Fat Sensitivity

Slightly Low

10.6% of DNAset users are similar to me

Common edible oils rich in saturated fatty acids



Ginekalix laboratory
Address: Stevo Crvenkovski No. 32-1, Ext. 2 and 3; 1000, Skopje; North Macedonia
Tel: +389 2 20 30 424 | E-mail:laboratory@ginekaliks.mk

Knowledge

What is saturated fat

Fat is one of the important sources of human energy, It can provide essential fatty acids (fatty acids that can only be ingested through food but cannot be synthesized by itself, such as linoleic acid), which is conducive to the digestion and absorption of fat-soluble vitamins. Fat is composed of glycerin and fatty acids. According to the chemical structure, fatty acids without unsaturated bonds are called saturated fatty acids, and the corresponding fat is saturated fat.

Problems caused by excessive saturated fat

In common foods, butter, cheese and animal oil contain more saturated fat. The human need to intake a certain amount of saturated fat to maintain health. However, the intake of saturated fat will lead to the increase of low-density lipoprotein (easier to stick to the inner wall of blood vessels and increase the risk of vascular obstruction). Therefore, excessive intake of saturated fat may lead to obesity, hypertension, atherosclerosis, etc.

Recommended intake

The World Health Organization recommends that the intake of fat should account for less than 30% of the total energy, and the intake of fat should be changed from saturated fat to unsaturated fat as much as possible. People with high sensitivity to saturated fats should strictly control the content of saturated fatty acids in their food if they need to reduce fat.

My Genetic Result Details

Gene locus	Gene name	My genotype	Description
RS1799986	LRP1	CC	not very sensitive to saturated fats
RS1800629	TNF, LTA	GG	not very sensitive to saturated fats
RS328	LPL	CG	relatively sensitive to saturated fats
RS5082	APOA2	AA	not very sensitive to saturated fats

Test details

- Applicable situation

The saturated fat sensitivity item uses four polymorphic loci on genes such as TNF, LRP1 and APOA2 : rs1799986, rs1800629, rs328, and rs5082.

- Notification

1. The test is mainly based on the research of Caucasian and Asian, and other populations are only for reference.
2. The test may not cover all genes or loci that related to the saturated fat sensitivity.

Scoring model

According to the frequency of the reference sample and the control sample carrying the corresponding genotype in the literature, the weight of each locus is divided. Finally, the item is scored according to the detected genotype and the weight of the locus itself. The average score of all users and the distribution of scores are obtained through the algorithm, and the user is divided into project results accordingly.

How to use the test results

- Notification

The test only evaluates your sensitivity to saturated fat from the genetic level, and does not include other factors. Therefore, the test results may not be equal to your actual sensitivity to saturated fat.

- Population samples

The basis of the test is mainly from the research of Caucasian and Asian.

- Limit of detection

The test may not include all loci related to saturated fat sensitivity.

Carbohydrate Sensitivity

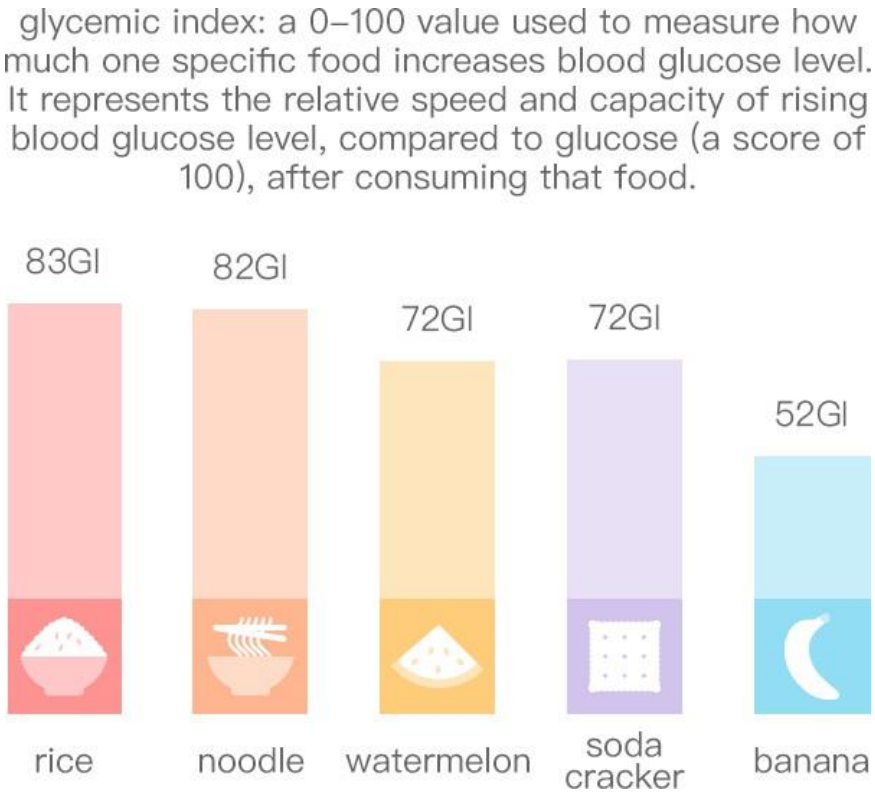
Carbohydrate sensitivity can be simply understood as the amount of calories the body gets from carbohydrates.

My Carbohydrate Sensitivity

Moderate

28.8% of DNAset users are similar to me

Common foods with a high glycemic index



Knowledge

Carbohydrates and blood sugar regulation

After entering the human body, carbohydrates from food are digested and decomposed into Monosaccharides to enter the blood circulation, which will raise blood sugar levels. At this time, the body regulates the secretion of insulin to lower the blood sugar levels in the body.

What is Glycemic Index (GI)

After different foods enter the gastrointestinal tract, the amount and speed of the final products such as glucose entering the blood are also different due to the difference digestion speed and absorption degree, so they have different effects on blood glucose level. Glycemic index (GI) is used to measure the impact of food containing the same amount of carbohydrates on blood glucose concentration. Generally, we call food with glycemic index greater than 70 as high GI food and food with glycemic index less than 55 as low GI food.

GI and diseases

If you eat a lot of high GI food for a long time, you will need to secrete a large amount of insulin regularly. After a certain period of time accumulation, human cells may become resistant to insulin. The consequence is that they can no longer effectively reduce blood sugar levels, leading to a series of problems such as obesity, diabetes, fatty liver and so on. Therefore, people with high carbohydrate sensitivity should not only control their carbohydrate intake, but also choose foods with low glycemic index as much as possible.

My Genetic Result Details

Gene locus	Gene name	My genotype	Description
RS12255372	TCF7L2	GG	not very sensitive to carbohydrates
RS1801282	PPARG	CC	high carbohydrate sensitivity
RS4402960	IGF2BP2	GG	not very sensitive to carbohydrates
RS5219	KCNJ11	CT	relatively sensitive to carbohydrates
RS7903146	TCF7L2	CC	not very sensitive to carbohydrates

Test details

Applicable situation

The carbohydrate sensitivity item uses six polymorphic loci on TCF7L2 and IGF2BP2 genes: rs5219, rs9939609, rs1801282, rs12255372, and rs4402960.

Notification

1. The test is mainly based on the research of Caucasian and Asian, and other populations are only for reference.

2. The test does not cover all genes or loci that related to the carbohydrate sensitivity.

Scoring model

According to the frequency of the reference sample and the control sample carrying the corresponding genotype in the literature, the weight of each locus is divided. Finally, the item is scored according to the detected genotype and the weight of the locus itself. The average score of all users and the distribution of scores are obtained through the algorithm, and the user is divided into project results accordingly.

How to use the test results

Notification

The test only evaluates your carbohydrate sensitivity from the genetic level, and does not include other factors such as family history of diabetes, regular exercise and so on. Therefore, the test results may not be equal to your actual carbohydrate sensitivity.

Population samples

The basis of the test is mainly from the research of Caucasian and Asian.

Limit of detection

The test may not include all loci related to carbohydrate sensitivity.

Caffeine Sensitivity

Caffeine sensitivity is related to the speed of caffeine metabolism. People with higher sensitivity should be more careful to prevent excessive caffeine consumption.

My Caffeine Sensitivity

Low

38.9% of DNAset users are similar to me

Graph of caffeine content in common beverages

Ginekalix laboratory Address: Stevo Crvenkovski No. 32-1, Ext. 2 and 3; 1000, Skopje; North Macedonia
Tel: +389 2 20 30 424 | E-mail:laboratory@ginekaliks.mk

Knowledge

Metabolic profile

Caffeine is a xanthine alkaloid compound that acts as a central nervous stimulant. It can increase the activity of neurons in multiple brain regions by promoting the release of norepinephrine. Caffeine sensitivity is related to the rate of caffeine metabolism. Caffeine is mainly oxidized in the liver by the cytochrome oxidase system. The CYP1A2 gene is responsible for removing caffeine from the body. The high sensitivity of caffeine means that caffeine has a slower metabolic rate in the body of such people, and it stays in the body for a longer time.

Control caffeine intake

Most energy drinks and sports supplements contain caffeine, because caffeine can increase nerve excitability and bring better exercise performance. However, it should be noted that some studies have shown that because the sudden increase of adrenaline secretion will accelerate the heart rate and increase blood pressure, people with higher caffeine sensitivity will also have a greater risk of myocardial infarction after intaking excessive caffeine intake. Therefore, the higher the sensitivity, the more important it is to control the intake of energy drinks to prevent the discomfort caused by large amounts of caffeine in the body for a long time.

My Genetic Result Details

Gene locus	Gene name	My genotype	Description
RS762551	CYP1A2	AA	not very sensitive to caffeine

Test details

Applicable situation

The caffeine sensitivity item uses a polymorphic locus on the CYP1A2 gene: rs762551.

Notification

1. The test is mainly based on the research of Caucasian, and other populations are only for reference.

2. The test may not cover all genes or loci that related to the caffeine sensitivity.

Scoring model

According to the frequency of the reference sample and the control sample carrying the corresponding genotype in the literature, the weight of each locus is divided. Finally, the item is scored according to the detected genotype and the weight of the locus itself. The average score of all users and the distribution of scores are obtained through the algorithm, and the user is divided into project results accordingly.

How to use the test results

- Notification

The test only evaluates your caffeine sensitivity from the genetic level, and does not include other factors such as age, liver function, dietary habits and so on. Therefore, the test results may not be equal to your actual caffeine sensitivity.

- Population samples

The basis of the test is mainly from the research of Caucasian.

- Limit of detection

The test may not include all loci related to caffeine sensitivity.

Influences of Exercise on Weight

Exercise is a scientific and healthy way to controlling weight. Usually the greater the amount and longer the duration of exercise, the more sugar and fat consumed.

My Influences of Exercise on Weight

Moderate

36.7% of DNAset users are similar to me

Suggestions

- The effect of exercise on weight is related to a variety of Gene mutations. Exercise has Medium effect on your weight.
- Exercise alone has medium effect on weight control. It is suggested to combine with other methods:
  - Appropriately increase the exercise time and frequency
  - Select the appropriate Sports tonics to improve the exercise effect
  - Dietary adjustment, Caloric restriction
- Please try to choose different sports forms for enjoying sports and developing exercise habit.

* If you need dietary supplement, it is recommended that you consult an authoritative health professional or clinician for help.

Knowledge

Benefits of exercise

Regular exercise has significant health benefits, such as reducing the risk of cardiovascular disease, type 2 diabetes, even some cancers, and the most benefit is weight control.

Genes and the effect of exercise on weight

In fact, after the same time and exercise intensity, the effect of weight control is different. Some people's weight will change significantly, while others may not that is related to the genetic factors according to the research. Genome-wide association analysis (GWAS) showed

that that FTO and PPARG gene were significantly correlated with the weight change after exercise.

What can I do

If exercise has a greater effect on weight, it is better to control your weight through exercise. If you need to lose weight, it is suggested to select appropriate sports and actively participate in exercise based on the test results of other sports (such as explosive power and endurance).

My Genetic Result Details

Gene locus	Gene name	My genotype	Description
RS1800588	LIPC	CT	a consistent amount of exercise has a no real impact on weight loss
RS1801282	PPARG	CC	a consistent amount of exercise has a relatively good impact on weight loss
RS9939609	FTO	AT	a consistent amount of exercise has a no real impact on weight loss

Test details

Applicable situation

The effect of exercise on weight item uses three polymorphic loci on the FTO and PPARG gene: rs9939609, rs1801282 and rs1800588.

Notification

1. The basis of the test is mainly from the research of Caucasian, other populations are for reference only.

2. The test may not cover all genes or loci that related to the effect of exercise on weight.

Scoring model

According to the frequency of the reference sample and the control sample carrying the corresponding genotype in the literature, the weight of each locus is divided. Finally, the item is scored according to the detected genotype and the weight of the locus itself. The average score of all users and the distribution of scores are obtained through the algorithm, and the user is divided into project results accordingly.

How to use the test results

- Notification

The test evaluates the effect of exercise on weight at gene levels and does not include the other factors such as age, sex, eating habits, etc. Therefore, the test result may not be equivalent to the actual impact of exercise on weight.

- Population samples

The basis of the test is mainly from the research of Caucasian.

- Limit of detection

The test may not include all loci that related to the effect of exercise on weight.

Influences of Diet on Weight

Eating habit is key to controlling weight. Long-term intake of foods that are high in fats and calories can easily lead to obesity and also cause certain nutritional deficiencies. Poor eating habits such as regular overeating, nighttime snacking and having too many snacks are also important causes of obesity.

My Influences of Diet on Weight

Slightly Small

39.1% of DNAset users are similar to me

Suggestions

- The effect of diet on weight is related to a variety of Gene mutations. Diet has Less effect on your weight.
- Diet alone has less effect on weight control. It is suggested to combine with exercise
- Dietary adjustment and Dietary restriction contribute to improve the effect of weight control
- Avoid Abnormal eating behaviors such as overeating and nighttime eating

* If you need dietary supplement, it is recommended that you consult an authoritative health professional or clinician for help.

Knowledge

Benefits of diet

Unhealthy eating habits can contribute to obesity. Long-term ingestion of high-calorie and high-fat foods can easily lead to obesity and deficiency of certain nutrients. Besides, bad eating habits, such as frequent overeating, night meal and snacking habits are also important causes of obesity.

Genes and the effect of diet on weight

In fact, after the same dietary restriction, the effect of weight control is different. Some people's weight will change significantly, while others may not that is related to the genetic factors according to the research. Genome-wide association analysis (GWAS) showed that that APOA5, PPARG and PPARG gene were significantly correlated with the weight change after

dietary restriction. Further research shown that PPARG gene is a transcription factor to participate in the regulation of lipid differentiation, utilization, metabolism and obesity, APOA5 gene regulates the activity of lipoprotein lipase and is intimately connected to the blood lipid metabolism and APOA2 gene is associated with visceral fat accumulation and triglyceride-rich lipoprotein metabolism.

What can I do

If diet has a greater effect on weight, it is better to control your weight through diet. If you need to lose weight, it is suggested to select appropriate food matching based on the other test results (such as carbohydrate intolerance and saturated fatty acid intolerance).

My Genetic Result Details

Gene locus	Gene name	My genotype	Description
RS1801282	PPARG	CC	dietary restriction may have a slightly poor impact on weight loss
RS5082	APOA2	AA	dietary restriction may have a slightly poor impact on weight loss
RS662799	APOA5	AA	dietary restriction may have a slightly poor impact on weight loss

Test details

Applicable situation

The effect of exercise on weight item uses three polymorphic loci on the APOA5, PPARG and APOA2: rs662799, rs1801282 and rs5082.

Notification

1. The basis of the test is mainly from the research of Caucasian, other populations are for reference only.

2. The test may not cover all genes or loci that related to the effect of diet on weight.

Scoring model

According to the frequency of the reference sample and the control sample carrying the corresponding genotype in the literature, the weight of each locus is divided. Finally, the item is scored according to the detected genotype and the weight of the locus itself. The average score

of all users and the distribution of scores are obtained through the algorithm, and the user is divided into project results accordingly.

How to use the test results

Notification

The test evaluates the effect of diet on weight at gene levels and does not include the other factors such as age, sex, exercise habits, etc. Therefore, the test result may not be equivalent to the actual impact of diet on weight.

Population samples

The basis of the test is mainly from the research of Caucasian.

Limit of detection

The test may not include all loci that related to the effect of diet on weight.

Anterior Cruciate Ligament (ACL) Injury Risk

Knee anterior cruciate ligament (ACL) prevents the tibia from moving forward to the femur, so it often breaks during intense torsional movement and ACL injury is very common among athletes. People with risk of ACL injury should avoid sudden change of direction in movement during exercises.

My Anterior Cruciate Ligament (ACL) Injury Risk

Moderate

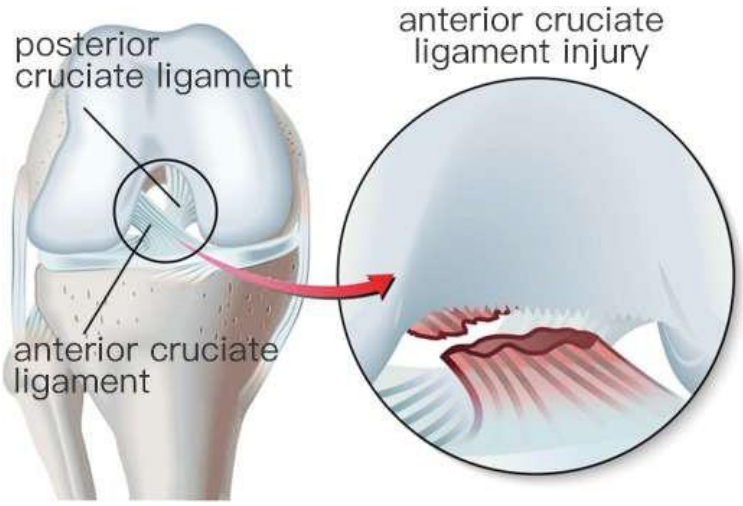
23.9% of DNAset users are similar to me

Knowledge

Physiological structure

Ligaments are flexible elastic connective tissue that attaches to the movable part of the bone, connecting the bone and limiting its range of activity to avoid injury.

The anterior cruciate ligament, also known as the anterior cruciate ligament, is located at the knee joint. It starts from the front of the tibial intercondylar bulge, and attaches to the medial surface of the lateral femoral condyle obliquely backward and upward, connecting the femur and tibia. The anterior cruciate ligament prevents the tibia from moving forward to the front of the femur. When the knee joint is fully bent, the anterior cruciate ligament stretches most tightly. When the ligament is stretched beyond the threshold, injury may occur. If the anterior cruciate ligament of the knee joint is injured, it will greatly affect the stability of the knee joint and may lead to the injury of meniscus and other structures.



Causes of injury

The risk of knee anterior cruciate ligament injury is significantly related to genes encoding disaccharide chain protein and collagen. In addition to genetic factors, the rapid change of direction or excessive torsion of tibia during exercise can easily lead to the injury of anterior cruciate ligament. Anterior cruciate ligament injury of the knee is more common among skiers, footballers, and basketball players.

My Genetic Result Details

Gene locus	Gene name	My genotype	Description
RS1107946	intergenic	CC	significantly helpful for acl protection
RS1126499	BGN	CT	helpful for acl protection
RS1570360	VEGFA	AG	not significantly helpful for acl protection
RS1800012	COL1A1	CC	not significantly helpful for acl protection
RS1800255	COL3A1	GG	significantly helpful for acl protection

Test details

Applicable situation

The knee anterior cruciate ligament injury risk item uses nine polymorphic loci on genes such as COL3A1, COL12A1 and BGN: rs1800255, rs1042103, rs970547, rs679620, and rs1570360.

Notification

1. The test is mainly based on the research of Caucasian, and other populations are only for reference.

2. The test may not cover all genes or loci that related to the risk of knee anterior cruciate ligament injury.

Scoring model

According to the frequency of the reference sample and the control sample carrying the corresponding genotype in the literature, the weight of each locus is divided. Finally, the item is scored according to the detected genotype and the weight of the locus itself. The average score of all users and the distribution of scores are obtained through the algorithm, and the user is divided into project results accordingly.

How to use the test results

Notification

1. The test only evaluates the possibility of your knee anterior cruciate ligament injury from the genetic level, and does not include other factors such as age, environment, external force impact and so on.

2. If you think you may have knee problems, please consult an authoritative health expert or clinician in time.

Study population

The basis of the test is mainly from the research of Caucasian.

Limit of detection

The test may not include all loci related to the risk of knee anterior cruciate ligament injury.

Achilles Tendon Injury Risk

If people have risk of Achilles tendon injury, they should warm up and pay attention to protecting the ankles when running or performing movements that require a bigger load on the Achilles tendon.

My Achilles Tendon Injury Risk

Slightly Low

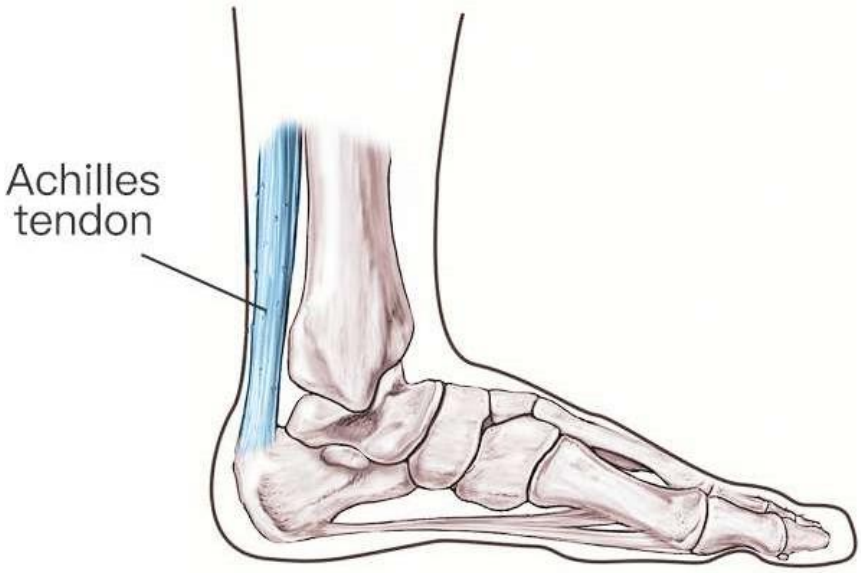
25.3% of DNAset users are similar to me

Knowledge

Physiological structure

Tendons are the connective tissue that connects muscles to bones. The main component of tendons is collagen.

The Achilles tendon is a tendon located on the back of the ankle bone, connecting the heel with the muscles on the back of the calf. The main function of the Achilles tendon is calf flexion and plantar flexion of the foot. The length of the Achilles tendon varies greatly from person to person. The mechanical properties of tendons depend on the diameter and direction of collagen fibers. Collagen fibers are parallel to each other and closely aligned with each other. The collagen fibers in the tendon have a certain degree of flexibility. In addition, since the tendon is a multi-linked structure composed of many independent fibers and bundles, rather than a rod-shaped structure, this property also contributes to its flexibility. When the Achilles tendon is pulled beyond the threshold, injury may occur. The injury of the Achilles tendon can lead to inflammation, and severely rupture, which seriously affects athletic ability. The risk of Achilles tendon injury is significantly associated with genes encoding metalloproteinase 3 and collagen.



Causes of injury

In addition to genetic factors, sports such as sprinting can also easily lead to d Achilles tendon injury. The maximum load on the Achilles tendon is about 3.9 times of the body weight when walking and 7.7 times of the body weight when running. Therefore, Achilles tendon injury is more common in sprinters and hurdlers.

My Genetic Result Details

Gene locus	Gene name	My genotype	Description
RS1045485	CASP8	GG	not significantly helpful for Achilles tendon protection
RS1143627	IL1B	GG	significantly helpful for Achilles tendon protection
RS16944	IL1B	AA	significantly helpful for Achilles tendon protection
RS1800795	intergenic	GG	not significantly helpful for Achilles tendon protection
RS2104772	TNC	AT	helpful for Achilles tendon protection

Test details

Applicable situation

The Achilles tendon injury risk item uses eigth polymorphic loci from genes like COL5A1, TNC and MMP3: rs16944, rs1045485, rs2104772, rs591058, and rs3834129.

Notification

1. The test is mainly based on the research of Caucasian, and other populations are only for reference.

2. The test may not cover all genes or loci that related to the risk of Achilles tendon injury.

Scoring model

According to the frequency of the reference sample and the control sample carrying the corresponding genotype in the literature, the weight of each locus is divided. Finally, the item is scored according to the detected genotype and the weight of the locus itself. The average score of all users and the distribution of scores are obtained through the algorithm, and the user is divided into project results accordingly.

How to use the test results

Notification

1. The test only evaluates the possibility of your Achilles tendon injury at the genetic level, and does not include the influence of other factors such as age, environment, external force impact, etc.

2. If you think you may have Achilles tendon problems, please consult an authoritative health expert or clinician in time.

Study population

The basis of the test is mainly from the research of Caucasian.

Limit of detection

The test may not include all loci related to the Achilles tendon injury risk.

Lumbar Disc Injury Risk

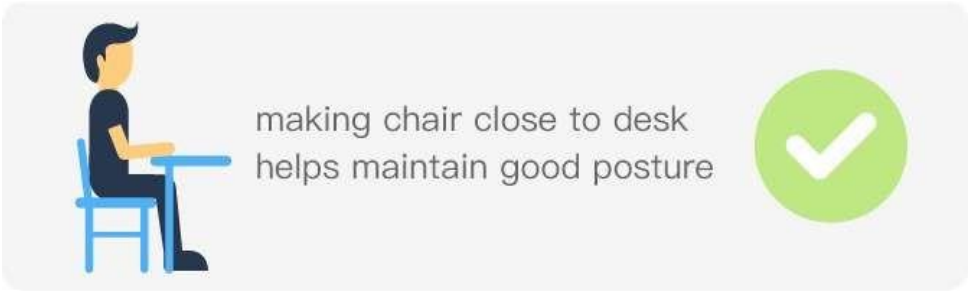
If lumbar disc is likely to develop injury, it is especially important to pay attention to controlling intensity during weightlifting and exercises that put a lot of stress on the waist.

My Lumbar Disc Injury Risk

Slightly Low

35.2% of DNAset users are similar to me

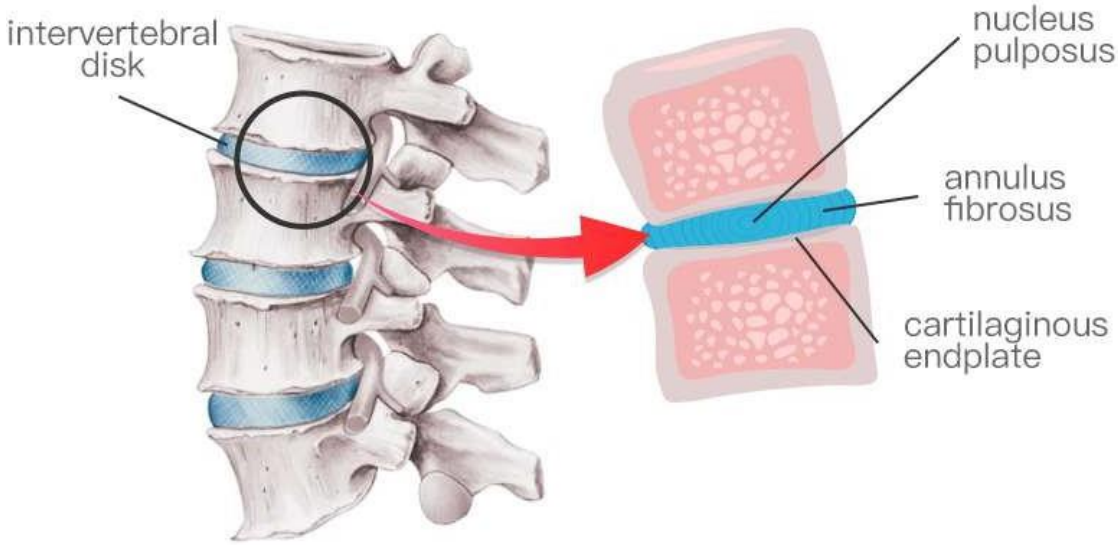
Postures that can reduce pressure on the lumbar spine



Knowledge

Physiological structure

Located between two vertebral bodies, the lumbar intervertebral disc is a structure with hydrodynamic characteristics. It is s composed of cartilage endplate, annulus fibrosus and nucleus pulposus. Nucleus pulposus is an elastic colloidal material, which can alleviate the impact. The annulus fibrosus is composed of multi-layer fibrous cartilage rings arranged in a ring, which surrounds the nucleus pulposus to prevent the nucleus pulposus from protruding outward. The annulus fibrosus connects the adjacent vertebral body so that it can move slightly. However, when the movement reaches a certain limit, the annulus fibrosus becomes tense, which plays the role of controlling the ligament and limiting the rotational movement; The cartilage end plate is located on the upper and lower sides of the intervertebral disc. It is composed of fibrocartilage, one on the upper and one on the lower side of the vertebral body. The cartilage endplate protects the vertebral bone, buffers the pressure, connects the vertebral body and the intervertebral disc, and plays the role of nutrient exchange for the intervertebral disc.



Causes of injury

Excessive lumbar load or lumbar movement can easily lead to the injury of lumbar intervertebral disc. When the lumbar intervertebral disc is seriously injuried, the nerves can be compressed and lead to limb numbness. Therefore, whether standing or sitting, you should keep the back with the tail vertebrae in a straight line as far as possible to avoid lumbar injury.

My Genetic Result Details

Gene locus	Gene name	My genotype	Description
RS1052576	CASP9	CT	helpful for lumbar disc protection
RS11549467	HIF1A	AG	increases lumbar disc protection
RS1800795	intergenic	GG	not significantly helpful for lumbar disc protection
RS1800896	intergenic	TT	significantly helpful for lumbar disc protection
RS2073711	CILP	AA	significantly helpful for lumbar disc protection

Test details

Applicable situation

The lumbar intervertebral disc injury risk item uses twelve polymorphic loci on genes such as COL9A3, VDR and MMP2: rs731236, rs763110, rs917997, rs151058, and rs2287037.

Notification

1. The test is mainly based on the research of Caucasian and Asian, and other populations are only for reference.

2. The test does not cover all genes or loci that related to the risk of lumbar intervertebral disc injury.

Scoring model

According to the frequency of the reference sample and the control sample carrying the corresponding genotype in the literature, the weight of each locus is divided. Finally, the item is scored according to the detected genotype and the weight of the locus itself. The average score of all users and the distribution of scores are obtained through the algorithm, and the user is divided into project results accordingly.

Notification

1. The test only evaluates the possibility of your lumbar intervertebral disc injury from the genetic level, and does not include other factors such as age, environment, external force impact and so on.

2. If you think you may have lumbar spine problems, please consult an authoritative health expert or clinician in time.

Study population

The basis of the test is mainly from the research of Caucasian and Asian.

Limit of detection

The test may not include all loci related to the risk of lumbar intervertebral disc injury.