wild health

Personalized Genetic Insights Report

Take charge of your health with tailored lifestyle interventions

EXCLUSIVELY PREPARED FOR:

TEST USER

How to read this report

The Alleles

A SNP (Single Nucleotide Polymorphism) is a small change in the genetic code where one base (A, T, C, or G) is swapped for another. These variations are the most common type of genetic difference between people. While most SNPs have no effect, some can influence how we look, how our bodies function, or our risk of certain diseases.

Imagine a gene as a tower made of LEGO blocks. Each block (nucleotide) has a specific place in the structure. A SNP would be like swapping out one specific LEGO block for a slightly different one. Most of the time, the tower still stands as intended, but occasionally, that one block could be crucial for the stability of the entire structure.

Common Allele

The common allele is considered the 'standard' or most common version of a genetic sequence in a population. It's the version that is most frequently observed in the natural population and often serves as a reference point when studying genetic variations and their impact on health.

Risk Allele

A risk allele is a variant of a gene that has been associated with an increased risk of developing a particular disease or health condition. Having a risk allele doesn't guarantee you'll develop the condition; it simply means your genetic makeup may make you more susceptible compared to someone without the allele.

2 Common Alleles

This indicates that you have inherited the common allele from both parents at a specific SNP, reflecting the most common genetic variation with no increased health risk identified.

1 Common & 1 Risk Allele

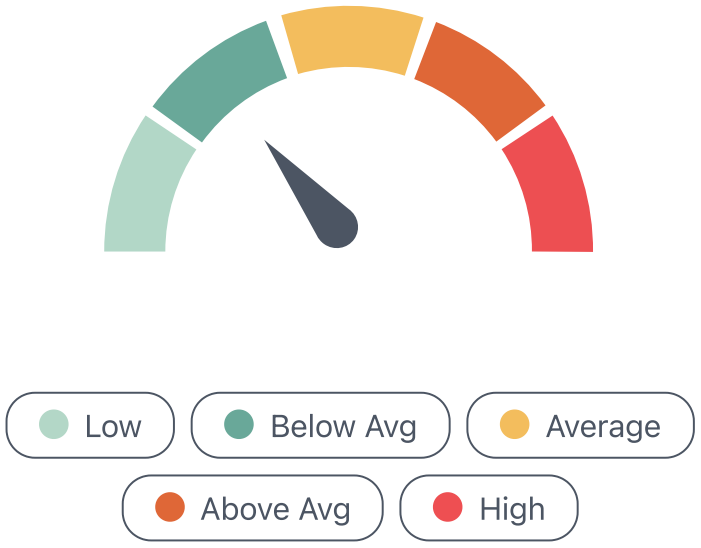
This indicates you've inherited one common allele and one risk allele for a specific gene. This mix means you may have a slight increase in risk for certain conditions compared to someone with two common alleles, but generally lower risk than someone with two risk alleles.

2 Risk Alleles

This symbol means you've inherited the risk allele from both parents at a particular SNP, which may increase your susceptibility to certain health-related traits or conditions according to current scientific understanding.

Polygenic Risk Scores

Polygenic Risk Scores calculate your risk for specific health conditions by analyzing multiple genetic variations together, rather than focusing on a single gene. Instead of saying 'this gene increases your risk by this much,' a polygenic risk score says, 'considering all the genetic variations we know are associated with this condition, here's your overall risk.' It's a more comprehensive look at your genetic predisposition to certain health conditions.



Why are Macronutrients Important

Macronutrients, including carbohydrates, proteins, and fats, are the cornerstone of nutrition, providing the energy and building blocks your body needs to function optimally. Understanding the balance and intake of these macronutrients is crucial for maintaining health, managing weight, and supporting metabolic processes.

Carbs

Carbohydrates serve as a moderate energy source, offering 4 calories per gram and influencing blood sugar levels and energy availability.

Protein

Proteins, the basic components of living cells, contribute to the formation of enzymes, structural support, transporters, and more, with a caloric value of 4 calories per gram.

Fats

Fats, providing 9 calories per gram, are essential for absorbing vitamins, supporting cell growth, and yielding a significant energy source.

Your Genetics and Macronutrients

Carbohydrate Tolerance

Below Average

The carbohydrate tolerance score analyzes specific genetic markers to determine how effectively your body processes carbohydrates, a critical element in managing weight, blood sugar levels, and overall energy.

Fat Tolerance

Normal

The fat tolerance score is made up of multiple polymorphisms and reveals how well your body processes fats, guiding you to adjust your diet and match your fat intake with your genetic makeup, promoting better wellness outcomes.

Saturated Fat Tolerance

Normal

The saturated fat tolerance score goes beyond general fat metabolism, focusing on how your specific genetic markers influence the processing of saturated fats—a key factor for heart health and dietary balance.

Ppar Alpha #1

Normal fatty acid oxidation, typical response to saturated fats.

Ppar Gamma #1

You may see some increase in obesity risk when consuming high-fat diets.

FTO

Moderate increase in obesity risk, slightly higher appetite.

ApoA2

Moderate sensitivity to saturated fats, with a slight increase in obesity risk when consuming high amounts.

ApoC3

Moderate impact on triglyceride metabolism, slightly elevated cardiovascular risk

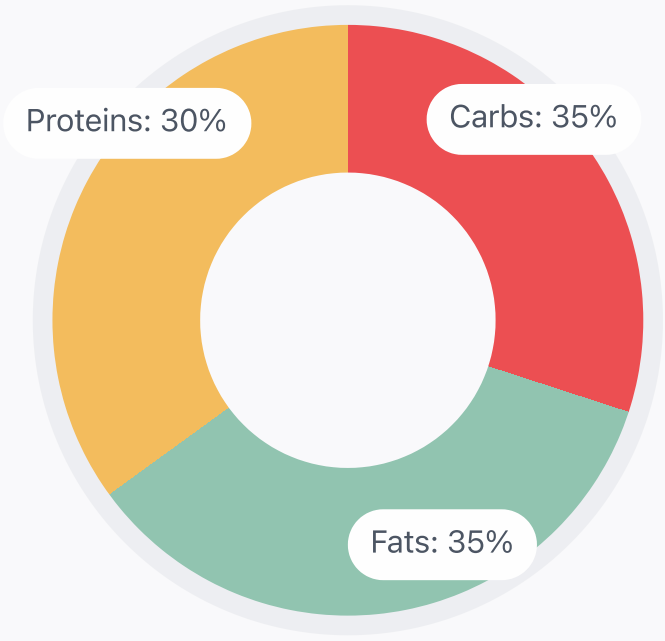
APOE

Your Recommended Macros

Macronutrient tracking can be extremely time intensive and overwhelming, but is essential to understand where your calories come from. Genetically, we are all different and may benefit from significant variations in our macronutrient profile.

To estimate your daily calories per gram of carbohydrate, fat, and protein use the following formula:

1gram Carbohydrate = 4 calories
1gram Protein = 4 calories
1gram of Fat= 9 calories



What You Can Do

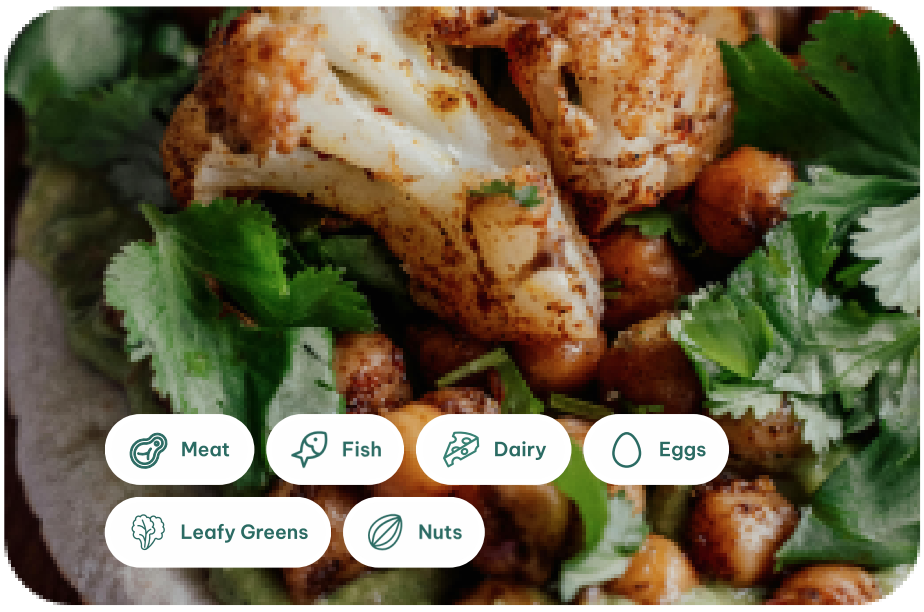
- Focus on unsaturated fats found in olive oil, avocados, and nuts, while limiting saturated and trans fats.
- Focus on a balanced diet, moderate in fats and high in fiber.
- Emphasize a balanced diet with a high proportion of fiber-rich vegetables, fruits, whole grains, and lean proteins to manage appetite and energy intake.
- Limit saturated fat intake by reducing consumption of fatty meats, full-fat dairy products, and processed foods. Focus on increasing intake of fruits, vegetables, whole grains, and lean proteins.
- You are genetically more tolerant to saturated fat. For this reason you may choose to eat higher levels of saturated fat in your diet. However, you are less likely to see reductions in cholesterol with reduction in your dietary saturated fat consumption.

What You Can Do

- You have a typical tolerance to carbohydrates. A balanced intake of complex carbohydrates is recommended. Avoid simple carbohydrates to maintain optimal health.
- You are genetically more tolerant to high fat diets. For this reason you are more likely to respond positivly to a high fat or ketogenic diet.

Meal Plan Recommendation

The HFLC diet emphasizes high intake of fats, moderate protein, and very low carbohydrates, aiming to induce a state of ketosis where the body burns fat for fuel instead of glucose. Foods include meats, fatty fish, eggs, butter, and low-carb vegetables, while minimizing sugar, grains, and starchy foods. It's popular for weight loss, improved insulin sensitivity, and managing neurological disorders.



Why is Methylation Important

Methylation, a key biochemical process, supports DNA repair, detoxification, and gene expression, crucial for cellular health and aging prevention. Micronutrients, vital vitamins and minerals, underpin these functions, ensuring overall well-being. Together, they are essential in disease prevention, health optimization, and longevity enhancement.

Your Genetics and Macronutrients

Folate Risk Score

Normal

Folate (Vitamin B9) and other B vitamins are involved in the methylation pathway, most specifically Folate, B12, and P-5- P. B vitamins are found in numerous quantities in green leafy vegetables.

Choline Risk Score

High

Choline is an essential nutrient important for multiple bodily functions including methylation, neurotransmitter development, fat packaging and excretion from the liver, and creatine production. Choline is found in greatest quantity in eggs, fish, dairy, meat, and to a lesser but notable amount in vegetables.

MTHFR #1
rs1801133

Moderate decrease in enzyme activity, slightly reduced folate metabolism and mildly elevated homocysteine.

MTHFR #2
rs1801131

Normal MTHFR enzyme function, effective folate metabolism.

PEMT

Reduced choline metabolism, increasing risk for liver dysfunction and possibly affecting memory.

FADS1

Moderate ALA to EPA/DHA conversion efficiency, with some impact on omega-3 levels and lipid balance.

FADS2

Moderate conversion of plant-based omega-3 (ALA) to EPA and DHA.

CYP1A2

Slow caffeine metabolism, increased sensitivity to caffeine, potentially affecting sleep and anxiety.

CYP2R1

Efficient vitamin D activation, supporting optimal bone and immune health.

ADORA2A

Moderate sensitivity to caffeine, with some risk of sleep disruption and increased anxiety

COL5A1

Potential for altered collagen synthesis, possibly impacting connective tissue health and injury recovery.

Your Superfoods

SMASH Fish

Sardines particularly ideal for you with their clean content of Omega 3's, collagen protein, and other key vitamins and nutrients.

Cruciferous Vegetables

Broccoli, cauliflower, brussell sprouts, and other crucifers will greatly benefit your specific genetic makeup.

Caffeine

Given your genetic profile, moderate caffeine consumption can positively impact your athletic performance and alertness. However, it's crucial to balance intake to match your body's unique metabolic response to caffeine.

Vitamin A Rich Foods

Your genetic makeup particularly benefits from Vitamin A-rich foods like sweet potatoes and carrots. These sources efficiently support vision, immune function, and skin health through optimal conversion of beta-carotene.

Antioxdiants

Foods high in antioxidants, such as berries and green tea, are especially beneficial for countering oxidative stress, as dictated by your genetics. Regular consumption can enhance your body's defense against chronic diseases and aging.

Collagen

Collagen-rich foods, including bone broth and salmon, align with your genetic predispositions to support skin, joint, and bone health. Incorporating these into your diet maximizes your genetic potential for maintaining structural integrity.

Choline Rich Foods

Eggs, liver, and broccoli are crucial for those with your genetic profile, providing essential choline that supports brain health and metabolism. Tailoring your diet to include these foods leverages your genetics for optimal health and function.

Kryptonite Foods

Wheat / Gluten

You're gluten sensitive. Avoid wheat, gluten, bread, crackers. It's not recommended to replace gluten containing foods with gluten free foods.

Sugar

Sugar is inflammatory and contributes to increased insulin resistance, accelerated aging, and poor body composition.

Vegetable Oils

Vegetable oils and processed foods are particularly deleterious to you and your DNA.

Caffeine

Caffeine affects you more than others and can impact sleep quality and anxiety levels. Moderation is key, as well as understanding your body's tolerance, to harness its benefits without adverse effects.

Processed Foods

Loaded with added sugars, unhealthy fats, and excessive salt, processed foods can contribute to obesity, heart disease, and insulin resistance. Limiting these foods supports a healthier diet and aligns with preventive health measures.

Lactose

You are likely to be lactose-intolerant as an adult and may experience digestive discomfort from dairy products. Opting for lactose-free alternatives can help maintain digestive comfort and nutrient intake.

What You Can Do

- Focus on folate-rich foods like leafy greens, legumes, and fortified grains. Consider B-vitamin supplementation to support methylation processes, particularly B12 and B6, alongside folate.
- Increase consumption of foods that contain high levels of choline which include eggs, fish, dairy, and green vegetables.
- Include more direct sources of EPA and DHA in your diet, such as fatty fish, or consider high-quality fish oil supplements.
- Moderate caffeine intake and consider limiting consumption to earlier in the day to avoid sleep disturbances.
- Limit caffeine intake, especially later in the day, to avoid disrupting sleep patterns.
- Focus on increasing intake of direct EPA and DHA sources (fatty fish, algae supplements) and ALA-rich foods (flaxseeds, chia seeds).
- Focus on a diet rich in vitamin C and amino acids, regular strength and low-impact exercises, and considering collagen supplementation can support optimal collagen synthesis and connective tissue health
- You are genetically highly sensitive to choline deficiency. Significantly increase your intake of choline-rich foods and consider regular supplementation to avoid deficiencies and support overall health.
- You are genetically more able to process and utilize Folate and Vitamin B12. A normal dietary vitamin B intake is recommended.

Why Exercise is Important

This Exercise & Recovery report encompasses various key aspects of a successful fitness program: Strength/Power, Endurance, Intensity, and Recovery. Engaging in regular exercise is a key component of maintaining good health and a high quality of life.Mobility and Work Capacity are also important when discussing overall fitness level.

Work Capacity

Work Capacity, while often-overlooked, determines your ability to sustain physical activity over time. It's vital for increasing endurance, strength, and overall fitness, but also beneficial for enhancing energy and stamina in daily activities and supporting longevity.

Mobility

Mobility is key for maintaining joint health, flexibility, and ability to efficiently perform movements in daily life or during exercise. Mobility plays a significant role in reducing your risk for injury and counters the effects of a sedentary lifestyle.

Your Genetics and Exercise

52.4%

Strength & Power

Balanced

Strength and Power training are crucial for building muscle and enhancing your ability to perform both everyday tasks and athletic activities.

50%

Endurance

Above Average

Endurance training, on the other hand, focuses on improving your cardiovascular health and stamina, which are essential for prolonged physical activities.

25%

Intensity

Low

Intensity, a critical factor in training, determines the effectiveness of your workouts and can be adjusted based on your fitness goals and health status.

48.1%

Recovery

Intermediate

Recovery is another highly important element, as it allows your body to heal and adapt to the stresses of exercise, prevent injury, and improve performance.

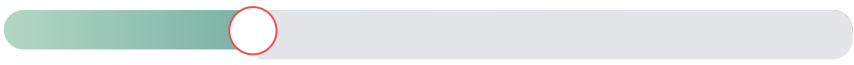
Pain Perception

Average

Low High

Muscle Injury

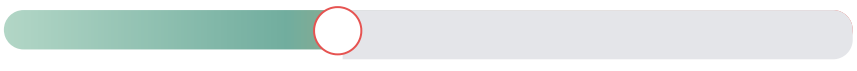
Average



Low Risk High Risk

Tendon / Ligament Injury

Average



Low Risk High Risk

Bone Injury

Very High

Low Risk High Risk

Important SNP's

COL5A1

Increased susceptibility to tendon and ligament injuries, potentially slower recovery from exercise.

SLC30A8

Standard muscle glucose uptake, typical recovery from exercise.

TNF

Slightly increased inflammation post-exercise, with a moderate impact on recovery.

ACTN3

More suited to endurance, possibly experiencing slower recovery from high-intensity, power-based workouts.

CRP

Normal CRP levels, standard inflammation and recovery.

MMP3

Standard risk of musculoskeletal injuries, typical recovery from physical activity.

NOS3

Reduced nitric oxide production, possibly affecting vascular function and delaying recovery.

What You Can Do

- Strengthen connective tissues through targeted exercises, such as resistance training and plyometrics. Incorporate collagen or gelatin supplementation and ensure sufficient vitamin C intake to support collagen synthesis and tissue repair.
- Incorporate foods with natural anti-inflammatory properties, like turmeric, ginger, fatty fish, and berries, into your diet. Regular, moderate-intensity exercise can also help modulate inflammation levels effectively.
- Customize your training program to leverage your genetic strengths; those with power advantages might focus on sprinting and lifting, while endurance-oriented individuals could emphasize longer, steady-state cardio. Mixed training regimes can benefit heterozygous individuals, combining elements of both endurance and strength training.
- Boost nitric oxide production through diet by consuming nitrate-rich foods like beets, spinach, and arugula. Cardiovascular exercises, such as running or cycling, can improve vascular health and enhance recovery by promoting blood circulation.
- Your recovery time is moderate at {{recovery}}%. Optimize training with 1-2 rest days weekly, especially after consecutive training days. For better recovery, try walking, yoga, or stretching, and address soreness with massage or foam rolling. Prioritize sleep and adequate protein and complex carbs. Consistent recovery boosts training efficiency.
- Your strength and power trainability score is average. Consider a moderate range of sets and repetitions. 3-5 sets of 6-8 repetitions of multi joint functional movements is a good starting point.
- Your endurance trainability score is above average. You may have a good response to improving VO2max and cardiovascular fitness with long duration low to medium intensity endurance exercise.
- Your tolerance for high intensity exercise is below average. Appropriate amounts of high intensity interval training will have benefits on fitness, metabolic health and body composition. Consider limiting high intensity sessions to under 2-3 times per week. Do not do high intensity sessions on consecutive training days.
- Based on your genetics, you have an average risk of experiencing pain and discomfort more intensely. Adopting mental frameworks and coaching strategies that motivate you to push past your comfort limits during exercise might prove advantageous. Monitoring your heart rate while engaging in physical activities offers a tangible way to gauge exertion. Observing your heart rate during high-intensity workouts can help you identify your body's response to varying stress levels. It's also beneficial to track HRV and resting heart rate trends to monitor training stress effectively.
- Your genetics predict an average risk for muscle injury after exercise. Muscle injury is a spectrum from minor soreness after a workout to exertional rhabdomyolysis, a serious consequence of muscle injury that can require hospitalization. Delayed onset muscle soreness (DOMS) is intense muscle soreness that occurs 12-24 hours after a workout and peaks at 5-7 days. With training you may be able to tolerate higher volume training sessions with eccentric loading to build strength as well as lower risk of muscle injury or delayed soreness.

What You Can Do

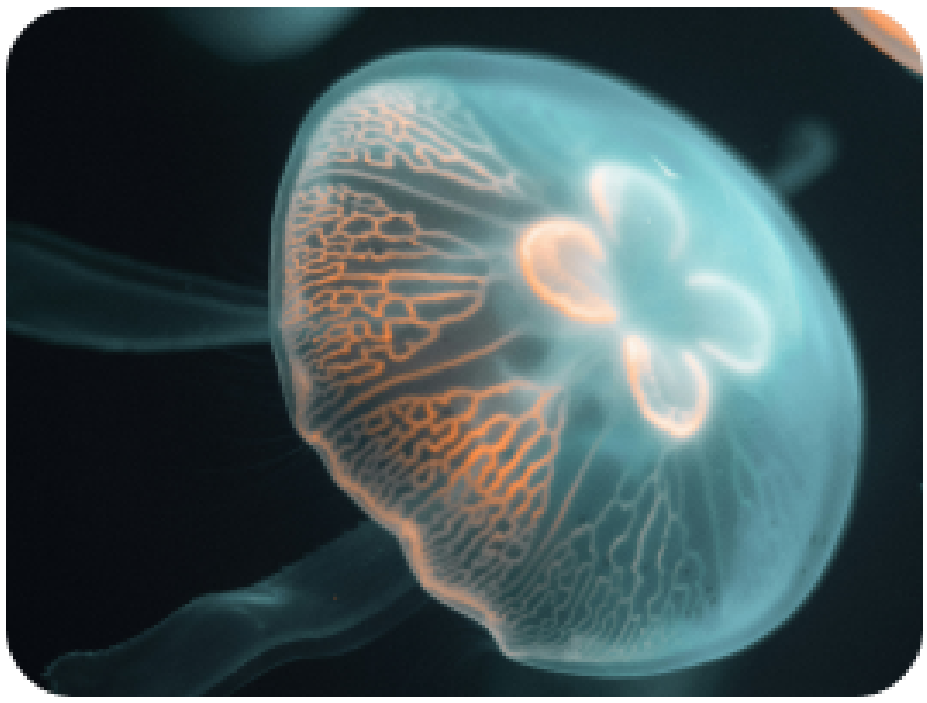
- Your genetics predict an average risk for risk for tendon and ligament injury. Tendon and ligament injuries can be acute or chronic. Acute injuries include ACL or achilles tendon tear, whereas chronic injuries involve overuse and are termed tendinopathy. A pre-injury program along with periodized training program can help to prevent injuries.

- Your genetics indicate a higher risk for stress fractures, which result from excessive load on bones over time. To prevent injuries, adopt a periodized training program with gradual volume increases and strategic de-loading. Avoid steroids, smoking, or heavy alcohol use that could reduce bone density. Ensure optimal Vitamin D and homocysteine levels, and maintain adequate calcium intake through diet or supplements. Discuss additional supplements with your physician.

- Your recovery time is moderate at 48.076923076923076923076923077%. Optimize training with 1-2 rest days weekly, especially after consecutive training days. For better recovery, try walking, yoga, or stretching, and address soreness with massage or foam rolling. Prioritize sleep and adequate protein and complex carbs. Consistent recovery boosts training efficiency.

Why Neurobehavioral Health is Important

Neurobehavioral health encompasses the interplay between your brain function, behavior, and emotions. Mindfulness, a practice of focused awareness and presence in the moment, can significantly impact this aspect of health. It can lead to better stress management, improved mental clarity, enhanced emotional stability, and overall better mental health.



The Warrior

Individuals with the 'Warrior' variant of the COMT gene have lower dopamine levels in the prefrontal cortex, making them more resilient to stress. This genetic trait enhances their ability to make decisions under pressure, offering an advantage in high-stress environments.

The Worrier

Those with the 'Worrier' variant possess higher dopamine levels in the prefrontal cortex, heightening their sensitivity to stress but potentially improving memory and attention to detail. This genetic predisposition may enhance cognitive abilities in calm situations but increase anxiety under stress.

Combination

Individuals with a heterozygous COMT gene have balanced dopamine levels, providing a mix of stress resilience and cognitive depth. This genotype allows for adaptability, blending decision-making under pressure with enhanced memory and attention in calmer scenarios.

Your Genetics and Neurobehavioral Health

BDNF

Normal BDNF function supports neuronal growth and cognitive functions, potentially lower risk for mood disorders.

COMT

Higher COMT enzyme activity for faster dopamine degradation, associated with better stress resilience but potentially lower pain threshold.

OXTR

Linked to lower oxytocin levels, resulting in decreased empathy, generosity, and social reciprocity, especially in romantic relationships and social support situations.

ADH2

Rapid alcohol metabolism, reducing the risk of alcohol dependence but potentially increasing the risk of higher alcohol consumption.

ANKK1

Normal dopamine receptor density, potentially better reward system functioning and lower risk for addictive behaviors.

MAOA

Higher MAOA activity can lead to rapid neurotransmitter degradation, influencing mood regulation and aggression control.

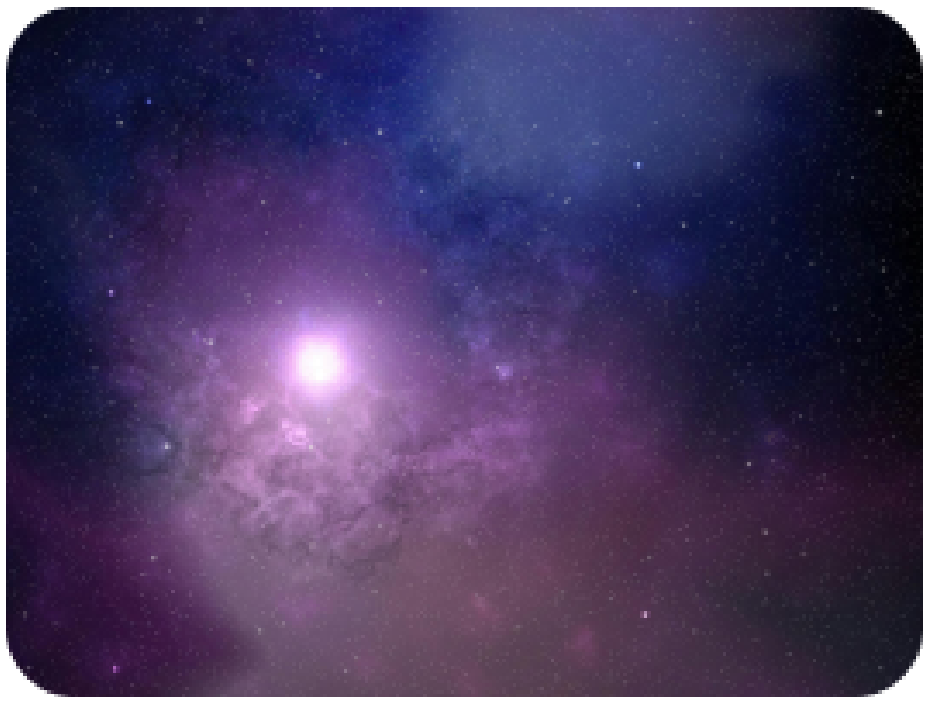
What You Can Do

- For enhancing social behavior and empathy, engaging in activities that promote social bonding and understanding, such as team sports, group therapy, or social skills training, may be beneficial. Mindfulness and empathy training can also support individuals in developing more empathetic and generous behaviors.
- Moderate alcohol intake and be aware of its effects on mood and behavior, considering the genetic predisposition to alcohol metabolism.
- Focus on a balanced diet that supports neurotransmitter production (rich in omega-3, vitamins B6 and B12), and practice regular stress management to aid emotional and behavioral regulation.

Why is Sleep Important

Sleep is a foundational pillar of health, affecting everything from cognitive function and emotional well-being to physical health and disease risk. Quality sleep can enhance memory, improve immunity, regulate mood, and lower the risk of chronic diseases.

A chronotype is an individual's inherent biological inclination regarding their daily sleep-wake patterns and rhythms. It's a concept that highlights when people are naturally most alert and when they naturally feel inclined to sleep.



Chronotypes

Robin

Robins rise with the sun and feel most energetic in the early hours of the day.

Hawk

Hawks get their energy spike a bit after the early birds and hit their stride late in the morning.

Hummingbird

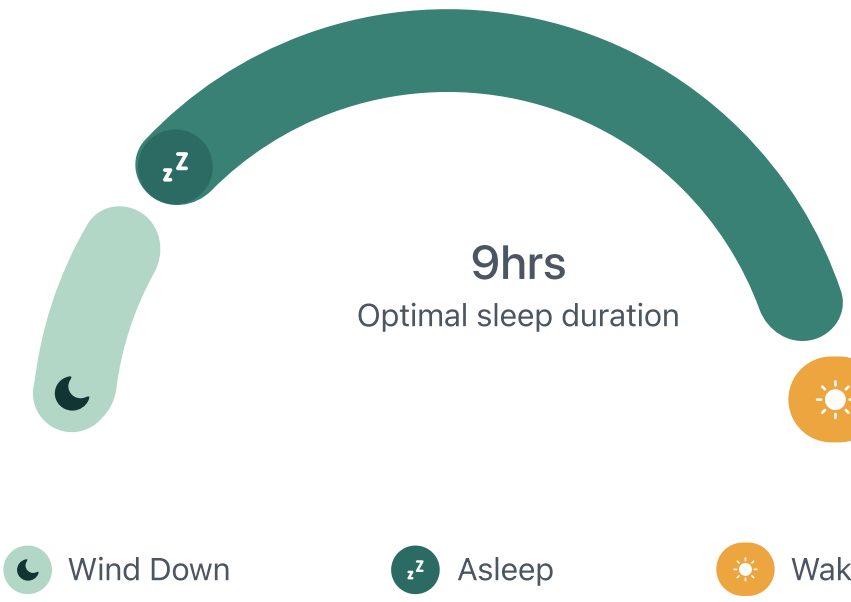
Hummingbirds find their peak productivity window around the middle of the day.

Eagle

Eagles have their peak energy levels and focus during the afternoon.

Owl

Owls are most alive and vibrant during the evening and into the night.



Your Genetics and Sleep

Your Type:

Robin "The Early Bird"

Robins rise with the sun and feel most energetic in the early hours of the day. They tend to be most productive in the morning and may find their energy waning after lunch. Robins often prefer to go to bed early to recharge for the next day.

Ease of Waking

Effortless Rise | Reluctant Awakening

Quality of Sleep

Deep Sleeper | Restless Sleep

Snoring

Breathes Easily | Heavy Snoring

Sleep Disruption / Fragmentation

Continuous Sleep | Interrupted Rest

Caffeine Induced Insomnia

Caffeine Tolerate | Caffeine Sensitive

Insomnia

Sleeps Peacefully | Challenge to Sleep

Latency

Quick to Sleep | Delayed Slumber

Daytime Sleepiness

Energetic Days | Daytime Lethargy

Important SNP's

What You Can Do

{#SLEEP_RECOMMENDATION#}

Celiac Disease and Gluten Sensitivity

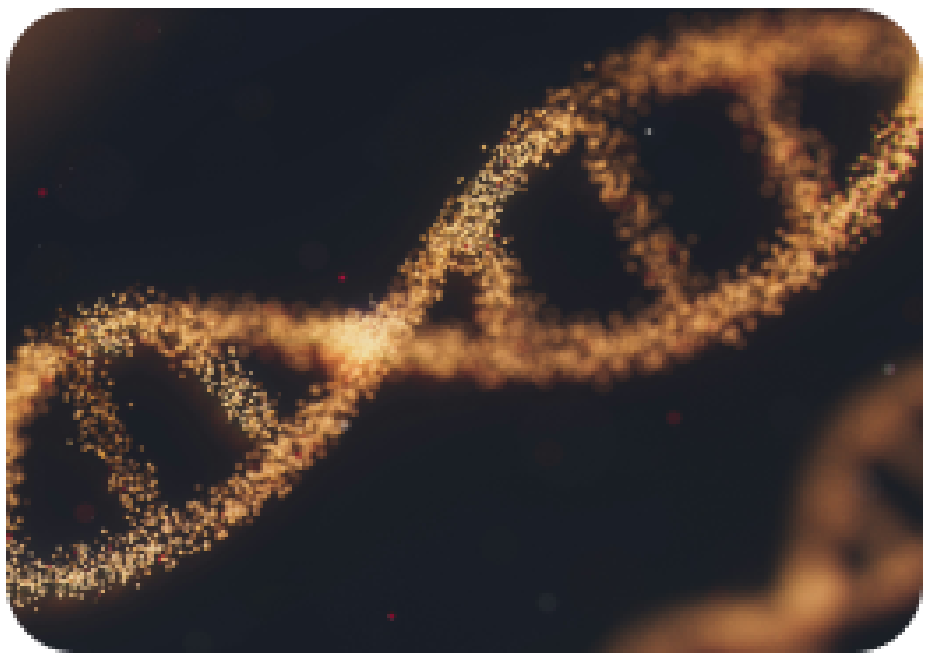
Celiac disease is a genetically inherited autoimmune disease whereby the ingestion of gluten results in an immune response that attacks and damages the small intestine. As a result of damage to the small intestine, the villi – small, finger-like projections that line the organ and aid in nutrient absorption – cannot properly absorb nutrients into the body.

Celiac Disease

Celiac disease may be associated with any of the following symptoms: bloating and gas; chronic diarrhea or constipation; lactose intolerance; loose, greasy, bulky, or odorous stools; nausea and vomiting; abdominal pain; join paint; headaches; fatigue; mouth sores; skin rash (dermatitis herpetiformis); nerve damage; depression or anxiety.

Gluten Sensitivity

Gluten sensitivity is a less severe response to dietary gluten that leads to gastrointestinal, cognitive, skin, or systemic symptoms associated with ingestion of gluten. Gluten sensitivity is not associated with a severe immune response like Celiac Disease, but can still lead to similar symptoms and improve with avoiding dietary gluten.



Causality + Diagnosis

Celiac disease is hereditary. People with a first-degree relative who has Celiac disease (parent, child, sibling) have a 1-in-10 chance of developing the condition themselves. That said, it is possible to develop Celiac disease at any age. Without the three genetic combinations for the disease, there is a <1% chance of having Celiac, but you may still have a gluten sensitivity. Genetic testing evaluates the risk of sensitivity to gluten, independent of having Celiac disease. To diagnose Celiac disease, other factors, including medical and family history, bloodwork, and/or small intestinal biopsies may be required.

Your Genetics

Celiac Disease

Not Available

You have a Not Available risk of having or developing Celiac disease

Gluten Sensitivity

High

You have a 70% risk of being Gluten sensitive.

Haplotypes

A haplotype is a set of genes on a chromosome that are inherited together from one parent, passing on as a group because they're close to each other. Haplotypes help scientists study how traits or diseases are passed through families. Unlike SNPs, which are single points of variation in the DNA, haplotypes represent a combination of multiple genetic variations that travel together.

Imagine your DNA is a long train made up of different cars, each car representing a specific gene. A haplotype is like a sequence of connected cars that always travel together down the tracks.

HLA-DQ2.2	Not Present
HLA-DQ2.5	Not Present
HLA-DQ8	Not Present

* Celiac Disease genetics can only rule out disease. We test for the presence of three gene combinations. If you do not have any of these three combinations, you have <1% likelihood of Celiac Disease. Gluten genetics evaluate the risk of sensitivity to gluten independent of Celiac Disease status. You can have gluten sensitivity without Celiac Disease. Genetics alone cannot diagnose Celiac Disease. Please discuss with a doctor.

What You Can Do

- You have a high risk of being gluten sensitive. Consider eliminating dietary gluten, especially if you experience symptoms such as brian fog, bloating, or diarrhea.

Why Cardiovascular Disease Risk is Important

Cardiovascular disease is the leading cause of death worldwide, accounting for 30-40% of all deaths, with significant impacts including heart disease, stroke, dementia, and vascular diseases. The primary causes of CVD include inflammation, endothelial dysfunction, cholesterol levels, and lifestyle factors over time.

Your Genetics and Cardiovascular Disease Risk

Cardiovascular Disease Risk

Advanced

GJB6

Less likely to see large triglyceride reductions from fish oil supplementation. However, there are many other benefits to fish oil supplementation.

HSP70

Normal function of heat shock proteins, standard stress response, and cardiovascular protection.

APOA5

Moderate sensitivity to dietary fats and their impact on cardiovascular risk.

ADD1

Standard risk of hypertension, indicating normal sodium handling and blood pressure regulation.

SLC45A

ACE

Normal metabolic response to saturated fats, standard cardiovascular risk.

NOS3

Slightly reduced nitric oxide production, intermediate impact on vascular health.

F2

Likely standard coagulation function, typical cardiovascular risk associated with blood clotting.

F5

Standard risk of thrombosis, normal cardiovascular risk.

What You Can Do

- Focus on a balanced diet low in saturated fats and high in fruits, vegetables, and whole grains.
- Consume nitrate-rich vegetables (e.g., beets, spinach) and engage in regular exercise to support endothelial function and nitric oxide production.
- Emphasize fiber-rich, whole foods while limiting saturated fat intake. Incorporate an exercise routine involving a mix of endurance training and resistance training. Prioritize stress management practices and stay up to date with routine health screenings. Consult with your doctor about potential supplementation to benefit cardiovascular health.

Why Inflammation is Important

Inflammation, in its acute form, is a beneficial response to tissue damage, infection, or noxious stimuli, playing a critical role in repair and adaptation. However, when inflammation becomes chronic, it can lead to tissue degeneration, remodeling, and is a common pathway in many chronic disease states such as cardiovascular disease (CVD), diabetes (DM), osteoarthritis, depression, cancer, chronic obstructive pulmonary disease (COPD), and Alzheimer's disease (AD). Managing inflammation is crucial for preventing these conditions and promoting overall health.

rs1800629 : TNF-Alpha Gene

The rs1800629 SNP, situated in the TNF-alpha gene, acts as a genetic regulator for inflammation in your body. Having a certain variant of this SNP could mean your body is more prone to kickstarting inflammation, which plays a central role in many health conditions, from arthritis to heart disease.

Your Genetics and Inflammation

GSTP1

Normal GSTP1 enzyme activity, facilitating effective detoxification processes and antioxidant defense, potentially leading to lower inflammation levels.

SOD2

Reduced SOD2 activity, leading to increased oxidative stress and potentially higher inflammation levels.

FADS1

Moderate conversion rate of ALA to EPA and DHA, slightly less optimal omega-3 levels for combating inflammation.

TNF

Normal TNF-alpha production, standard inflammatory response.

IL-6

Moderately increased IL-6 levels, intermediate risk of chronic inflammation.

CRP

Normal C-reactive protein (CRP) levels, typical risk for inflammation.

What You Can Do

- Increase antioxidants in your diet with fruits like berries, vegetables like spinach, and nuts to combat oxidative stress and support inflammation reduction.
- Focus on direct sources of EPA and DHA (fatty fish, algae supplements) to ensure adequate anti-inflammatory omega-3 fatty acids in your diet.
- Incorporate anti-inflammatory foods like olive oil, tomatoes, and nuts, along with stress-reducing practices like yoga or meditation, to manage inflammation levels.

Why Longevity is Important

Longevity combines lifespan and healthspan, focusing not just on the years of life but the quality of those years. It's about living a longer, healthier life, free from chronic diseases and disabilities associated with aging. With advances in genetics and biotechnology, understanding how to optimize longevity based on individual genetic profiles has become increasingly possible and important.

rs2802292 : FOX3 Gene

The rs2802292 SNP, located in the FOXO3 gene, is a key genetic marker associated with longevity. This variant is believed to enhance the body's ability to resist oxidative stress and regulate metabolism, mechanisms crucial for aging well.

Your Genetics and Longevity

GSTM1

Normal levels of glutathione, supporting effective detoxification and antioxidative processes in the body.

ADIPOQ

Standard risk for colon cancer and breast cancer

TNF

Standard inflammatory response, typical risk for inflammation-related aging processes.

JAK2

Standard risk for blood cancers compared to the general population.

FOXO3

Likely normal FOXO3 activity, with standard healthspan and resistance to aging-related diseases.

NPAS2

You have increased cancer risk associated with alterations in circadian rhythm. Don't eat when it's dark. Fast for at least 12 hours every night.

PGC1a

Reduced mitochondrial density, leading to a lower resting metabolic rate and decreased cardiorespiratory fitness, potentially impacting longevity.

APOE

What You Can Do

- Don't eat when it's dark. Fast for at least 12 hours every night.
- Prioritize lifestyle habits that activate the FOXO3 pathway, including a diet rich in fruits, vegetables, and omega-3 fatty acids, regular physical activity, and stress reduction techniques.
- Regular exercise, especially endurance training, and a diet high in polyphenols from fruits and vegetables, along with caloric restriction, can boost PGC-1α transcription. Use cold exposure techniques to activate brown fat and enhance mitochondrial biogenesis.

Why Insulin Resistance Risk is Important

Insulin resistance (IR) is a prevalent condition affecting up to one-third of the US population and over 50% of adults over 60, leading to metabolic syndrome and diabetes. It arises when cells in muscles, fat, and the liver don't respond well to insulin and can't easily take up glucose from the blood, requiring the pancreas to produce more insulin. Over time, this can lead to serious health issues, including type 2 diabetes (T2D).

rs9939609 : FTO Gene

The rs9939609 SNP, located in the FTO gene, plays a crucial role in body fat regulation and has a significant impact on an individual's susceptibility to insulin resistance. This genetic variation can lead to a predisposition for weight gain, which is a known risk factor for developing insulin resistance.

Your Genetics and Insulin Resistance Risk

IRS1

Likely normal insulin sensitivity, lower risk of developing insulin resistance.

PGC1a

Slightly increased risk of insulin resistance, less than homozygous risk.

ADRB3

Standard beta-3 adrenergic receptor function, normal influence on energy metabolism.

UPC1

Moderate thermogenic function, slightly elevated risk of insulin resistance.

FTO
rs9939609

Moderate increase in the risk of developing obesity and insulin resistance due to variations affecting appetite and satiety signals.

FTO
rs8050136

Slightly elevated risk of insulin resistance and obesity, indicating the importance of lifestyle factors.

FTO
rs1121980

Intermediate risk for increased body fat and insulin resistance.

FTO
rs17817449

Moderate increase in the risk of obesity and insulin resistance

What You Can Do

- Focus on a balanced diet rich in omega-3 fatty acids and regular physical activity to enhance insulin sensitivity.
- Maintain a diet high in antioxidants and engage in consistent physical activity to optimize energy metabolism and support insulin sensitivity.
- Adopt a balanced diet focusing on portion control and nutrient density, and increase physical activity to manage body weight and improve insulin sensitivity.
- Emphasize a high-fiber diet, reduce intake of refined carbohydrates and sugars, and maintain regular physical activity to support metabolic health.
- Focus on a Mediterranean-style diet rich in vegetables, fruits, whole grains, and healthy fats, alongside consistent exercise, to enhance insulin sensitivity and prevent weight gain.
- Implement lifestyle interventions such as a diet low in processed foods and high in dietary fiber, along with regular physical activity, to mitigate the risk of insulin resistance and support overall metabolic health.

Why Dementia Risk is Important

Dementia, including Alzheimer's Disease (AD), poses a significant public health challenge, being the 6th leading cause of death with a profound impact on life expectancy and quality of life after diagnosis. Genetic predispositions, particularly within the APOE gene, markedly influence one's risk of developing AD. The APOE ε4 allele, for example, significantly increases one's risk, highlighting the importance of understanding genetic risks and implementing lifestyle changes to mitigate these risk.

Your Genetics and Dementia Risk

APOE Score

Not Available - 0% Risk

Dementia Risk

N/A

This risk score is based on 65 different genes and represents your overall risk for various forms of dementia such as Alzheimer's and Lewy Body.

Frontotemporal Dementia

Frontotemporal dementia (FTD) is a degenerative brain disorder affecting the frontal and temporal lobes, altering behavior, language, and personality. It's linked to genetic mutations in CHMP2B, CYLD, GRN, MAPT, and VCP, which disrupt cell function and protein handling, contributing to FTD's onset.

CHMP2B	Not Present	CYLD	Not Present
GRN	Not Present	MAPT	Not Present
VCP	Not Present		

Klotho

While the Klotho gene overall plays a protective role against cognitive decline, specific variations or mutations within this gene can impact its protective effects. Some SNPs may lead to decreased levels of Klotho protein or affect its function, potentially contributing to an increased risk of developing dementia, including Alzheimer's disease.

Recommendation

Talk with your doctor

TOMM40

The TOMM40 gene is involved in the process that helps transport proteins across mitochondrial membranes, crucial for cellular energy production and health. Variations in the TOMM40 gene have been linked to an increased risk of developing Alzheimer's disease. These genetic variations can influence the age of onset and the progression of the disease.

Recommendation

Talk with your doctor

APP

The APP gene is directly linked to the development of early-onset Alzheimer's disease. It produces a protein that, when abnormally processed, leads to the formation of amyloid beta plaques, a hallmark of Alzheimer's. Certain mutations in the APP ene can increase the risk of early-onset Alzheimer's.

Recommendation

Talk with your doctor

FTD

There are a handful of genes associated with Frontotemporal Dementia including CHMP2B, CYLD, GRN, MAPT, and VCP.

Recommendation

Talk with your doctor

PSEN1

Mutations in the PSEN1 gene significantly increase the risk of early-onset Alzheimer's disease by affecting the processing of amyloid precursor protein, leading to the accumulation of amyloid plaques in the brain.

Recommendation

Talk with your doctor

PSEN2

The PSEN2 gene plays a crucial role in the development of early-onset Alzheimer's disease. It is involved in the processing of amyloid precursor protein (APP). Mutations in PSEN2 can lead to abnormal cleavage of APP, resulting in the accumulation of amyloid-beta plaques. While less common than PSEN1 mutations, variations in PSEN2 still significantly contribute to the genetic risk and pathogenesis of early-onset Alzheimer's, affecting the disease's onset, progression, and severity.

Recommendation

Talk with your doctor

* A negative result on this report does not necessarily mean you do not have an increased risk for Dementia. It does not mean you will not develop dementia. It may be due to limitations in the current state of genetic research. There may be a variant that has not yet been identified by current researchers, but will be at some point in the future. Additional research could increase or decrease your risk scores depending upon the effect of the new variants identified.

What You Can Do

- **Prioritize Sleep:**Aim for 7-9 hours of quality sleep per night. Utilize sleep hygiene practices such as maintaining a consistent sleep schedule, optimizing the sleep environment for darkness and coolness, and minimizing screen time before bed.
- **Nutrition for the Brain:**Adopt a diet rich in whole foods, focusing on vegetables, fruits, whole grains, lean protein, and healthy fats. Specifically, foods high in omega-3 fatty acids (e.g., SMASH fish) and antioxidants are beneficial for brain health. Limit processed foods, sugar, and saturated fats.
- **Regular Physical Activity:**Engage in both aerobic and strength-training exercises regularly. Aim for at least 150 minutes of moderate-intensity aerobic activity or 75 minutes of vigorous activity weekly, along with muscle-strengthening activities on two or more days a week. Consider activities like walking, swimming, cycling, and resistance training.
- **Mindful Practices:**Incorporate stress-reducing practices such as mindfulness, meditation, or yoga into your routine. Reducing stress levels is key to preventing cognitive decline.
- **Intellectual Engagement:**Keep your brain active with intellectually stimulating activities such as reading, puzzles, learning a new skill or language, or engaging in hobbies that challenge your thinking and creativity.
- **Social Connections:**Maintain strong social ties through regular interaction with friends and family, participating in community groups, or volunteering. Social engagement has been shown to improve cognitive function and reduce the risk of dementia.
- **Regular Health Check-Ups:**Regularly monitor and manage chronic health conditions like diabetes, hypertension, and high cholesterol with the help of healthcare professionals. These conditions, if not well-managed, can increase the risk of cognitive decline.
- **Avoid Tobacco and Limit Alcohol Consumption:**Smoking and excessive alcohol consumption are linked to an increased risk of dementia. Avoid smoking and limit alcohol intake.
- **Detoxification Practices:**Consider practices like sauna use to support the body's natural detoxification processes, potentially lowering the risk of neurodegenerative diseases.

References

PMID: 25189118-Late-Onset Alzheimer Risk Variants in Memory Decline, Incident Mild Cognitive Impairment and Alzheimer Disease

PMID: 24162737-Meta-analysis of 74,046 individuals identifies 11 new susceptibility loci for Alzheimer's disease

PMID: 35606148-Association of APOE-Independent Alzheimer Disease Polygenic Risk Score With Brain Amyloid Deposition in Asymptomatic Older

PMID: 26680604-Polygenic Analysis of Late-Onset Alzheimer's Disease

PMID: 33532541 - Polygenic risk scores for Alzheimer's disease are related to dementia risk in APOE ε4 negatives

PMID: 28727176-Polygenic risk score analysis of pathologically confirmed Alzheimer disease

PMID: 21390209-Meta-Analysis for Genome-Wide Association Study Identifies Multiple Variants at the BIN1 Locus Associated with Late-Onset Alzheimer's Disease

SNP Glossary

rs3856806	rs3856806	T C	rs2287019	rs2287019	T C
rs7903146	rs7903146	T C	rs2419621	rs2419621	C C
rs4646994	rs4646994	X X	rs1799883	rs1799883	T T
rs9939609	rs9939609	A T	rs8050136	rs8050136	A C
rs1121980	rs1121980	A G	rs17817449	rs17817449	T G
rs2025804	rs2025804	A A	rs135549	rs135549	C C
rs4253778	rs4253778	G G	rs5082	rs5082	A G
rs328	rs328	C C	rs7946	rs7946	T T
rs174548	rs174548	G C	rs236225	rs236225	X X
rs1801131	rs1801131	T T	rs1801133	rs1801133	A G
rs1801394	rs1801394	A G	rs7703033	rs7703033	A G
rs1805087	rs1805087	A A	rs1042778	rs1042778	- -
rs1043618	rs1043618	G G	rs1056806	rs1056806	C C
rs112803755	rs112803755	A A	rs1205	rs1205	C C
rs1229984	rs1229984	C C	rs12340895	rs12340895	C C
rs12722	rs12722	T T	rs13266634	rs13266634	C C
rs1440581	rs1440581	T C	rs1535	rs1535	A G
rs1695	rs1695	A A	rs174546	rs174546	T C
rs1799963	rs1799963	G G	rs1799964	rs1799964	T C
rs1799983	rs1799983	T G	rs1800497	rs1800497	G G
rs1800592	rs1800592	T C	rs1800629	rs1800629	G G
rs1800795	rs1800795	G C	rs1815739	rs1815739	T T
rs2060793	rs2060793	A A	rs2070744	rs2070744	T T
rs2275950	rs2275950	T C	rs2305160	rs2305160	G G
rs266729	rs266729	C C	rs2802292	rs2802292	T T
rs2943641	rs2943641	T T	rs3184504	rs3184504	C C
rs4343	rs4343	G G	rs4680	rs4680	G G
rs4880	rs4880	G G	rs4961	rs4961	G G
rs4994	rs4994	A A	rs5128	rs5128	G C

rs5751876	rs5751876	T C	rs6025	rs6025	C C
rs6265	rs6265	C C	rs662799	rs662799	A G
rs679620	rs679620	T T	rs699	rs699	A G
rs7041	rs7041	A C	rs762551	rs762551	A A
rs8192678	rs8192678	T C	rs7571842	rs7571842	A G
rs1800206	rs1800206	C C	rs1801282	rs1801282	C G
rs6323	rs6323	T T	rs2010963	rs2010963	G G
rs1042713	rs1042713	A A	rs1042714	rs1042714	- -
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rs12594956	rs12594956	A C	rs16892496	rs16892496	A A
rs1799722	rs1799722	T C	rs7566605	rs7566605	G G
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rs2070739	rs2070739	C C	rs4630	rs4630	X X
rs2228570	rs2228570	A A	rs6454672	rs6454672	X X
rs12405556	rs12405556	G G	rs8036270	rs8036270	A G
rs1544410	rs1544410	C C	rs1049305	rs1049305	X X
rs10497520	rs10497520	C C	rs11549465	rs11549465	C C
rs7324557	rs7324557	G G	rs7386139	rs7386139	A A
rs1800012	rs1800012	A C	rs28497577	rs28497577	G G
rs3213221	rs3213221	G G	rs143383	rs143383	G G
rs1570360	rs1570360	G G	rs17602729	rs17602729	A G
rs1800255	rs1800255	G G	rs680	rs680	- -
rs1021188	rs1021188	T T	rs10735810	rs10735810	X X
rs11629171	rs11629171	T C	rs1718119	rs1718119	G G
rs1801197	rs1801197	A G	rs1877632	rs1877632	A G
rs2230912	rs2230912	A A	rs2234693	rs2234693	T C
rs2586488	rs2586488	A G	rs28360447	rs28360447	G G
rs28360457	rs28360457	G G	rs3018362	rs3018362	A A
rs35933842	rs35933842	G G	rs3736228	rs3736228	C C

rs3751143	rs3751143	A C	rs3801387	rs3801387	A G
rs406226	rs406226	A G	rs4355801	rs4355801	A A
rs4988321	rs4988321	G G	rs731236	rs731236	A A
rs7958311	rs7958311	G G	rs7958316	rs7958316	G G
rs7975232	rs7975232	C C	rs9340799	rs9340799	A G
rs9594738	rs9594738	T T	rs6269	rs6269	G G
rs4633	rs4633	C C	rs4818	rs4818	- -
rs165599	rs165599	A G	rs2816316	rs2816316	A A
rs917997	rs917997	T C	rs6441961	rs6441961	T C
rs1738074	rs1738074	C C	rs1464510	rs1464510	C C
rs653178	rs653178	T T	rs9851967	rs9851967	T T
rs1559810	rs1559810	C C	rs17810546	rs17810546	A A
rs13151961	rs13151961	A A	rs13119723	rs13119723	A A
rs9811792	rs9811792	T T	rs7684187	rs7684187	A G
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rs2187668	rs2187668	C C	rs7454108	rs7454108	T T
rs7775228	rs7775228	T C	rs2395182	rs2395182	T G
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rs11206510	rs11206510	T T	rs1122608	rs1122608	G G
rs11556924	rs11556924	T C	rs12190287	rs12190287	X X
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rs17465637	rs17465637	A C	rs17609940	rs17609940	G G
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rs2895811	rs2895811	T T	rs3798220	rs3798220	T C
rs3825807	rs3825807	A A	rs46822	rs46822	X X
rs4773144	rs4773144	A G	rs4977574	rs4977574	A G
rs646776	rs646776	T C	rs6725887	rs6725887	T T
rs9349379	rs9349379	A A	rs9411489	rs9411489	X X

rs964184	rs964184	G C	rs9818870	rs9818870	C C
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