MaxGen LABS

SANCTUM WELLNESS

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MGPTID#: C280

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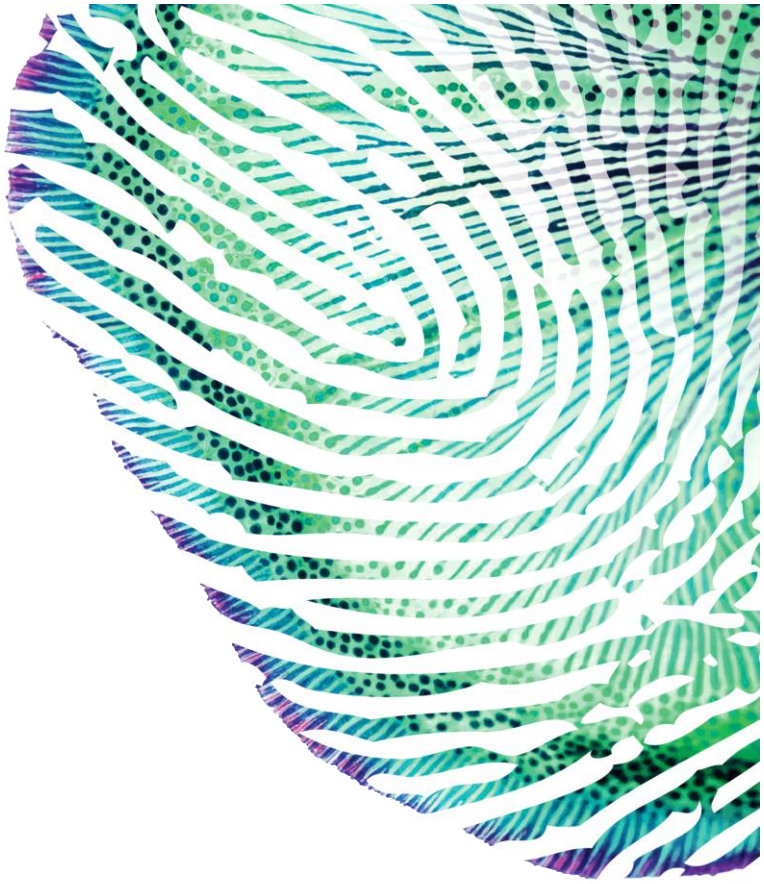


SANCTUM WELLNESS

Welcome to Your Personalized Nutrigenomic Report

This report offers personalized genetic insights designed to enhance your health and well-being. It is organized to guide you from foundational health elements to more specific and advanced areas, ensuring a comprehensive approach to your overall wellness. Always discuss any dietary or supplement changes with your physician or dietitian, especially if medications or complex health issues are involved. For assistance in finding a physician or dietitian, contact MaxGen Labs or visit our website.

Nutrigenomics Overview

Nutrigenomics is the study of how our genes interact with our diet and lifestyle to influence health and disease. This emerging field focuses on understanding the relationship between nutrition, gene expression, and overall well-being. By examining genetic variations, known as single nucleotide polymorphisms (SNPs), nutrigenomics helps identify how individual genetic differences can affect nutrient metabolism, dietary needs, and responses to various foods. This personalized approach allows for tailored dietary and lifestyle recommendations that can optimize health and prevent disease.

Importance of Nutrigenomics

The importance of nutrigenomics lies in its ability to provide personalized health insights based on an individual's unique genetic makeup. Traditional dietary guidelines often adopt a one-size-fits-all approach, which may not be effective for everyone due to genetic differences. By leveraging the principles of nutrigenomics, we can develop customized nutrition plans that address specific genetic predispositions, enhance nutrient absorption, and mitigate potential health risks. This personalized approach not only improves dietary effectiveness but also empowers individuals to make informed lifestyle choices that support long-term health and wellness.

Finding a Practitioner

Unlike genetic mutations that require the expertise of medical geneticists, nutrigenomic testing focuses on how your genes interact with your diet and lifestyle. For this, you should consult dietitians or practitioners who are specifically trained in nutrition and genetics. These professionals can provide personalized dietary advice based on your genetic profile. To find qualified practitioners near you, visit the MaxGenlabs.com website, where you can access a directory of experts who specialize in nutrigenomics.

Report Structure

The Foundational section is a great starting point for any wellness protocol. The recommendations within this section are generally accepted as basic health and wellness practices. Many focus on lowering the demand or stress on specific pathways within the body. By analyzing genetic weaknesses in different pathways, this section prioritizes which areas to focus on. Often, following these simple foundational recommendations can result in noticeable health improvements.

The Core section takes a more active role in supporting the body, diving deeper into specific pathways that may need additional help. Utilizing the latest research, this section prioritizes areas of nutrition, supplementation, and proactive lifestyle changes. It addresses not only vitamin absorption but also potential issues with vitamin bioactivation and cellular utilization, offering specific dietary forms of particular vitamins. These recommendations can make significant health improvements and are often more advanced and should be considered after implementing foundational changes.

The Advanced section delves deeply into the genetics behind specific enzymes, hormones, receptors, and other protein functions within the body. The recommendations here can include very targeted nutritional supplementation or lifestyle changes, important for both immediate health and preventative care. These suggestions are often based on longevity and aging research. It's easy to become overwhelmed with health protocols, diets, supplements, and reports like this one. We highly recommend starting with the Foundational section of the report. Many health goals can be achieved with guidance on basic practices. There are also times when new supplements or diets can cause adverse effects. We have done our best to predict and prioritize other pathways in these situations based on genetics.

How to use this report

This guide is designed to help you navigate and make the most of the information provided. Begin at page one and progress through the report sequentially, as the sections are arranged in order of physiological importance, starting with the most critical areas of your health. This ensures you address the most significant aspects first. You don't need to implement all the recommendations at once; focus on one section at a time and make gradual changes. Don't skip ahead! You may start feeling improvements early on as you begin to make lifestyle and diet choices that better fit you. And its perfect

Throughout the report, you'll find detailed descriptions of potential symptoms related to various genetic predispositions. Monitor your symptoms as you make changes, and use this feedback to guide your next steps. Remember that genetics is about probabilities, not certainties. The recommendations are based on your genetic tendencies, but they are not absolute. Your lifestyle, environment, and other factors also play significant roles in your health.

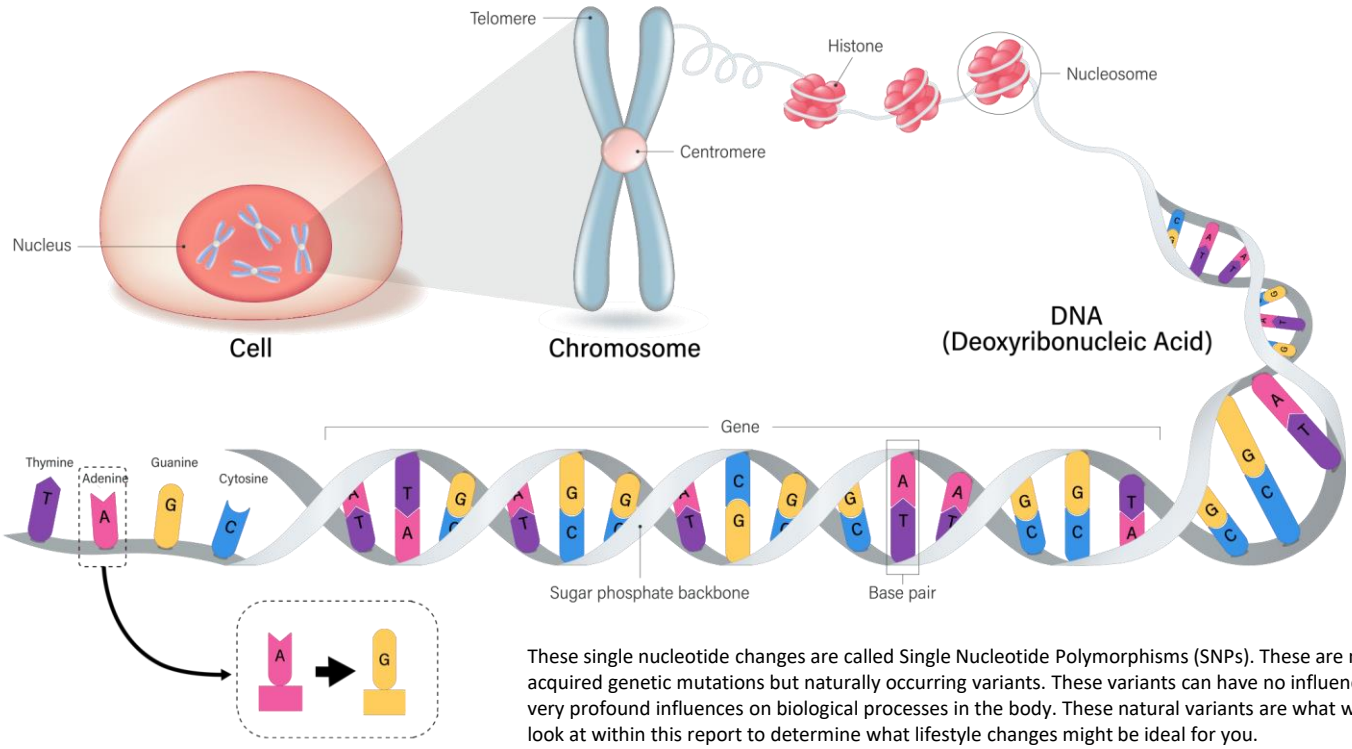
For personalized advice and to ensure you are making the best decisions, consider consulting with a dietitian or a nutritionally trained practitioner. They can help you interpret the report and tailor the recommendations to your unique needs. By following these guidelines, you can effectively use this report to improve your health and well-being. Remember, progress is a journey, and taking it one step at a time will help you achieve the best results.

Terminology

- **DNA and Genes**: DNA (deoxyribonucleic acid) is the molecule that carries genetic information in your cells. Genes are specific segments of DNA that contain instructions for the development, functioning, growth, and reproduction of your body.
- **Alleles:** An allele is a variant form of a gene, represented by different sequences of DNA bases (A, T, C, and G) at a specific location on a chromosome. These variations can result in different traits, such as eye color, and can be either dominant or recessive.
- **SNPs (Single Nucleotide Polymorphisms):** SNPs are the most common type of genetic variation among individuals. Each SNP represents a variation in a single DNA building block, known as a nucleotide. These variations can influence how individuals respond to certain drugs, their susceptibility to environmental factors, and their risk of developing particular diseases.

Genotype Information:

- **Wild Type (WT):** Refers to the typical or 'normal' sequence of a gene.
- **Heterozygous (+/-):** Indicates the presence of two different alleles for a particular gene.
- **Homozygous (++ or --):** Indicates the presence of two identical alleles for a particular gene.



Single Nucleotide Change

These single nucleotide changes are called Single Nucleotide Polymorphisms (SNPs). These are not acquired genetic mutations but naturally occurring variants. These variants can have no influence to very profound influences on biological processes in the body. These natural variants are what we look at within this report to determine what lifestyle changes might be ideal for you.

Lifestyle

The Lifestyle page provides practical and actionable recommendations designed to enhance your overall health and well-being through simple yet effective lifestyle modifications. These recommendations are based on your genetic insights and focus on foundational elements such as sleep, stress management, addiction, and environmental factors. By implementing these strategies, you can reduce stress on specific pathways within your body and create a solid foundation for improved health. Start with the recommendations that resonate most with you, and gradually incorporate more changes to experience the full benefits of a personalized approach to wellness.

Sleep Tendencies

Good sleep habits are essential for maintaining overall health and well-being. In this section, we will explore effective strategies to cultivate healthy sleep habits that support restorative rest and enhance daily functioning.

You have a biological tendency towards an average bed times, average sleep duration, and decreased sleep quality.

Weight Loss & Sleep

There is a strong connection between sleep and weight management. Poor sleep quality and insufficient sleep can disrupt hormones that regulate appetite, leading to weight gain and other metabolic issues.

Your genetic profile indicates a normal need for sleep in relation to weight loss. Maintaining regular sleep patterns supports healthy metabolism and weight management.

Tips for Better Sleep

Achieving better sleep often requires making specific changes to your daily routine and environment. This section provides tips to help you create an optimal environment and adopt habits that promote restful and uninterrupted sleep.

Consider increasing morning sun exposure, daily exercise, calming pre-sleep routine, ensure your room is dark while sleeping, consume antioxidant rich foods, like berries and dark leafy greens.

Avoid for Better Sleep

Identifying and avoiding sleep disruptors is crucial for achieving a good night's rest. This section outlines common sleep inhibitors and provides guidance on how to minimize their effects, helping you to avoid interruptions and enjoy more restorative sleep.

Consider avoidingblue light exposure at night, heavy meals for dinner, evening exercise, caffeine & nicotine after 3PM.

Sleep Apnea

Sleep apnea and dyspnea are associated with significant health risks, including cardiovascular disease, reduced quality of life, and increased mortality.

Normal risk for sleep apnea/dyspnea

Smoking Toxicity

Smoking introduces harmful chemicals into the body, leading to issues such as lung cancer, heart disease, and respiratory problems.

You have a risk of adverse effects of cigarette smoking. Consider glutathione-boosting supplements, Vitamin C containing fruitsto minimize the harmful effects of smoking.

Quitting Difficulty

Some individuals struggle more with quitting, focusing on the role of genetics in addiction and withdrawal.

Quitting smoking is likely to be more challenging, requiring intensive support, including nicotine replacement therapy, behavioral counseling, and medications to effectively manage cravings and stress.

Support for Quitting

This section offers tailored recommendations and resources, including behavioral therapies and pharmacological aids, to help you quit smoking based on your genetic profile and personal needs.

You may require a higher dosage of Nicotine Replacement Therapy, cognitive behavioral therapy, and discussing pharmaceutical intervention (bupropion) with your physician to quit smoking.

How Do You Learn Best?

Effective learning strategies are crucial for individuals of all ages to reach their full academic and personal potential. By understanding each person's unique cognitive strengths and challenges, parents, educators, and learners themselves can tailor educational approaches to enhance the learning experience. This section provides a comprehensive overview of personalized learning strategies, with a particular focus on children but also relevant for adults. Drawing on insights from cognitive psychology, educational research, and genetic factors, these strategies aim to develop effective study habits, improve memory retention, and foster a love for learning. Whether supporting a child struggling with schoolwork or enriching an adult's educational journey, these strategies offer valuable tools to optimize the learning process and achieve academic goals.

Strategic Games and Puzzles: Engaging in strategic games, puzzles, and activities that require planning and decision-making can enhance executive functions.
Intrinsic Motivation: Use positive reinforcement and set personal goals to boost motivation and engagement in learning activities.
Break Tasks into Smaller Steps: Breaking learning tasks into manageable steps can help improve focus and retention.
Practice Emotional Regulation Techniques: Techniques such as deep breathing and mindfulness can help manage stress and improve focus.
Engage in Structured Learning Environments: Structured and supportive learning environments can enhance cognitive performance and reduce stress.

Dietary Habits

Understanding dietary habits and their underlying genetic influences is essential for promoting overall health and well-being. Our eating behaviors, including cravings, meal patterns, and food preferences, are shaped by a complex interplay of genetic, environmental, and psychological factors. By exploring the genetic basis of various eating habits, we can uncover how genetic predispositions influence responses to stress and emotions, drive snacking behavior, and affect sensitivity to certain tastes. Additionally, examining genetic factors can shed light on tendencies toward overeating, the effectiveness of dietary strategies like intermittent fasting, and risks associated with eating disorders such as anorexia. This comprehensive approach helps in developing personalized strategies for maintaining a healthy diet and improving overall health outcomes.

Emotional Eating

Emotional under and overeating are complex behaviors often influenced by genetic factors that regulate our response to stress, hunger, and satiety. Emotional eating occurs when individuals use food as a coping mechanism to manage emotions.

You have a moderate risk of emotional eating. Your genetic profile suggests some variations that may influence how you experience stress and reward. Incorporate mindful eating practices.

Cravings & Snacking

Snacking desire, or the frequent urge to eat between meals, is often driven by a combination of genetic and environmental factors. Genetics can influence hunger signals, and reward pathways, making some individuals more prone to cravings and snacking

You have a moderate tendency to snack. Focus on healthy snack options and structured meal times to manage this tendency effectively.

Bitter Taste

Some individuals have a heightened sensitivity to bitterness due to genetic variations, leading to a reduced desire to eat vegetables. This trait, influenced by genes such as TAS2R38, affects taste receptors and can make certain vegetables taste excessively bitter.

You are less sensitive to bitter flavors, allowing you to enjoy a wider variety of vegetables and foods without strong bitterness. Use this to maintain a diverse and nutrient-rich diet.

Sweet Tooth

A preference for sweet foods, often referred to as a "sweet tooth," is influenced by genetic variations that affect taste receptors and reward pathways. Genes can play a significant role in sweet taste perception and cravings for sugary foods.

You have a moderate tendency to crave sweets. Your genetic profile suggests an average likelihood of desiring sugary foods. Opt for healthy sweets and manage cravings with balanced meals.

Overeating

Overeating can be influenced by genetic factors that affect appetite regulation and satiety signals. Genes play a significant role in hunger and food intake, predisposing some individuals to consume more than necessary.

You may experience less feelings of fullness than the average person. Consider watching portion sizes, increasing dietary fiber, and eating slower to help manage your appetite and support satiety.

Intermittent Fasting

The effectiveness of intermittent fasting may be influenced by genetic variations affecting metabolism and energy utilization. Genes involved in metabolic regulation, impacting how individuals respond to fasting periods.

You are likely to have mild issues with intermittent fasting. This means you might find it more difficult to adhere to fasting periods or may not experience as many benefits.

Carbohydrate Sensitivity

Carbohydrate sensitivity refers to how well an individual can metabolize and tolerate carbohydrates. Genes play a role in glucose metabolism and insulin sensitivity, impacting how the body responds to carbohydrate intake.

You are likely to have an average sensitivity to carbohydrates.

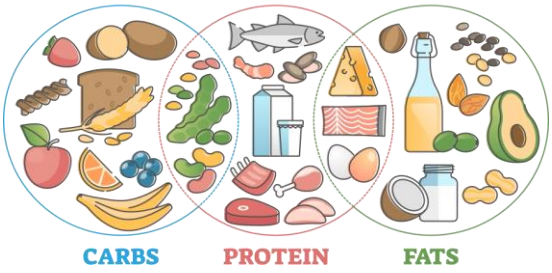
Eating Disorders

Anorexia nervosa and bulimia have genetic components, with certain genes influencing appetite, anxiety, and body image. Variants in these genes are associated with higher risks of developing eating disorders. Understanding this genetic tendency can help you seek treatment, if needed, sooner.

You may have an increased risk of developing conditions such as anorexia, bulimia, or binge eating disorder. If you notice any signs of disordered eating, consider seeking support from a healthcare provider or counselor.

Diets

Exploring various dietary approaches can provide valuable insights into maintaining and improving health. Each diet has unique principles and benefits, often influenced by genetic predispositions that affect metabolism, nutrient absorption, and overall dietary response. Understanding these factors can help tailor diets to individual needs, optimizing health outcomes and promoting well-being. In this guide, we will delve into several popular diets and related genetic considerations, offering a comprehensive overview to help you make informed dietary choices.



DASH Diet

The DASH (Dietary Approaches to Stop Hypertension) diet emphasizes the consumption of fruits, vegetables, whole grains, and lean proteins while reducing sodium intake. This diet is particularly beneficial for individuals with genetic predispositions to high blood pressure.

You may experience slightly enhanced benefits from the DASH diet. This means you could see a more significant improvement in blood pressure and cardiovascular health.

Ketogenic Diet

The Ketogenic diet focuses on high fat, moderate protein, and very low carbohydrate intake to induce a state of ketosis, where the body burns fat for fuel. Genetic factors can impact an individual's ability to adapt to and benefit from a ketogenic diet, influencing fat metabolism and weight management.

You are likely to have average benefits from a ketogenic diet.

Mediterranean Diet

The Mediterranean diet promotes the consumption of fruits, vegetables, whole grains, fish, and healthy fats, such as olive oil, while limiting red meat and processed foods. This diet is associated with numerous health benefits, particularly for cardiovascular health.

You are likely to experience the standard health benefits of the Mediterranean diet, such as improved heart health and overall well-being.

Hunter Gatherer diet

The Hunter-Gatherer diet, also known as the Paleo diet, emphasizes whole foods that were available to our pre-agricultural ancestors, such as lean meats, fish, fruits, vegetables, nuts, and seeds. Genetic variations can influence how well an individual adapts to this diet, particularly in terms of carbohydrate metabolism.

You may experience a slight increase in health benefits from the Hunter-Gatherer diet. This includes marginally improved nutrient intake and enhanced well-being.

Weight Loss and GLP-1

Understanding the interplay between weight loss, dietary fat, and the hormone GLP-1 (glucagon-like peptide-1) is crucial for optimizing weight management strategies. GLP-1 plays a significant role in regulating appetite, insulin secretion, and glucose metabolism, influencing how your body responds to different types of fat and overall diet. Genetic variations can affect GLP-1 activity and its impact on weight loss efforts.

Obesity & Fat Intake

The relationship between fat intake and obesity is complex and influenced by genetics. Genetic variations affect how your body metabolizes and stores fat, influencing obesity risk. Understanding these genetic factors helps tailor dietary choices to support healthy weight management.

Your genotype is associated with a normal risk of obesity with increased fat intake

GLP-1 Agonist Effectiveness

GLP-1 agonists, such as those used in the treatment of type 2 diabetes, work by enhancing insulin secretion and reducing blood sugar levels. The effectiveness of these medications can be influenced by genetic variations, which affects the response to treatment.

You are likely to have a normal response to GLP-1 drugs. These medications should effectively help in managing your blood sugar levels.

Natural GLP-1 Options

Natural GLP-1 options involve dietary and lifestyle choices that naturally stimulate the production of GLP-1, a hormone that enhances insulin secretion and appetite regulation. Foods rich in fiber and protein, as well as regular physical activity, and berberine can stimulate GLP-1 production.

You are likely to experience substantial benefits from using berberine. This includes significant improvements in blood sugar regulation, insulin sensitivity, and overall metabolic function.

Weight loss & Diet

Weight loss in response to diet can vary widely among individuals, influenced by genetic factors that affect metabolism, appetite, and fat storage. Certain genetic variations determine how effectively your body responds to different dietary approaches, impacting the success of weight loss efforts.

You may experience moderately decreased weight loss with diet.

Fats

Understanding dietary habits and their underlying genetic influences is essential for promoting overall health and well-being. Our eating behaviors, including cravings, meal patterns, and food preferences, are shaped by a complex interplay of genetic, environmental, and psychological factors. By exploring the genetic basis of various eating habits, we can uncover how genetic predispositions influence responses to stress and emotions, drive snacking behavior, and affect sensitivity to certain tastes.

Additionally, examining genetic factors can shed light on tendencies toward overeating, the effectiveness of dietary strategies like intermittent fasting, and risks associated with eating disorders such as anorexia. This comprehensive approach helps in developing personalized strategies for maintaining a healthy diet and improving overall health outcomes.

HDL-Cholesterol

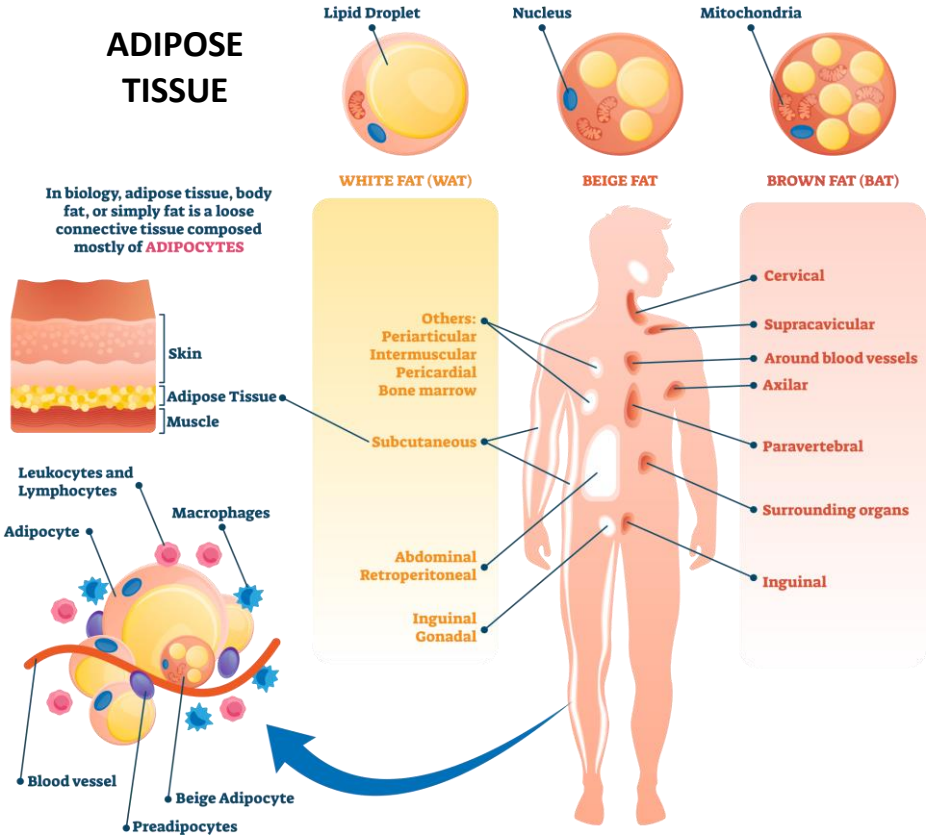
HDL cholesterol, often referred to as "good" cholesterol, plays a crucial role in heart health by transporting cholesterol from the arteries to the liver for removal. Genetics significantly influence HDL cholesterol levels, affecting how efficiently your body manages cholesterol.

Your genotype scores suggest a risk of having lower levels of HDL cholesterol (HDL-C), which may impact your cardiovascular health.

Monounsaturated Fats

Monounsaturated fats are a type of healthy fat found in foods such as olive oil, avocados, and various nuts and seeds. These fats are known for their beneficial effects on heart health, including reducing bad cholesterol levels and improving overall cardiovascular function.

Your genotype is associated with normal BMI and obesity risk with increased monounsaturated fat diet.



Saturated Fats

Understand how saturated fats affect inflammation and receive recommendations on dietary adjustments to minimize inflammatory responses.

The sum of your genotype scores is associated with a normalsensitivity to saturated fats.

HDL Cholesterol & Fat Intake

HDL cholesterol, known as "good" cholesterol, is crucial for heart health by helping remove cholesterol from the bloodstream. The type of fats you consume can influence HDL levels, with healthy fats often boosting these levels.

Your genotype has been associated with moderately lower HDL-c with high fat intake

Triglycerides

Triglycerides are a type of fat found in the blood, essential for storing energy but potentially harmful at high levels. Genetics play a significant role in regulating triglyceride levels, influencing how your body processes and stores fats.

Your genotype scores suggest a moderately higher level of circulating triglycerides after eating a fatty meal.

Inflammation & Fats

Inflammation is a natural immune response, but when overactive, it can lead to cardiovascular, neurological, and autoimmune diseases. The Standard American Diet (SAD) is rich in inflammatory foods and chemicals, worsening these conditions. Certain genes may increase your susceptibility to inflammation, making it crucial to maintain low inflammation levels for good health.
An anti-inflammatory diet emphasizes foods that reduce inflammation and is linked to lower risks of heart disease, diabetes, and certain cancers. Focus on nutrient-dense, whole, unprocessed foods rich in antioxidants and omega-3 fatty acids. Reducing intake of processed foods, sugary beverages, and trans fats in favor of anti-inflammatory options can significantly improve health and well-being.

Chronic Inflammation

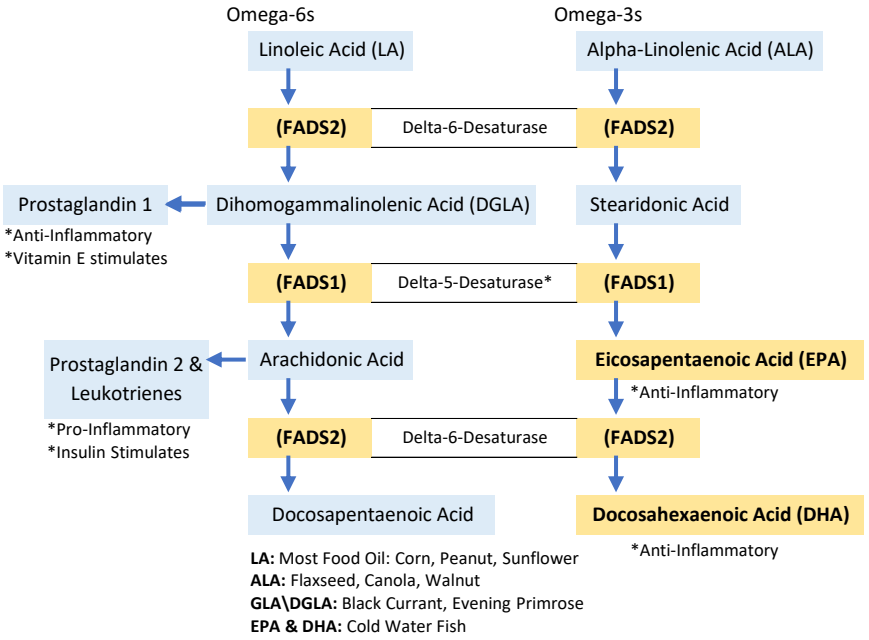
Cardiovascular Disease	Bone Diseases
Neurological Disorders	Muscular Diseases
Diabetic Complications	Skeletal Diseases
Metabolic Complications	Arthritis
Autoimmune Disease	Cancer
Respiratory Disease	Skin Conditions

Anti-Inflammatory Foods

Blueberries	Grass fed butter
Ginger/Turmeric	Free-range eggs
Dark Chocolate	Grass fed beef
Good fats	Wild caught fatty fish
Olive Oil	Broccoli

Pro-Inflammatory Foods

Sugar	Bad fats
Vegetable oils	Processed meats
Fried foods	Trans fats
Wheat flour	Fast foods
Dairy	Conventional meats



LA: Most Food Oil: Corn, Peanut, Sunflower
ALA: Flaxseed, Canola, Walnut
GLA\DGLA: Black Currant, Evening Primrose
EPA & DHA: Cold Water Fish

Other Causes of Inflammation

Lack of sleep	Poor gut health
Lack of exercise	Infection
Lack of rest	Toxic exposures
Over training	Food Sensitivities

Generalized Inflammation

Assess your body's overall inflammation and understand the factors contributing to elevated levels, helping you manage and reduce chronic inflammation effectively.

You are at a regular risk of inflammation, consistent with the general population.

Labs Your Physician May Order

HS-CRP: High Sensitive C-Reactive Protein
ESR: Erythrocyte Sedimentation Rate
Omega 3/6 Ratios or Fatty Acid Tests
LPS: lipopolysaccharide

Omega 6 / Arachidonic Acid

Learn about the role of arachidonic acid in your diet and its impact on inflammation, along with guidance on managing its intake for better health.

You are at normal risk of Omega 6 sensitivity. It is still advisable to avoid excessive omega 6 containing foods.

Fish Oil

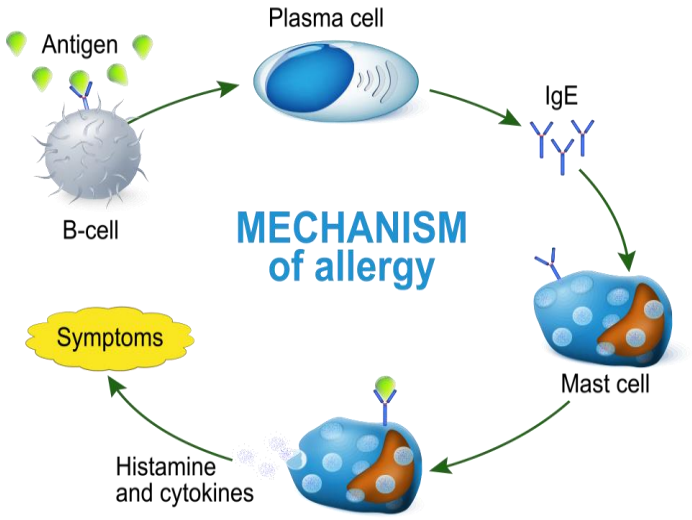
Determine your genetic predisposition for needing fish oil supplements, which are known to help reduce inflammation and support neurological health. This section is very important for nursing mothers.

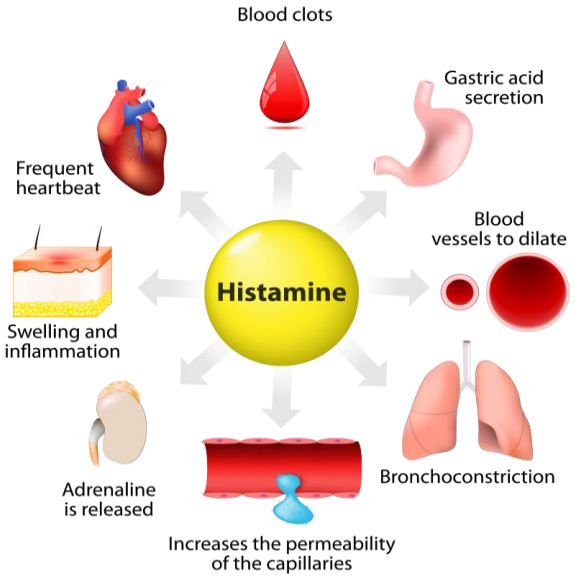
You have a mild increased need for omega-3s (fish oils) for neurological health. Consider eating a diet containing fish.

Histamine Sensitivity

Histamine is a crucial chemical in the body, playing key roles in both the immune system and as a neurotransmitter. During allergic reactions or mast cell degranulation, histamine is released, leading to common allergy symptoms. Beyond its immune functions, histamine significantly impacts brain activities such as sleep-wake cycles, appetite, and cognitive function. In the digestive system, it stimulates gastric acid secretion, which is essential for food digestion.

The body primarily breaks down histamine using two enzymes: Histamine N-Methyltransferase (HNMT) and Diamine Oxidase (DAO/AOC1). When histamine levels become excessive, due to either dietary intake, environmental factors, or genetic predispositions, symptoms such as headaches, gastrointestinal distress, skin reactions, and respiratory issues can arise. Understanding how genetic variations influence histamine metabolism is vital for managing sensitivity and improving overall well-being.





High Histamine Foods

Alcohol/Ferments	Walnuts	Bananas
Citrus Fruits	Cashews	Wheat
Dried Fruits	Peanuts	Strawberries
Soured Foods	Spinach	Beans
Smoked Meats	Eggplant	Chocolate
Aged Cheese	Shellfish	Food Dyes
Tomatoes		Food Additives

High Histamine Symptoms

Headaches	Nasal Congestion
Migraines	Fatigue/Adrenal Fatigue
Digestive Issues	Irregular Menstrual Cycles
Irritable Bowl	Blood Pressure Issues
Anxiety	Nasal Congestion
Eczema	Fibromyalgia
Other Skin conditions	Adrenal Fatigue

Female Histamine Levels

Pregnancy: Decreased
Luteal Phase: Decreased
Follicular Phase: Increased
Ovulation: Increased
Menopause: Increased
Perimenopause: Variable
Increased Estrogen: Increased

DAO Enzyme Activity

Diamine oxidase (DAO) is crucial for breaking down histamine, a compound involved in immune responses and digestion. Reduced DAO activity can lead to histamine buildup, causing symptoms like headaches and digestive issues.

You have significant reduction in DAO enzyme activity. You should consider a low histamine diet and supplemental DAO enzymes. (%67 reduction) Highly consider the recommendations on this page.

DAO Enzyme Levels

DAO production, controlled by the AOC1 gene, is essential for managing histamine levels in the body. Genetic variations can reduce DAO production, leading to insufficient enzyme levels and increased histamine-related symptoms.

#N/A

HNMT

HNMT is responsible for breaking down histamine inside of your cells and is common in asthma. This enzyme requires adequate levels of SAMe from the methylation cycle.

We do not anticipate a decrease in HNMT activity.

MAO

MAO is downstream in the histamine breakdown pathway and can become overwhelmed if there are genetic variations in the MAO enzyme.

You are unlikely to have downstream histamine issues

Food Sensitivities & GI Health

Food sensitivities and gastrointestinal (GI) health are deeply interconnected, impacting overall well-being and quality of life. Unlike food allergies, which trigger an immediate immune response, food sensitivities often lead to more subtle and delayed symptoms, making them harder to diagnose and manage. Understanding the genetic and environmental factors that contribute to food sensitivities can help tailor dietary choices to improve GI health and prevent discomfort. This page explores the most common food sensitivities, their genetic underpinnings, and their impact on gastrointestinal health.

Gluten Sensitivity & Celiac Disease

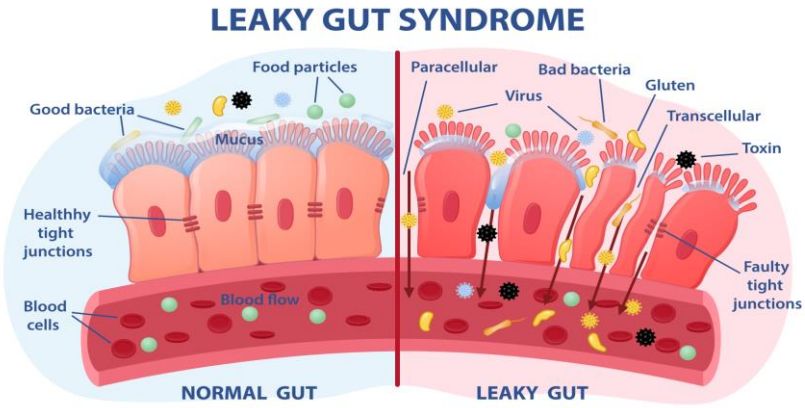
Gluten sensitivity involves an adverse reaction to gluten, a protein found in wheat, barley, and rye. Unlike celiac disease, which is an autoimmune disorder that causes intestinal damage, non-celiac gluten sensitivity (NCGS) does not cause such damage but can still lead to symptoms like bloating, diarrhea, and abdominal pain. Celiac disease requires strict adherence to a gluten-free diet to prevent serious health complications, while managing NCGS typically involves reducing or eliminating gluten to alleviate symptoms.

You have a mildly increased risk of gluten sensitivity. You may experience some symptoms of gluten sensitivity and might benefit from monitoring your gluten intake.

Dairy Sensitivity

Dairy sensitivity can manifest as an intolerance to lactose or an allergy to proteins found in milk, such as casein and whey. Symptoms range from digestive issues like bloating and diarrhea to allergic reactions such as hives and respiratory problems. Some individuals can lose significant amounts of weight when removing dairy from their diet.

Eliminating dairy could moderately reduce your weight. You are likely to experience digestive discomfort, such as bloating, gas, and diarrhea, after consuming dairy products.



Understanding Leaky Gut Syndrome

Leaky Gut Syndrome occurs when the lining of the small intestine becomes damaged, causing undigested food particles, toxins, and bad bacteria to leak through the intestinal wall into the bloodstream. This can trigger inflammation and changes in the gut microbiota, leading to a variety of health issues such as autoimmune diseases, food sensitivities, and digestive disorders. The image illustrates the difference between a healthy gut with tight junctions and a leaky gut where these barriers are compromised, allowing harmful substances to enter the bloodstream and disrupt overall health. Maintaining gut health through diet, probiotics, and lifestyle changes is crucial to preventing and managing leaky gut syndrome.

Peanut Sensitivity

Peanut sensitivity is a serious and potentially life-threatening condition that can cause severe allergic reactions. Symptoms can include hives, swelling, difficulty breathing, and anaphylaxis. Genetic factors can influence the risk of developing peanut allergies.

You may experience mild to moderate allergic reactions or sensitivity to peanuts, such as itching or minor swelling.

GI Barrier Integrity

The integrity of the gastrointestinal barrier is crucial for maintaining a healthy digestive system and preventing diseases. Variations in MYO9B have been linked to impaired barrier integrity, increasing susceptibility to gastrointestinal diseases such as celiac disease and inflammatory bowel disease (IBD).

You have a higher likelihood of reduced gastrointestinal barrier integrity, increasing the risk of leaky gut and potential digestive problems.

Non-Secretor Status

Non-secretor status refers to individuals who do not secrete ABO blood group antigens in their bodily fluids, including the digestive tract. This status is determined by the FUT2 gene and is associated with increased susceptibility to infections and differences in gut microbiota composition.

You are an FUT2 secretor, which means you secrete certain blood group antigens into bodily fluids. This can influence your gut microbiota and potentially offer some protection against infections.

Foods & Food Additives

Understanding the intricate relationship between our genetics and the foods we consume is essential for optimizing health and well-being. The Foods & Food Additives page explores how various dietary components such as fermented foods, tyramine-rich foods, green tea, smoked meats, and food dyes can impact our health. From the probiotics in fermented foods that boost beneficial gut bacteria to the potential migraine triggers in tyramine-rich foods, and from the antioxidant power of green tea to the health implications of smoked meats and artificial food dyes, this guide provides insights into making informed dietary decisions.

Examples of Common Food Dyes & Potential Reactions

Dye Name	Common Foods	Potential Risks
Red 40	Candy, Soda	Hyperactivity, Allergies
Red 3	Candy, Cocktail Cherries	Thyroid issues
Yellow 5	Snacks, Cereals	Allergic reactions, Hyperactivity
Yellow 6	Chips, Cheese, Beverages	Allergic reactions, potential carcinogen
Blue 1	Ice Cream, Drinks	Allergic reactions, potential cancer risk
Blue 2	Candy, Beverages	Hyperactivity, potential carcinogen
Green 3	Beverages, Candy, Ice Cream	Allergic Reactions, Potential carcinogen

Food Dyes

Artificial food dyes are widespread in processed foods and can cause hyperactivity, allergic reactions, and other adverse effects in susceptible individuals. Genetic variations in detoxification and metabolic pathways, such as those involving the CYP450 enzymes, can affect your sensitivity to these additives.

You are at a normal risk for sensitivity to food dyes and preservatives.

Fermented Foods

Fermented foods are rich in probiotics that promote gut health and aid digestion. However, individuals with genetic variations affecting histamine metabolism, such as mutations in the DAO or HNMT genes, may experience adverse reactions like headaches, digestive issues, and allergic responses.

Highly consider removing fermented foods. Especially if you experience migraine headaches and strange stomach issues.

Tyramine Foods

Tyramine, found in aged cheeses, cured meats, and other fermented foods, can trigger headaches and other symptoms in individuals with genetic variations affecting monoamine oxidase (MAO) activity. Variants in the MAO-A gene can lead to reduced enzyme activity, resulting in higher tyramine sensitivity.

You may be able to tolerate tyramine containing foods well.

Green Tea

Green tea contains catechins, such as epigallocatechin gallate (EGCG), which have numerous health benefits, including antioxidant and anti-inflammatory properties. Individuals with certain COMT variants may experience different effects from green tea consumption that influence mood and cognitive function.

You are likely to benefit from green tea consumption. Cheers!

Smoked Meats

Smoked meats often contain polycyclic aromatic hydrocarbons (PAHs) and other harmful compounds that can pose health risks. Genetic variations in detoxification pathways, such as those involving the CYP1A1 and CYP1B1 genes, can influence your sensitivity to these compounds.

You are likely to have normal risks from consuming smoked meats. Enjoy them in moderation.

Caffeine Metabolism

Caffeine metabolism varies widely among individuals, influenced by genetic factors that determine how quickly or slowly caffeine is processed in the body. Understanding your caffeine metabolism can help you tailor your caffeine intake to optimize alertness and avoid negative effects such as jitteriness or insomnia.

You have moderate sensitivity to caffeine, and you may experience some side effects like increased heart rate or mild jitteriness with higher caffeine intake.

Sulfur Containing Foods

Sulfur-containing foods like garlic, onions, and cruciferous vegetables provide essential nutrients and health benefits. However, for individuals with genetic variations affecting sulfur metabolism, such as mutations in the CBS or SUOX genes, these foods can lead to digestive discomfort and other symptoms.

You have average need for cruciferous vegetables in your diet. Feel free to eat as many as you like!

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Toxic Exposures

Understanding your genetic susceptibility to environmental toxins is crucial for making informed lifestyle choices that can protect your health. Various genes influence how your body detoxifies harmful substances, such as pesticides, heavy metals, and industrial chemicals. Genetic variations can affect the efficiency of these detoxification pathways, leading to increased sensitivity and risk of adverse health effects. By identifying your genetic predispositions, you can take proactive steps to minimize exposure to these toxins, choose safer alternatives, and support your body's natural detoxification processes. It is advisable to avoid these exposures even if there is no identified genetic susceptibility

Aromatic Hydrocarbons

Aromatic hydrocarbons and dioxins are common environmental pollutants found in industrial emissions, tobacco smoke, and certain food products. These compounds can be highly toxic and carcinogenic, and genetic variations can affect your body's ability to detoxify and eliminate them.

You have an increased risk of toxicity from PAH, PHAH, PCBs, & Dioxins. Avoid smoke and chemicals as much as possible.

Insecticide Sensitivity

Insecticides are widely used in agriculture and home pest control. While effective for managing pests, they can pose health risks, especially for individuals with genetic variations affecting detoxification pathways. Consider choosing organic produce and minimizing the use of chemical pest control methods to reduce exposure.

You have a normal sensitivity to insecticides. Its's still probably a good idea to avoid exposures.

Glyphosate Sensitivity

Glyphosate is a widely used herbicide found in many genetically modified crops. Genetic variations can influence how your body handles glyphosate exposure, potentially increasing your risk of adverse health effects. Consider choosing organic produce and minimizing exposure to glyphosate whenever possible.

You have a normal sensitivity to Glyphosate. Its's still probably a good idea to avoid exposures.

Phthalates & Parabens

Phthalates and parabens are common in many consumer products, from plastics to cosmetics. While useful, these chemicals can disrupt endocrine function, potentially causing hormonal imbalances and health issues. To reduce exposure, consider using products labeled as phthalate-free and paraben-free.

You have an average risk of toxicity from Phthalate & Parabens. Avoiding exposures to theses chemicals is still advised.

BPA & Plastics

Bisphenol A (BPA) and other plastic-related chemicals are pervasive in food packaging, containers, and household items. These substances can disrupt endocrine function and lead to various health issues. It's essential to use non-plastic alternatives and be mindful of your exposure to plastic products.

You have an increased risk of toxicity from BPA and plastics. Consider using non-plastic containers for food and drinks.

Butadiene & Benzene

Butadiene, benzene, styrene, and ethylene oxide are industrial chemicals found in products like synthetic rubber (play ground floors), plastics, and solvents. These substances are known carcinogens and can cause significant health issues, especially for individuals with genetic susceptibilities.

You have a normal sensitivity to butadiene, benzene, styrene, and ethylene oxide. However, it's still advisable to avoid exposure to these chemicals.

Iron Sensitivity

Iron is an essential nutrient, but excessive iron intake can be harmful, particularly for individuals with genetic variations affecting iron metabolism. Elevated iron levels can lead to conditions like hemochromatosis, causing fatigue and even organ damage.

You have a normal risk of iron sensitivity. Monitor your yearly labs for low iron.

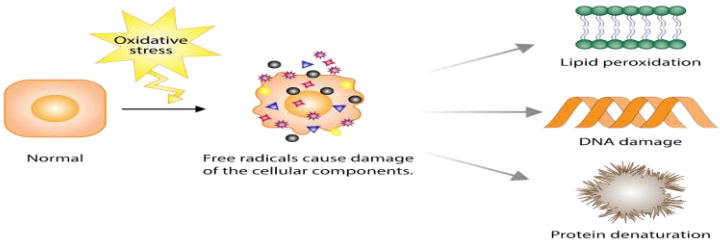
Acetaminophen

Acetaminophen, commonly used for pain relief and fever reduction, can pose risks for individuals with certain genetic variations. These genetic differences can affect how your body metabolizes and detoxifies acetaminophen, potentially leading to adverse effects on the liver.

You have an increased risk of adverse effects from acetaminophen. Consider alternative forms of pain relief. Additionally, taking N-acetylcysteine (NAC) may help minimize potential adverse effects.

Oxidative Stress

Oxidative stress occurs when there is an imbalance between free radicals and antioxidants in your body, leading to cellular damage and contributing to various health issues, including chronic diseases and aging. While oxidative stress is necessary for your immune system to fight off invaders, it is the imbalance between oxidative stress and antioxidants that is important. Your genetic profile can influence how well your body manages oxidative stress. This section provides insights into your genetic predispositions related to oxidative stress and offers personalized recommendations to enhance your antioxidant defenses. By understanding and addressing these genetic factors, you can take proactive steps to protect your cells from oxidative damage and support overall health and longevity.



CORE

Glutathione & Antioxidant Defense

Glutathione is a critical antioxidant that helps protect your cells from oxidative damage and supports your body's detoxification processes. The genes involved in glutathione synthesis and recycling play essential roles in maintaining the balance of oxidative stress and antioxidant defense. Variations in these genes can affect your body's ability to produce and utilize glutathione effectively, influencing your overall oxidative stress levels and susceptibility to damage from free radicals.

You are likely to have normal glutathione production, peroxide degradation, and lipid peroxide protection. Maintaining a balanced diet rich in antioxidants should suffice to support your body's detoxification processes.

CORE

Superoxide Dismutase (SOD) Pathways

The Superoxide Dismutase (SOD) pathway is a crucial part of your body's defense against oxidative stress. SOD enzymes help convert superoxide radicals, harmful byproducts of cellular metabolism, into less damaging molecules like hydrogen peroxide. However, elevated Nitric Oxide Synthase (NOS) activity can lead to increased levels of nitric oxide (NO), which can react with superoxide to form peroxynitrite (ONOO-), a potent oxidant that contributes to the formation of nitrotyrosine. Variations in the genes responsible for SOD and NOS production can impact the efficiency of these processes, affecting your ability to manage oxidative stress and maintain cellular health.

You may remove superoxide slower than others. supplementing SOD/Catalase supplements, or increasing foods high in manganese.

CORE

Glutathione S-Transferases (GST) in Detoxification

The Glutathione S-Transferase (GST) pathway plays a vital role in detoxifying harmful substances and protecting your cells from oxidative damage. GST enzymes facilitate the conjugation of glutathione to various toxins, making them more water-soluble and easier for the body to excrete. Genetic variations in the GST genes can influence the efficiency of this detoxification process, potentially affecting your susceptibility to oxidative stress and toxin exposure.

You are homozygous for a variant in the GSTP1 gene, which can impair antioxidant defense. It is crucial to support your body's detoxification processes with a diet high in antioxidants and supplements like N-acetylcysteine (NAC) and milk thistle.

CORE

Causes of Oxidative Stress

- Pollution
- UV Radiation
- Processed Foods
- Trans/Bad Fats
- Alcohol & Smoking
- Low intake of fruits & Vegas
- Physical & Emotional Stress
- Medications
- Infections

Oxidative Stress Symptoms

- Fatigue
- Muscle & Joint Pain
- Memory Loss & Brain Fog
- Premature Aging
- Frequent Infections
- Headaches
- Cardiovascular problems
- Skin Disorders
- Respiratory issues & Coughing

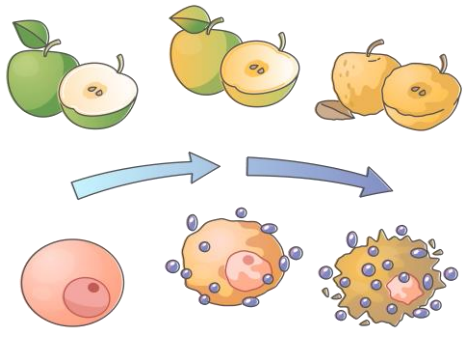
Foods

- Blueberries - anthocyanins
- Dark Chocolate - Flavonoids
- Artichokes - Fiber, Vit. C, Antioxidants
- Pecans - Antioxidants & Healthy Fats
- Spinach- Vit A & C, & Antioxidants
- Strawberries - Vit C & Antioxidants
- Goji Berries - Antioxidants
- Raspberries - Antioxidants
- Cruciferous Vegetables - Sulfur
- Brazil Nuts - Selenium

Supplements

- Vitamin C
- Vitamin E
- Zinc / Copper
- Selenium
- Co Q10
- N acetylcysteine (NAC)
- S-Acetyl-Glutathione
- Sulforaphane
- Methylene Blue

Oxidation



Core Nutrients

Vitamins D and A are essential nutrients that play critical roles in maintaining overall health and well-being. These fat-soluble vitamins are vital for numerous bodily functions, from supporting immune health and vision to ensuring proper bone growth and cellular function. However, the effectiveness and needs of these vitamins can vary significantly from person to person, influenced by genetic factors.

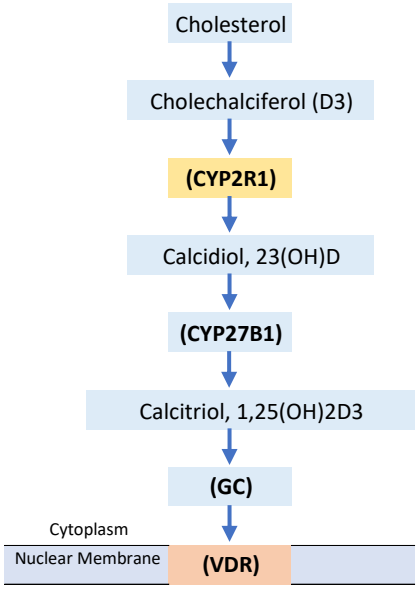
CORE

Vitamin D

Vitamin D plays a vital role in bone health, immune function, and overall well-being by helping the body absorb calcium and supporting immune responses. It must be converted in the liver and kidneys, with limited dietary sources making sunlight exposure or supplementation necessary for preventing deficiency. Ideally, UV exposure from 10 am to 3 pm for 10-30 minutes at least twice a week is recommended. For therapeutic dosing, D3 between 5,000 and 10,000 IU daily is advised. General wellness can be maintained with 1,000-2,000 IU daily.

Health Conditions

Rickets
Osteoporosis
Cancer
Inflammatory Bowel Disease
Multiple Sclerosis
Type I and II Diabetes



Vitamin D Testing

1,25 OH Vitamin D may be helpful in some complicated cases. Your Doctor may order the following tests.:
25-hydroxy (OH) vitamin D (Storage Vitamin D)
1,25 dihydroxy vitamin D (Active Vitamin D)

Vitamin D Foods

Cod Liver Oil
Swordfish
Salmon
Beef Liver
Egg Yolks
Cheese

Vitamin D Receptor (VDR)

The Vitamin D Receptor (VDR) is crucial for mediating the effects of vitamin D in the body. This receptor binds to vitamin D and regulates the expression of various genes involved in calcium absorption, bone health, and immune function. Genetic variations in the VDR gene can influence how effectively vitamin D performs these roles, impacting overall health and susceptibility to certain conditions.

Your VDR gene variants suggest significantly reduced function. It's crucial to ensure higher vitamin D intake, regular sun exposure and discuss regular 1,25-dihydroxyvitamin D testing with your healthcare provider.

Vitamin D Transport Protein (GC)

The GC gene encodes the vitamin D-binding protein (DBP), which is essential for the transport of vitamin D in the bloodstream. This protein binds to vitamin D and its metabolites, facilitating their distribution to various tissues in the body. Genetic variations in the GC gene can affect the levels and function of DBP, influencing vitamin D status and bioavailability.

We did not detect any variants in your vitamin D transport protein.

Vitamin D Activation (CYP2R1 & CYP27B1)

The CYP2R1 gene encodes an enzyme crucial for converting vitamin D into its active form, 25-hydroxyvitamin D [25(OH)D], essential for bone health, immune function, and other physiological processes. Additionally, the CYP27B1 gene further activates 25(OH)D into 1,25-dihydroxyvitamin D [1,25(OH)2D], which is the most potent form, playing a vital role in calcium homeostasis and overall health.

Your vitamin D conversion is slightly reduced. Include more vitamin D-rich foods in your diet and consider higher supplement doses. Regular monitoring of vitamin D levels is recommended.

Vitamin A

The Beta-Carotene Monooxygenase 1 (BCMO1) gene plays a significant role in converting beta-carotene from plant-based foods into active Vitamin A, which is essential for vision, immune function, and skin health. Genetic variations in BCMO1 can affect how efficiently your body performs this conversion, impacting your overall Vitamin A status.

Vitamin A is a fat-soluble vitamin, and excessive intake can lead to toxic levels. Please discuss supplementation with a healthcare provider and monitor your blood retinol levels regularly.

Your BCMO1 gene variants suggest that you have an efficient conversion of beta-carotene to retinol. No specific action is needed.

Low Vitamin A Symptoms

Vision issues
Chronic infections
Infertility
Mood disorders
Skin problems
Thyroid dysfunction
Growth delays

High Vitamin A Symptoms

Hair loss, Brittle nails
Liver damage
Mental confusion
Dry, rough skin
Cracked lips
Bone pain or tenderness
Fatigue

Dietary Sources Of Retinoids

Free range eggs
Organic Heavy Cream
Cod-liver oil
Grass fed butter
Grass fed beef & beef liver
Wild caught fatty fish & shrimp

Core Nutrients

Essential nutrients play vital roles in maintaining overall health and well-being. Phosphatidylcholine, derived from choline and influenced by PEMT variants, is important for liver function, brain health, and cell membrane integrity. Additionally, fat-soluble vitamins such as A, D, and E are crucial for vision, immune function, bone health, and antioxidant protection. Adequate intake through diet or supplementation is key, but managing intake is essential to avoid potential toxicity. Always discuss any changes with your physician or dietician.

CORE

Vitamin E

Vitamin E is a powerful antioxidant that protects cells from oxidative damage, supports immune function, and promotes skin health. It plays a crucial role in numerous bodily processes, including gene expression and cell signaling. While we are not focusing on specific genes for vitamin E, it interacts with multiple pathways in the body that are essential for maintaining optimal health.

We anticipate that you may have a slightly elevated need for Vitamin E. In addition to maintaining a balanced diet and healthy lifestyle, you might benefit from taking a multivitamin to ensure adequate Vitamin E intake.

Vitamin E Foods

- Nuts & Seeds
- Green Leafy Vegetables
- Fruits
- Seafood
- Eggs

Vit. Health Conditions

- Oxidative Stress
- Fatigue
- Peripheral Neuropathy
- Muscle Weakness
- Immune Dysfunctions
- Cognitive Decline
- Anemia

CORE

Vitamin C

Vitamin C, also known as ascorbic acid, is a vital nutrient essential for numerous bodily functions. It plays a key role in collagen synthesis, immune function, antioxidant protection, and the absorption of iron from plant-based foods. As a powerful antioxidant, vitamin C helps protect cells from damage caused by free radicals, potentially reducing the risk of chronic diseases. Since the human body cannot produce or store vitamin C, it is crucial to obtain adequate amounts through diet or supplements.

There is no significant risk for vitamin C deficiency. Maintain a balanced diet rich in fruits and vegetables to support overall health.

Vitamin C Foods

- Guava
- Blackcurrants
- Kiwi
- Bell Peppers
- Strawberries
- Oranges
- Papayas
- Broccoli

Vit. C health Conditions

- Anemia
- Weakened Immune System
- Poor Wound Healing
- Skin Issues
- Gingivitis & Gum Disease
- Cardiovascular disease
- Fatigue & Mood Disorders
- Frequent Bruising
- Scurvy

CORE

Vitamin B6

Vitamin B6, also known as pyridoxine, is a crucial nutrient involved in numerous bodily functions, including amino acid metabolism, neurotransmitter synthesis, and the production of hemoglobin. Its active form, pyridoxal 5'-phosphate (P5P), plays a vital role in maintaining brain health, supporting immune function, and regulating mood. Vitamin B6 is also essential for converting food into energy and aiding in the formation of neurotransmitters such as serotonin and dopamine.

There is a moderate risk for vitamin B6 deficiency. Focus on consuming a variety of high vitamin B6 foods, such as salmon, potatoes, and fortified cereals, and consider supplementation if necessary.

Vitamin B6 Foods

- Poultry
- Fish
- Organ meats
- Potatoes
- Non-Citrus Fruits
- Legumes
- Nuts & Seeds

B6 Health Conditions

- Fatigue & Weakness
- Irritability & Mood Changes
- Dermatitis
- Anemia
- Peripheral Neuropathy
- Impaired Immune Function
- Seizures

CORE

Phosphatidylcholine

Phosphatidylcholine is a vital nutrient derived from choline, essential for various bodily functions including liver health, methylation, brain function, and maintaining the structural integrity of cell membranes. Genetic variations in the PEMT gene can influence choline requirements, making it important to ensure adequate intake through diet.

Due to your significant need, a substantial increase in phosphatidylcholine intake through diet and supplemental PC is strongly recommended. Consult your healthcare provider.

Choline Foods

- Free Ranged Egg Yolks
- Beef Liver
- Chicken Breast
- Fish

Choline Health Conditions

- Liver Damage
- Non-Alcoholic Fatty Liver
- Memory Problems
- Difficulty Concentrating
- Anxiety & Depression
- Cardiovascular issues
- Developmental Problems
- Elevated Liver Enzymes

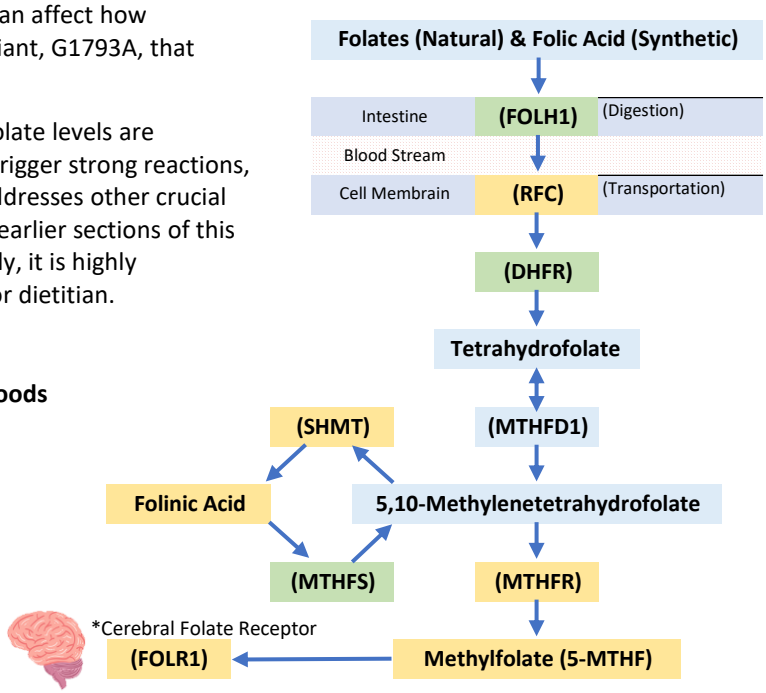
The Phosphatidylcholine & MTHFR Connection

By providing supplemental Phosphatidylcholine (PC), PC can help lower the demand on the methylation cycle. This is particularly important for individuals with MTHFR gene variants, which can impair the body's ability to process folate and support methylation. Ensuring adequate intake of PC can help alleviate some of the metabolic strain on the methylation pathway, thereby supporting better health and reducing the risk of complications associated with MTHFR mutations.

Methylation - MTHFR / Folate

Folate, also known as Vitamin B9, is very important for many body functions like making DNA, producing and breaking down neurotransmitters, detoxifying the body, and preventing heart disease. The MTHFR enzyme helps turn the folate we eat into Methylfolate, which is needed for over 200 different processes in our bodies, especially in the methylation cycle. There are two main types of MTHFR gene variants: C677T and A1298C, which can affect how how much Methylfolate is produced. We also include a third variant, G1793A, that is less researched but still potentially influential.

Many people experience significant improvements when their folate levels are optimized. However, methylfolate is a potent nutrient that can trigger strong reactions, such as anger and aggression, in some individuals. This report addresses other crucial factors before discussing methylfolate. It's essential to read the earlier sections of this report before considering methylfolate supplements. Additionally, it is highly recommended to work with a nutritionally trained practitioner or dietitian.



Associated Symptoms & Conditions

Depression
Anxiety
ADD/ADHD
Miscarriage
Infertility
Bipolar
Schizophrenia
Autism
Migraines
Cardiovascular Disease
Blood Clots
Detoxification Issues
Estrogen Issues
Cancer
Midline defects
Elevated Homocysteine
And More

MTHFR Friendly Foods

Green Leafy Vegetables
Liver
Asparagus
Broccoli
Free Range Eggs
Beans & Lentils
Did we say Liver yet?

MTHFR Results

MTHFR C677T	Heterozygous	Decreased Activity
MTHFR A1298C	Heterozygous	Slight Decreased Activity
MTHFR G1793A	Wild Type	Normal Activity

You are compound heterozygous for C677T and A1298C variants. This combination results in a 50-60% reduction in MTHFR enzyme activity. You may benefit from the recommendations on this page.

Methylfolate Sensitivity & Recommendations

When using Methylfolate supplements, start with a low dose and increase gradually. Adults typically start with 400 mcg. Research shows benefits from 400 mcg to 15 mg, but many people do well with less than 2 mg. There are other forms of folate like, Folinic Acid that may be less stimulating to some. Methylfolate and Folinic acid are more bioavailable forms than the synthetic, Folic Acid. If you are symptomatic consider these recommendations.

You may benefit from taking methylfolate. Consider starting with 400 mcg of methylfolate and gradually increase to 1,000 - 4,000 mcg daily.

Methyl Donor Sensitivity

Methyl donors like folate, vitamin B12, and betaine are vital for DNA methylation, neurotransmitter synthesis, and detoxification. Symptoms may include, anger, agitation, fatigue, mood changes, and difficulty concentrating.

You are likely tolerant to methyl donating nutrients. Take as needed.

Folate Absorption & Compounding Genes

Other genetic factors can further compound MTHFR-related issues (MTHFD1) and even reduce folate absorption (FOLH1), making it harder for the body to maintain optimal folate levels.

You likely have minimal influence from the DHFR, MTHFD1, and FOLH1 on MTHFR and methylfolate production.

Cellular Utilization

Even if blood levels of folate appear normal, genetic variations can impact the transport of folate into your cells, producing symptoms.

You have a mild reduction in cellular uptake of folate, slight reduction in the brain's ability to absorb folate due to the FOLH1 gene,, consider annual RBC folate and homocysteine testing and high quality folate intake.

Follow Up Labs

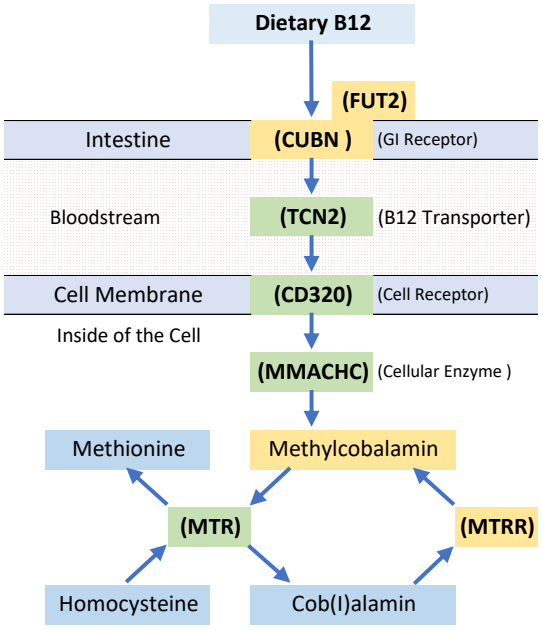
Regular monitoring and follow-up laboratory tests are essential for individuals with variations in the MTHFR gene. These follow-up labs can help assess the effectiveness of dietary and lifestyle interventions, and ensure adequate nutrient levels.

Consider adding serum folate, RBC folate, and homocysteine tests to your yearly labs. Most people feel better when their serum folate levels are above 15 ng/mL.

CORE

B12

Are you getting enough Vitamin B12 (Cobalamin) in the right form? Since your body cannot produce B12, it's crucial to ensure you obtain adequate amounts from your diet or supplements. Vitamin B12 is vital for numerous bodily functions, including neurotransmitter production, energy metabolism, and red blood cell formation. Many people experience significant improvements in well-being by switching to the correct form of B12 based on their genetics or by increasing their intake. Consider incorporating yearly micronutrient testing into your health routine to monitor your B12 levels. Always opt for methylcobalamin, hydroxocobalamin, or adenosylcobalamin supplements, and avoid cyanocobalamin when possible.



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Low B12 Symptoms

Anxiety	Fatigue
Pale Skin	Weakness
Smooth Tongue	Poor Balance
Constipation	Memory loss
Diarrhea	Neuropathy
Heart Palpitations	Tingling Feet
Dizziness	Depression

Foods High in B12

Liver
Fish
Meat
Dairy Products
Eggs
Clams
(Animal Products)

Common B12 Labs

B12, Serum
Urinary MMA
Homocysteine
B12 Binding Capacity

CORE

Intestinal Absorption

Vitamin B12 absorption occurs in the small intestine and is essential for DNA synthesis, red blood cell formation, and neurological health. Key proteins like intrinsic factor and cubilin facilitate this process. Genetic variations, such as those in the CUBN gene, can impact absorption efficiency, influencing dietary and supplementation needs.

Cellular Uptake

Cellular uptake of Vitamin B12 is crucial for its utilization in various bodily functions. Even if blood levels of Vitamin B12 appear normal, genetic variations in the CD320 gene, can impair the transport of B12 into cells, potentially leading to functional deficiencies. Lithium Orotate in low doses has been said to help improve this transport.

Labs & Lab Ranges

The FUT2 variant can cause a false elevation in serum B12 levels. This can result in a 20% false elevation in labs. Normal ranges are 200 to 1080pg/ml. Optimal ranges tend to be 500 to 1080pg/ml. Someone with the FUT2 Variant may require a level close to 600 to feel improvements in mood and energy.

PubMed Research: PMID29040465

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You have a variant in the CUBN gene that may slightly reduce Vitamin B12 absorption. Consider increasing dietary B12 intake or taking a B12 supplement to maintain adequate levels. Injectable B12 could be considered if oral supplements are insufficient.

You have a normal CD320 gene, indicating typical cellular uptake of Vitamin B12. Maintain a diet rich in B12 sources like meat, fish, dairy, and fortified foods. Regular monitoring of your B12 levels is recommended to ensure optimal health.

You carry one copy of the FUT2 variant. This may slightly affect your B12 levels. To ensure accuracy, aim for B12 levels within 540-700 pg/mL. Discuss with your healthcare provider if you need further testing or supplementation. PMID: 29040465

CORE

Methylcobalamin

Methylcobalamin is a naturally occurring, bioactive form of Vitamin B12. It is readily utilized by the body and supports brain health, nerve function, and the methylation cycle. This form is especially beneficial for individuals with MTHFR mutations who may have difficulty converting other forms of B12.

Adenosylcobalamin

Adenosylcobalamin is another bioactive form of Vitamin B12 that is crucial for mitochondrial health. It supports energy production at the cellular level and is essential for the proper function of the Krebs cycle. This form is particularly useful for individuals experiencing fatigue and issues with energy metabolism.

Hydroxocobalamin

Hydroxocobalamin is a naturally occurring form of Vitamin B12 that can be converted into both methylcobalamin and adenosylcobalamin in the body. It has a longer half-life in the bloodstream compared to other forms, making it effective for B12 injections. Hydroxocobalamin is also known for its ability to bind and neutralize cyanide.

Cyanocobalamin

Cyanocobalamin is a synthetic form of Vitamin B12 often found in low-cost supplements and fortified foods. It contains a cyanide molecule, which the body must detoxify and remove. This form is less efficiently converted to active forms (methylcobalamin and adenosylcobalamin) in the body. cyanocobalamin is not recommended.

CORE

You have a slight increased need for methylcobalamin.

If you suffer from fatigue, adenosylcobalamin might be useful.

You have no increased need for Hydroxocobalamin, however it is still a great form of B12 to consider taking.

You have an average ability to use cyanocobalamin. You should still consider using other forms of vitamin B12 when possible.

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Hormones

Hormones play a pivotal role in numerous bodily functions, from metabolism and energy levels to mood and reproductive health. The conversion of T4 to T3, total hormone production by CYP17A1, and the regulation of hormone availability by SHBG are essential processes that ensure your body functions optimally. Genetic variations can significantly impact these processes, influencing your overall hormonal health.

Regular testing and monitoring of hormone levels, alongside a personalized approach to diet and supplementation, can lead to significant improvements in well-being. Consider incorporating regular hormone level testing into your health routine to keep track of your hormonal balance and ensure optimal health.

Thyroid T4 to T3 Conversion

Thyroid T4 to T3 conversion is a critical process in maintaining metabolic balance and overall energy levels. This conversion transforms inactive thyroxine (T4) into the active triiodothyronine (T3). Genetic variations, particularly in the DIO1 gene, can affect the efficiency of this conversion, thereby influencing thyroid function and metabolic rate.

You may have a mild reduction in T4 to T3 conversion. If symptomatic discuss additional T3 testing with your physician. Consuming selenium-rich foods or supplements may support this conversion.

Thyroid — Liver & Kidneys

Thyroxine (T4) → **(IDO1)** → **Triiodothyronine (T3)**

Nutrients That Help with T3 to T4 Conversion

Selenium: Brazil nuts, seafood, meat, eggs
Zinc: Oysters, red meat, poultry, beans, nuts, dairy
Iodine: Iodized salt, seaweed, shrimp, fish
Iron: Red meat, poultry, fish, lentils, beans
Vitamin A: Carrots, sweet potatoes, dark leafy greens

Low Thyroid Symptoms

Fatigue
Weight Gain
Cold Intolerance
Dry Skin & Hair
Hair Loss
Constipation
Depression
Memory Issues
Goiter

Total Hormone Levels

Hormone levels are regulated by a complex interplay of genetic factors and lifestyle choices. The CYP17A1 gene plays an integral role in converting cholesterol into DHEA and subsequent hormones. Some individuals naturally have higher hormone levels than others. This difference can be genetic and influence the need for different supporting nutrients.

You may have increased levels of hormones. You may want to focus on avoiding toxic exposure (PFAAs) and supporting detoxification pathways discussed previously in this report and be careful with supplements like DHEA.

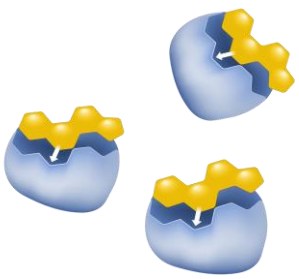
Adrenals, Testes, and Ovaries

Cholesterol & Pregnenolone → **CYP17A1** → **Androgens (DHEA/Testosterone)**, **Estrogens (E1/E2)**, **Cortisol**

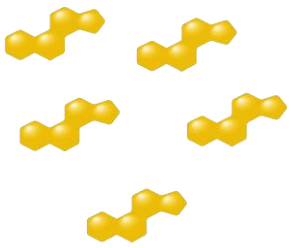
SHBG and Free Hormones

Sex Hormone Binding Globulin (SHBG) regulates the availability of free hormones in the body. Free hormones are those that are not bound to proteins like SHBG and are biologically active, whereas bound hormones are attached to proteins and are not readily available for use by the body.

You likely have normal SHBG levels, which help maintain a balanced level of free hormones in your body.



SHBG Bound Hormones



Free Active Hormones

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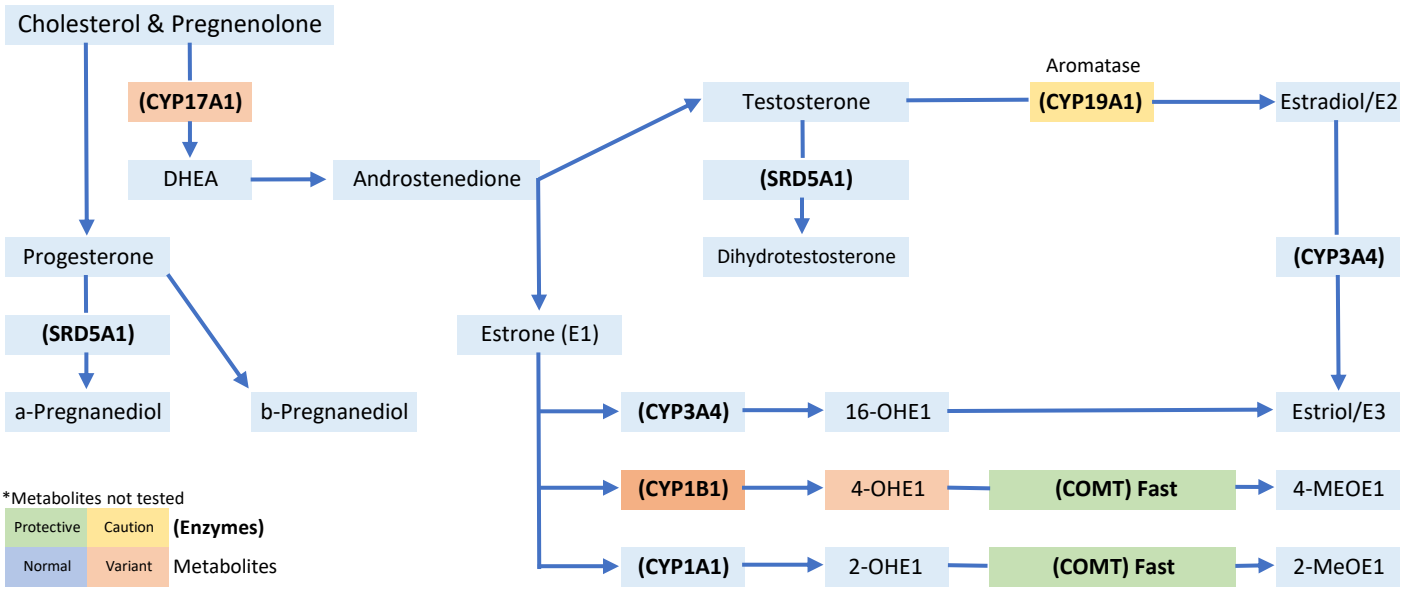
Hormones - Unknown

We are unable to provide sex-specific recommendations in this report because the sex of the individual was not provided, and it is not possible to determine sex solely based on the genetic data available. Hormone metabolism and the effects of genetic variations can differ significantly between men and women. Therefore, accurate sex information is crucial for delivering precise and effective nutritional and health advice. In the absence of this information, generalized hormone recommendations will be provided.



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Catechol Estrogen Detox

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Neurological - Dopamine

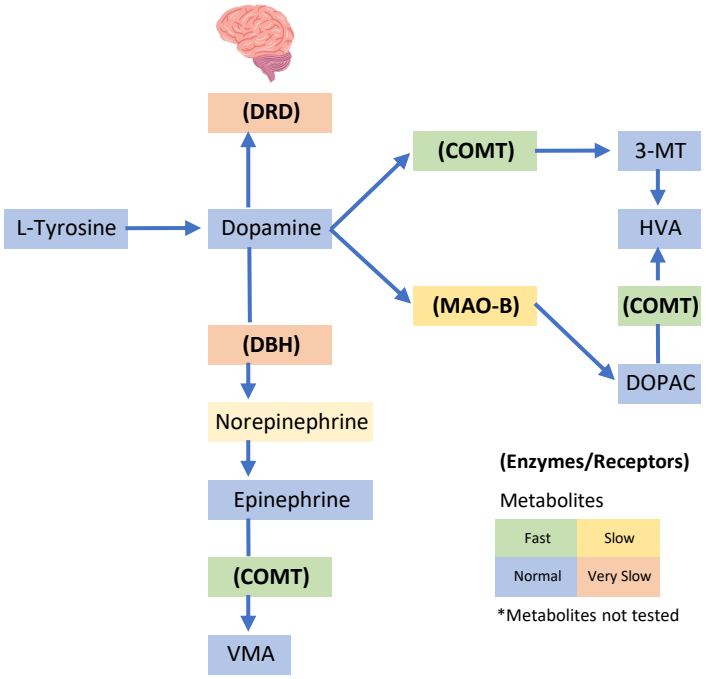
The regulation of dopamine and other catecholamines, such as norepinephrine and epinephrine, is critical for maintaining optimal neurological function and emotional well-being. Several key genes play essential roles in the synthesis, metabolism, and receptor activity of these neurotransmitters. This section focuses on the genetic variations in the COMT, VDR, DBH, and MAO genes, which collectively influence dopamine and catecholamine levels. Understanding these genetic factors can provide insights into individual differences in mood regulation, stress response, cognitive function, and susceptibility to mental health disorders.

COMT (Catechol-O-Methyltransferase)

The COMT gene encodes an enzyme responsible for breaking down dopamine, epinephrine, and norepinephrine. COMT variants affect the enzyme's activity, influencing neurotransmitter levels and impacting mood, cognition, pain tolerance and stress resilience. We use three COMT variants to determine the activity of COMT.

COMT H62H	Wild Type	Slightly Faster
COMT L136L	Wild Type	Slightly Slower
COMT V158M	Wild Type	Faster (Main COMT)

Based on multiple variants, we expect a Fast COMT Activity.



Fast COMT Activity

Fast COMT activity refers to an increased rate of catecholamine metabolism, typically linked to genetic variations in rs4633, rs4818, and rs4680. Individuals with fast COMT activity may have a rapid breakdown of dopamine, epinephrine, and norepinephrine, leading to reduced levels of these neurotransmitters. This can influence mood, cognitive function, and the ability to cope with stress.

High Dopamine	Low Epinephrine	Low Norepinephrine
ADD/ADHD Anxiety Mania Insomnia Addiction Hypersexual	Fatigue Depression Migraines Sleep Issues Restless Leg	Fatigue/Brain Fog Lack of Motivation Focus Issues Sleep Issues Low Blood Pressure Depression Headaches
Support:	**Support:**	**Support:**
Vit. C SAMe	L-Methionine L-Tyrosine	L-Tyrosine Vit. C Copper Balancing

Advanced Neurotransmitter Assessment

Neurotransmitter	Level	Support if Symptomatic
Dopamine:	High	
Dopamine Sensitivity:	Decreased	N/A
DOPAC:	Normal	No Recommendations
Norepinephrine:	Low	L-Tyrosine
Epinephrine	Normal	No recommendations

*These are estimated levels based on genetic tendencies, not actual levels. These results are for educational purposes only.

DBH (Dopamine Beta-Hydroxylase)

The DBH gene is involved in converting dopamine to norepinephrine. Variations in DBH can affect the balance of these neurotransmitters, impacting mood and autonomic functions.

You may have significantly reduced conversion of dopamine to norepinephrine, which can affect stress response, mood regulation, and increase the risk of orthostatic hypotension, depression, anxiety, cognitive impairments, low blood pressure, and fatigue.

DRD2 (Dopamine Receptor D2)

The DRD2 gene encodes the D2 subtype of the dopamine receptor, which is involved in mediating the effects of dopamine in the brain. Variations in this gene can impact reward pathways, motivation, and the risk of addiction.

You may have significantly reduced dopamine receptor D2 density, which can affect dopamine signaling, potentially leading to increased risk of depression, anxiety, cognitive impairments, and substance abuse.

VDR (Vitamin D Receptor)

The VDR gene, particularly the rs731236 (Taq1) polymorphism, affects the body's response to vitamin D, which in turn influences dopamine production and regulation.

You may have significantly altered vitamin D receptor (VDR) function, which can affect dopamine regulation, calcium absorption, bone health, immune function and may lead to an increased risk of vitamin D related conditions and mood disorders.

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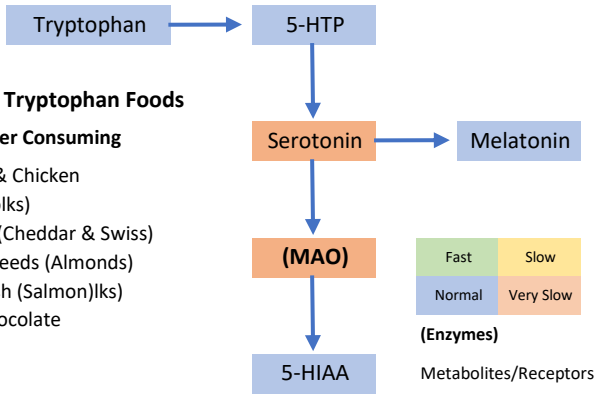
Neurological - Continued

MAO (Catechol-O-Methyltransferase)

Monoamine oxidase (MAO) is a crucial enzyme in the metabolism of neurotransmitters, maintaining the balance of chemical signals in the brain. There are two main types: MAO-A, which primarily breaks down serotonin, norepinephrine, and epinephrine, and MAO-B, which primarily breaks down phenylethylamine and plays a significant role in dopamine metabolism. MAO-A is found in the liver, gastrointestinal tract, and brain, while MAO-B is predominantly in the brain.

MAOA R297R	Homozygous	Faster. Lower Serotonin
MAOA T1410C	Homozygous	Slightly Faster
MAOB	Heterozygous	Intermediate

Very Fast MAO Activity: This is associated with low levels of Serotonin & Major Depressive Episodes. If symptomatic, consider discussing with your physician.



High Tryptophan Foods

***Consider Consuming**

Turkey & Chicken
Eggs (Yolks)
Cheese (Cheddar & Swiss)
Nuts& Seeds (Almonds)
Fatty Fish (Salmon)lks)
Dark Chocolate

Low Serotonin

Anxiety / Depression
Insomnia
Loss of pleasure
Paranoia
Weight Issues
Inner rage

Low PEA

Brain Fog
Depression
Difficulty Paying Attention
Incomplete Thoughts

Advanced Neurotransmitter Assessment

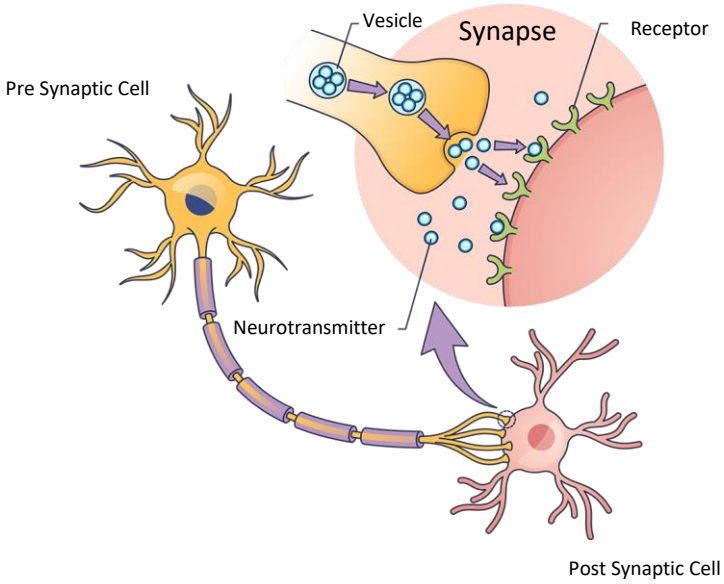
Neurotransmitter	Likely Level	Support if Symptomatic
Serotonin:	Very Low	5-HTP & St. John's Wort
PEA:	Normal	Methylation & L-Theonine

*These are estimated levels based on genetic tendencies, not actual levels.
*Please see a physician if severe symptoms are present.

Oxytocin

Oxytocin, often referred to as the "love hormone" or "social bonding hormone," is a peptide hormone and neuropeptide that plays a significant role in social behaviors, emotional regulation, and interpersonal bonding. Oxytocin influences a wide range of social interactions, including trust, empathy, and bonding between individuals, particularly in parent-child relationships and romantic partnerships. It also helps modulate stress responses and emotional well-being.

You likely have a mildly reduced oxytocin receptor function, which may impact your ability to bond socially and regulate emotions. Prioritizing supportive relationships and seeking social support can help improve your emotional and social well-being.



BDNF

Brain-Derived Neurotrophic Factor (BDNF) supports the survival, growth, and differentiation of neurons during development and throughout adulthood. It is essential for neuroplasticity, which allows the brain to adapt and reorganize itself in response to new experiences, learning, and memory formation. Variations in BDNF levels and activity have been linked to various neurological and psychiatric conditions, including depression, anxiety, and neurodegenerative diseases.

You likely have mildly reduced BDNF levels, slightly impacting neuroplasticity. Engage in high-intensity exercise, consume antioxidant-rich foods like berries and leafy greens, and consider lithium orotate supplementation to support brain health.

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Prevention & Optimal Health

Apolipoprotein E (APOE) is a critical protein involved in lipid metabolism, cholesterol transport, and neuronal repair. It plays a vital role in maintaining the health and function of the brain. The APOE gene exists in three major isoforms: APOE2, APOE3, and APOE4, each associated with different risks for neurodegenerative conditions. APOE4, in particular, is linked to an increased risk of developing Alzheimer's disease and other cognitive impairments. Variations in APOE influence the clearance of amyloid-beta plaques, a hallmark of Alzheimer's disease, as well as neuronal repair mechanisms and synaptic plasticity. Understanding the genetic variations in APOE and their impact on brain function can provide crucial insights into personalized approaches for preventing and managing neurodegenerative diseases, enhancing cognitive resilience, and promoting overall brain health.

APOE

ε2/ε3 - Your genotype indicates you have the ε2/ε3 variant, which is associated with a slightly reduced risk for Alzheimer's disease.

Additional Genes

BDNF	Heterozygous	No Additional Information
SOD1	Heterozygous	No Additional Information
MTHFR C677T	Heterozygous	No Additional Information
CYP17A1	Homozygous	Additional Risk Factor w/ APOE4
TNF	Wild Type	No Additional Information
IL6	Wild Type	No Additional Information

E4 Risk Factors

Alzheimer's Disease
Faster progression of MS
Traumatic Brain Injury
Cardiovascular disease
Unable to detoxify heavy metals

E4 Diet Recommendations

Lowered Carbohydrate intake
Limit Saturated Fat Intake
Eliminate Sugar
Increase Omega 3 (Fish) Intake
Limit Seafood that is high in mercury

E4 Friendly Diets

Mediterranean
Ketogenic
Paleo
Carnivore

E4 Lifestyle Recommendations

Avoid Alcohol & Smoking
Intermittent Fasting
Monitor Homocysteine Levels
Consider Regular Sauna Visits

E4 Supplement Recommendations

DHA >2g/day
Quercetin 1-2g/day
Resveratrol 2g/day
Vit. D3, up to 5,000 Iu/day
Vit. K2 MK7 45-180 ug/day
Lithium Orotate 5mg/day
Extra Virgin Olive Oil
Activated B-vitamins

For more research
PubMed: PMC8073598

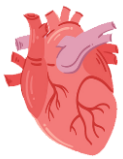
Additional Heart and Circulatory Health

Maintaining cardiovascular health is essential for overall well-being and quality of life. Various genetic factors can influence how our bodies manage cholesterol, blood pressure, and inflammation, all of which play roles in heart and blood vessel function. Understanding these genetic factors can provide valuable insights into personalized approaches for supporting cardiovascular wellness through lifestyle and dietary choices. This section highlights key genetic markers associated with cardiovascular health to help you make informed decisions for maintaining a healthy heart and circulatory system. It is important to discuss these findings with a qualified healthcare practitioner before making any significant changes to your diet, lifestyle, or treatment plan.

ACE	Heterozygous	No Additional Information
PAI-1 4G/5G	Homozygous	Consider using Nattokinase/Lumbrokinase
Factor 5	Wild Type	No Additional Information
Prothrombin	Wild Type	No Additional Information

The ACE gene is involved in the regulation of blood pressure and cardiovascular function. The PAI-1 4G/5G polymorphism can influence the body's ability to regulate blood clot breakdown. Factor V and Prothrombin are essential components of the blood coagulation system. While these genetic markers offer useful information about potential predispositions, it is important to remember that they are only part of a broader picture, and individual health outcomes are influenced by a combination of genetic, environmental, and lifestyle factors.

Consider limiting your salt intake, monitoring your blood pressure, eating an anti-inflammatory diet, and supplementing with Lumbrokinase or Nattokinase to support healthy clotting. Discuss this with your physician & dietician.



Regular Physical Activity: At least 2 days of exercise per week
Weight Management: Healthy weight will reduce your cardiovascular burden
Smoking Cessation: Quitting smoking significantly decreases cardiovascular risks
Regular Health Check Ups: Monitor your blood pressure and glucose levels
Discuss Your Options: Maintain a good relationship with a medical professional

Consultation with Healthcare Provider

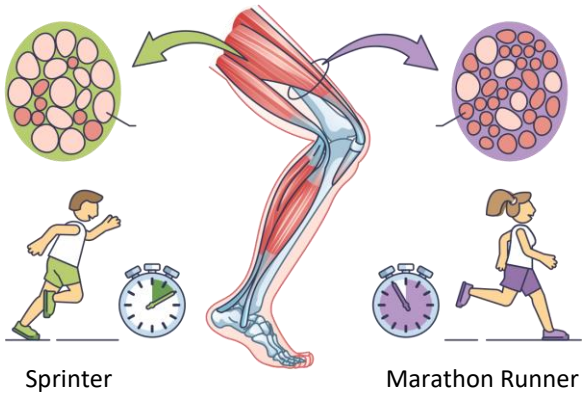
Before starting any supplementation, it is important to consult with a healthcare provider to ensure safety, especially for individuals on anticoagulant or antiplatelet medications.

OPTIMIZE

Fitness Performance

Whether you're aiming to build muscle strength or enhance endurance, understanding the key differences between these fitness aspects is crucial. Our comprehensive guide delves into the genetic factors influencing your potential as a sprinter or endurance athlete, highlighting the role of muscle power and fiber composition. We also explore muscle metabolism, the intricate process your body uses to convert food into energy, essential for both high-intensity bursts and sustained activities. By understanding your ventilatory threshold, VO2 max potential, and muscle fiber types, you can tailor your training to maximize performance. Additionally, we cover altitude performance and the risks of acute mountain sickness, providing insights inffto how your body adapts to various physical challenges. Join us as we unlock the secrets to achieving your peak fitness potential.

Fast Vs Slow Twitch Fibers



Sprinter Marathon Runner

OPTIMIZE

Endurance Potential

Endurance is the ability to sustain activity for extended periods of time. Endurance potential is a product of several factors such as aerobic capacity, fatigue resistance, fuel usage, economy of motion, and other physiological variables.

With normal endurance potential, you balance well between endurance and high-intensity activities. Regular training and conditioning help you maintain and slightly enhance your endurance for moderate aerobic exercises.

OPTIMIZE

Sprint Potential

Sprinting is anaerobic activity characterized by high and quick boost energy which cannot be maintained for extended periods of time. Some athletes are Physiological predisposed to elite sprint potential which has been found to be associated with several gene mutations.

Lower sprint potential indicates a higher proportion of slow-twitch fibers, making explosive, high-speed activities challenging. Focus on improving speed with targeted strength and sprint training.

OPTIMIZE

Peak Muscle Power

Peak muscle power is the maximum output of muscle in a period of time, such as in power lifting or any other activity that requires explosive movements. Several genetic mutations have been associated with increased potential peak muscle power, although actual performance is also dependent on proper training.

With normal endurance potential, you balance well between endurance and high-intensity activities. Regular training and conditioning help you maintain and slightly enhance your endurance for moderate aerobic exercises.

OPTIMIZE

Fast/Slow Twitch

Skeletal muscle has two types, type I (slow twitch) and type II (fast twitch). Slow twitch muscles use energy slowly and evenly for longer lasting performance, such as endurance exercise. Fast twitch muscles use energy more quickly with more powerful force, but for shorter periods of time.

With predominantly slow-twitch muscles, you excel in endurance activities like long-distance running and cycling. These fibers efficiently use oxygen for prolonged muscle contractions, making them ideal for stamina and prolonged effort activities.

OPTIMIZE

VO2 Max

VO2 Max is the measure of the maximum amount of oxygen your body can utilize during exercise. It can be used to test cardiovascular fitness or aerobic endurance. Several genetic mutations have been found to be associated with increased or decreased VO2 Max.

You have a higher VO2 Max, indicating strong oxygen uptake during intense exercise. This provides a major advantage in endurance sports and high-intensity activities, helping you perform at peak levels with proper training.

OPTIMIZE

VO2 Max - Exercise Response

VO2 Max is the measure of the maximum amount of oxygen your body can utilize during exercise. It can be used to test cardiovascular fitness or aerobic endurance. A mutation in the LEP gene has been found to be associated with an increased potential VO2 Max increase with exercise.

You have a higher potential for VO2 Max improvement with exercise. This means you can significantly boost your cardiovascular fitness and endurance through targeted training, giving you a competitive edge in endurance sports.

OPTIMIZE

Ventilatory Threshold

Ventilatory threshold is the point during physical exertion when the rate of breathing increases at a faster rate then oxygen levels and your body starts to rely more on anaerobic respiration to generate energy. A mutation in the ACTN3 gene is associated with Ventilatory threshold being reached at higher or lower speeds, or levels of exertion.

Your ventilatory threshold and respiratory compensation point occur at higher speeds, allowing sustained intense exercise. Leverage this by incorporating high-intensity interval training (HIIT) to maximize performance.

OPTIMIZE

High Altitude Performance

Altitude performance depends on physical and environmental factors like training, acclimation, and endurance potential. Genetic mutations also play a role, influencing altitude performance, susceptibility to mountain sickness, and the ability to acclimate effectively.

You have a moderate risk for acute mountain sickness. While you may experience some symptoms at high altitudes, proper acclimatization, hydration, and a gradual ascent can help mitigate these risks.

OPTIMIZE

OPTIMIZE

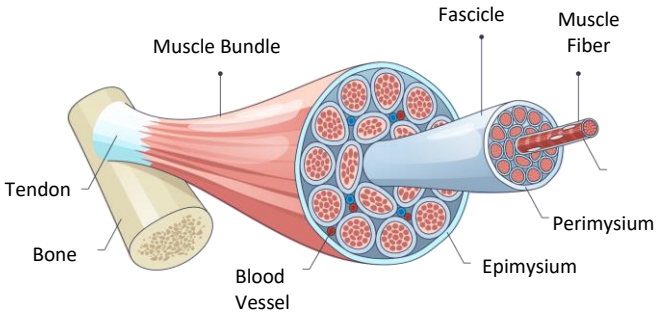
OPTIMIZE

OPTIMIZE

OPTIMIZE

Muscle Injury & Recovery

Understanding muscle health and performance is essential for both athletes and those focused on maintaining overall fitness. This guide explores various aspects of muscle care, including assessing muscle damage through biomarkers like creatine kinase (CK) and myoglobin levels, and managing post-exercise issues such as strength loss and soreness. It provides insights into the prevention and recovery of muscle injuries, with a focus on conditions like hamstring and rotator cuff injuries. The critical topic of exertional rhabdomyolysis is also covered, offering strategies to prevent and manage this serious condition. This information equips you with the knowledge to effectively manage and enhance your muscular system, whether you aim to optimize performance or maintain muscle health.



Muscle injury

Endurance is the ability to sustain activity for extended periods of time. Endurance potential is a product of several factors such as aerobic capacity, fatigue resistance, fuel usage, economy of motion, and other physiological variables.

You have a normal risk of muscle damage or pain after exercise. Follow a balanced fitness regimen, including warm-ups, cool-downs, and recovery practices. Regular stretching and hydration will help maintain muscle health and minimize discomfort.

Hamstring Injury

Hamstring injuries are prevalent in sports requiring sprinting and explosive movements. This section focuses on understanding the anatomy of the hamstrings, common causes of injury, and the best practices for treatment and rehabilitation.

You have an increased risk for hamstring injuries. Focus on strengthening and stretching your hamstrings regularly, and incorporate proper warm-up and cool-down routines to reduce the risk of injury.

Rotator Cuff Injury

Rotator cuff injuries can significantly affect upper body mobility and strength, especially in sports involving overhead motions. In this section, we explore the anatomy of the rotator cuff, typical injury mechanisms, and effective management strategies.

You have an increased risk of rotator cuff tear susceptibility. Focus on strengthening your shoulder muscles, maintaining flexibility, and practicing proper form during activities to reduce the risk of injury.

Muscle Cramping

Muscle cramping can disrupt your workout and daily activities, often occurring without warning. This section delves into the common causes of generalized muscle cramping, including dehydration, electrolyte imbalances, and overexertion.

You have a decreased risk of exercise-associated muscle cramping. Continue with your balanced fitness regimen, and ensure proper hydration and stretching to maintain muscle health and minimize the chance of cramps.

Muscle Damage

Exertional rhabdomyolysis is a serious condition resulting from intense physical activity, leading to the breakdown of muscle fibers and release of their contents into the bloodstream. This section provides a comprehensive overview of the causes, symptoms, and risks associated with exertional rhabdomyolysis.

You have a normal risk of exertional rhabdomyolysis. Continue to maintain a balanced exercise routine, stay hydrated, and ensure proper recovery between workouts. Monitor for any unusual muscle pain and adjust your intensity accordingly to stay safe.

Strength Post Exercise

Experiencing strength loss after exercise is common, especially following intense workouts. This section examines the causes of post-exercise strength loss, including muscle fatigue and microtrauma.

You have an increased risk of strength loss post exercise. Focus on proper nutrition, hydration, and adequate recovery time to help mitigate strength loss. Incorporate gradual progression in your training to build resilience and reduce this risk.

Soreness post exercise

Post exercise soreness can occur due to overexertion and can vary in severity. A mutation in the SLC30A8 gene has been found to be associated with increased and decreased risk of post exercise soreness.

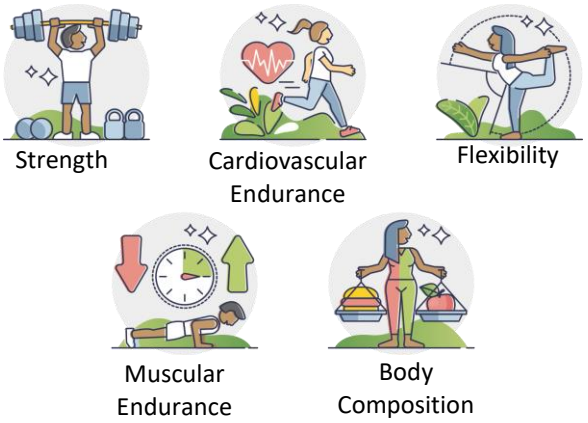
Your genotype is associated with an increased risk of soreness post exercise. Focus on incorporating proper warm-ups, cool-downs, and recovery techniques, such as stretching and hydration, to help mitigate post-exercise soreness.

OPTIMIZE

Exercise Response

Understanding your body's response to exercise is crucial for optimizing health and performance. This section explores how genetic factors influence various aspects of physical activity, including weight loss potential, motivation levels, and physiological reactions like blood pressure and blood sugar regulation. Additionally, it examines your body's response to resistance training, preferences for endurance versus resistance exercise, and overall exercise capacity. By analyzing these genetic insights, you can tailor your fitness approach to better align with your unique biological profile, enhancing your ability to achieve your fitness goals.

Health Benefits of Exercise



OPTIMIZE

Weight Loss & Exercise

Endurance is the ability to sustain activity for extended periods of time. Endurance potential is a product of several factors such as aerobic capacity, fatigue resistance, fuel usage, economy of motion, and other physiological variables.

You have a moderate potential for weight loss and body composition improvement with exercise. With regular and varied workouts, combined with a nutritious diet, you can see significant reductions in body fat and noticeable improvements.

Motivation to Exercise

Motivation can be driven by various factors, including personal health goals, the desire for physical appearance improvements, stress relief, and overall well-being. Setting realistic, attainable goals, tracking progress, and incorporating a variety of workout routines can help keep you motivated.

You are less likely to be motivated to exercise. You often feel too tired or busy. Inconsistency arises from not seeing immediate results, and boredom with the routine makes it hard to stay engaged. Finding enjoyment in exercise could help.

Blood Pressure and Exercise

Regular exercise is crucial for managing blood pressure and promoting cardiovascular health. Physical activity helps lower blood pressure, reduces the risk of hypertension, and improves heart function. Certain exercises, such as aerobic activities and resistance training, are particularly beneficial.

Your response to exercise results in a typical decrease in blood pressure. Continue engaging in regular physical activity and maintaining a healthy lifestyle to support your cardiovascular health.

Blood Sugar and Exercise

Exercise regulates blood sugar levels and manages diabetes effectively. Physical activity impacts glucose metabolism, insulin sensitivity, and overall blood sugar control. Beneficial exercises for stable blood sugar levels include aerobic exercises, strength training, and high-intensity interval training (HIIT).

You may experience a significant improvement in blood sugar and insulin response with exercise. Your body responds well to physical activity, greatly enhancing blood sugar control and insulin sensitivity.

OPTIMIZE

Resistance Training

Resistance training leads to significant physiological adaptations, including increased muscle mass, strength gains, and improved metabolic function. Understanding how your body responds to resistance exercises helps optimize your training regimen for maximum strength and muscle-building benefits.

You have an increased benefit from resistance training. Your body responds exceptionally well, allowing for rapid improvements in strength and muscle mass. Consistent exercise and a well-structured program will maximize your gains and overall fitness.

Endurance vs Resistance Training

Endurance and resistance training both improve vascular function and cardiovascular health. Endurance training enhances blood flow, reduces arterial stiffness, and improves heart efficiency, while resistance training strengthens blood vessels and improves overall vascular health. Each type of exercise offers unique benefits for cardiovascular function.

You have improved vascular function from resistance training over endurance training. Focusing on strength exercises can significantly enhance your cardiovascular health and blood flow efficiency more effectively than endurance activities.

Exercise Capacity

Exercise capacity is the maximum amount of physical exertion an individual can sustain. Factors influencing exercise capacity include cardiovascular fitness, muscle strength, and respiratory efficiency. Assessing and improving exercise capacity through targeted training and lifestyle adjustments enhances overall physical

You have a normal exercise capacity. With regular physical activity, you can maintain and gradually improve your fitness levels. A balanced routine that includes both aerobic and strength training will support your overall health and performance.

Your Genetic Summary

SUMMARY

Pesticides:	You have a normal sensitivity to insecticides. Its's still probably a good idea to avoid exposures.
Inflammation:	You are at a regular risk of inflammation, consistent with the general population.
Fish Oil:	You have a mild increased need for omega-3s (fish oils) for neurological health. Consider eating a diet containing fish.

SUMMARY

Sat. Fats (ApoE):	The sum of your genotype scores is associated with a normalsensitivity to saturated fats.
Dietary Histamine:	You have significant reduction in DAO enzyme activity. You should consider a low histamine diet and supplemental DAO enzymes. (%67 reduction) Highly consider the recommendations on this page.
Cellular Histamine:	We do not anticipate a decrease in HNMT activity.
GSH & Antioxidants:	You are likely to have normal glutathione production, peroxide degradation, and lipid peroxide protection. Maintaining a balanced diet rich in antioxidants should suffice to support your body's detoxification processes.

SUMMARY

SOD:	You may remove superoxide slower than others. supplementing SOD/Catalase supplements, or increasing foods high in manganese.
Vitamin A:	Your BCMO1 gene variants suggest that you have an efficient conversion of beta-carotene to retinol. No specific action is needed.
Vitamin D:	Vitamin D Receptor Sensitivity: Severely reduced. Active Vitamin D Levels : Normal. Vitmin D Transport: Normal .
Vitamin E:	We anticipate that you may have a slightly elevated need for Vitamin E. In addition to maintaining a balanced diet and healthy lifestyle, you might benefit from taking a multivitamin to ensure adequate Vitamin E intake.

SUMMARY

Iron:	You have a normal risk of iron sensitivity. Monitor your yearly labs for low iron.
Phosphatidylcholine:	Due to your significant need, a substantial increase in phosphatidylcholine intake through diet and supplemental PC is strongly recommended. Consult your healthcare provider.
Methylfolate:	You are compound heterozygous for C677T and A1298C variants. This combination results in a 50-60% reduction in MTHFR enzyme activity. You may benefit from the recommendations on this page.
Methyl Sensitivity:	You are likely tolerant to methyl donating nutrients. Take as needed.
Methyl B12:	You have a slight increased need for methylcobalamin.

SUMMARY

COMT:	Based on multiple variants, we expect a Fast COMT Activity.
MAO:	Very Fast MAO Activity: This is associated with low levels of Serotonin & Major Depressive Episodes. If symptomatic, consider discussing with your physician.
Bad Estrogen:	You likely have very high CYP1B1 activity, leading to increased 4-OHE levels, a very reactive estrogen metabolite. This may impact hormone balance and cellular health; consider cruciferous vegetables and supplements like DIM & Ca-D-Glucarate.
Probiotics:	Based on your genetic results, you might benefit from probiotic strains like: Bifidobacterium infantis, Bifidobacterium longum, and Lactobacillus plantarum.
Secreter Status:	You are an FUT2 secretor, which means you secrete certain blood group antigens into bodily fluids. This can influence your gut microbiota and potentially offer some protection against infections.

MaxFunction SNP Report

Gene	RS#	Result	Minor	Associations
ACE	rs4343	Heterozygous (GA)	G-42%	Mild Association with hypertension. (I/D)
AHCY-01	rs819147	Wild Type (TT)	C-32%	No variant found. No predicted impact on Methylation.
APOE	rs429358	Wild Type (TT)	C-7%	ε2/ε3 - Your genotype indicates you have the ε2/ε3 variant, which is associated with a slightly reduced risk for Alzheimer's disease.
APOE	rs7412	Heterozygous (CT)	T-8%	
BCMO1	rs12934922	Wild Type (AA)	T-23%	No variant found. No predicted impact on Vitamin A conversion
BCMO1	rs7501331	Wild Type (CC)	T-22%	No variant found. No predicted impact on Vitamin A conversion
BDNF	rs6265	Heterozygous (CT)	T-19%	Mild association with decreased BDNF secretion.
BHMT c.742G>A	rs3733890	Wild Type (GG)	A-29%	No variant found. No predicted impact on Methylation.
CBS	rs4920037	Heterozygous (GA)	A-13%	Conflicting research. Most likely benign.
CBS A360A	rs1801181	Heterozygous (GA)	A-30%	Possible upregulated CBS if with CBS C699T heterozygous or homozygous.
CBS C699T	rs234706	Heterozygous (GA)	A-20%	Mild association with upregulated CBS enzyme activity and elevated ammonia.
CD320 (TCblR)	rs2336573	Wild Type (CC)	T-5%	No variant found. Normal cellular B12 uptake.
CLOCK	rs1801260	Heterozygous (AG)	G-27%	No reportable associations.
COMT H62H	rs4633	Wild Type (CC)	T-37%	Faster COMT activity.
COMT L136L	rs4818	Wild Type (CC)	G-30%	Associated with reduced activity, increased dopamine and pain sensation.
COMT V158M	rs4680	Wild Type (GG)	A-37%	(Main COMT) Fast COMT gene. Lower dopamine and lower estrogen issues. (Val/Val)
CUBN	rs1801222	Heterozygous (GA)	A-31%	Lowered B12 intestinal absorption. Lowered Serum B12.
CYP17A1	rs743572	Homozygous (GG)	G-39%	Increased estrogen and androgen production. PFAA Sensitivity. Might worsens APoE4 risks.
CYP19A1	Rs10046	No Call ()	C-31%	We were unable to genotype this RS# confidently.
CYP19A1	rs4646	Homozygous (CC)	C-69%	(Aromatase) Increased Estrogen. Evaluate Insulin. Increased Migraine Headaches
CYP1A1	rs1048943	Wild Type (TT)	C-8%	No variant found. Considered the Slower form of CYP1A1
CYP1A2	rs762551	Heterozygous (CA)	C-32%	Intermediate slower caffeine metabolism.
CYP1B1 A119S	rs1056827	Homozygous (AA)	A-30%	Elevated 4-OHE1. Consider Dutch hormone testing. 3x faster Slow COMT compounds risk.
CYP1B1 L432V	rs1056836	Homozygous (GG)	C-42%	Elevated 4-OHE1. Consider Dutch hormone testing. Slow COMT compounds risk. (Val)
CYP27B1	rs10877012	No Call ()	T-29%	We were unable to genotype this RS# confidently.
CYP2C19*17	rs12248560	Heterozygous (CT)	T-22%	Increased enzymatic activity. Possible pharmaceutical interactions. Consult your physician.
CYP2C19*2	rs4244285	Heterozygous (GA)	A-15%	Moderately decreased enzymatic activity. Possible pharmaceutical interactions. Consult physician.
CYP2D6 S486T	rs1135840	Heterozygous (GC)	C-43%	Possible mild increased activity. Potential pharmaceutical interactions. Discuss with your physician.
CYP2D6 T2850C	rs16947	Heterozygous (GA)	A-32%	Possible mild increased activity. Potential pharmaceutical interactions. Discuss with your physician.
CYP2D6*10	rs1065852	Wild Type (GG)	A-21%	Normal Metabolizer
CYP2E1	rs3813867	Wild Type (GG)	C-0.1%	Normal risk of colorectal cancer with red meat consumption
CYP2E1 *6	rs6413432	Wild Type (TT)	A-16%	Normal Metabolizer
CYP2R1	rs10741657	Heterozygous (AG)	A-37%	Mild increased risk of vitamin D deficiency
CYP3A4*1B	rs2740574	Wild Type (TT)	C-23%	Normal Metabolizer
CYP3A5	rs776746	Wild Type (CC)	T-11%	CYP3A4 non expressor/decreased funciton. Common among Caucasians.
DAO(AOC1)	rs1049793	Homozygous (GG)	G-32%	Most influential DAO: Lower DAO production; consider low-histamine diet/Supplemental DAO.
DAO(AOC1)	rs10156191	Heterozygous (CT)	T-31%	Most likely no influence on DAO activity or Histamine intolerance.
DAO(AOC1)	rs1049742	Heterozygous (TC)	T-7%	Most likely no influence on DAO activity or Histamine intolerance.
DAO(AOC1)	rs2052129	No Call ()	G-24%	We were unable to genotype this RS# confidently.
DAOA/DAAO	rs2391191	Heterozygous (GA)	A-37%	Research is inconclusive.
DBH	rs1611115	Homozygous (TT)	T-21%	Higher dopamine levels, ADHD, & other neuro issues.
DHFR	rs1643649	Wild Type (TT)	C-23%	No variant found.

MaxFunction SNP Report

Gene	RS#	Result	Minor	Associations
DIO1	rs2235544	Heterozygous (CA)	A-50%	Mild decrease in T4 to T3 conversion. Might respond better to T3/T4 combined thyroid medication.
DRD2	rs1800497	Homozygous (AA)	A-26%	Lowered dopamine binding sites, mood disorders & altered eating behaviors.
EPHX1	rs1051740	Wild Type (TT)	C-30%	No variant found.
Factor 5	rs6025	Wild Type (CC)	T-1%	No variant found.
FADS1 (D5D)	rs174537	Heterozygous (GT)	T-30%	mild reduction in arachadonic acid, LDL cholesterol & cardiac risks.
FADS2 (D6D)	rs1535	Heterozygous (GA)	G-32%	Mild association with decreased DHA production. Use fish oil high in DHA.
FOLH1	rs202676	No Call ()	G-24%	We were unable to genotype this RS# confidently.
FOLR1	rs2071010	Heterozygous (AG)	A-7%	Mild association with decreased CSF Folate levels
FUT2 W143X	rs601338	Heterozygous (AG)	A-32%	Norovirus susceptibility.
FUT2	rs602662	Heterozygous (GA)	A-48%	Norovirus susceptibility.
FUT2	rs492602	Heterozygous (AG)	G-45%	Norovirus susceptibility.
G6PD	rs1050829	Wild Type (TT)	C-9%	No variant found.
GCLM	rs41303970	Wild Type (GG)	A-18%	No variant found.
GPX1	rs1050450	Wild Type (GG)	A-22%	No variant found.
GPX4	rs713041	Wild Type (CC)	T-40%	No variant found.
GSTM1	rs366631	Wild Type (AA)	G-30%	GSTM1 Deletion. Very Common in Caucasians. Increased risks from toxic exposures.
GSTP1	rs1695	Homozygous (GG)	G-35%	Impaired detoxification & oxidative stress. Avoid toxic exposures. Consider S-acetyl Glutathione.
GSTP1	rs1138272	Wild Type (CC)	T-3%	No variant found. (Secondary)
HFE (C282Y)	rs1800562	Wild Type (GG)	A-1%	Most influential HFE gene. No variant found.
HFE (H63D)	rs1799945	Heterozygous (CG)	G-7%	Carrier for hemochromatosis. Caution with iron supplementation.
HFE (S65C)	rs1800730	Wild Type (AA)	T-1%	Third most influential HFE gene. No variant found.
HNMT	rs11558538	Wild Type (CC)	T-6%	No variant found.
IL-17	rs2275913	Heterozygous (GA)	A-25%	Mild increase in inflammatory and immune-related conditions.
IL-1-β	rs16944	Wild Type (GG)	A-36%	Some association with depression.
IL6	rs1800795	Wild Type (GG)	C-36%	Lower IL6 levles.
IL-6R	rs2228145	Wild Type (AA)	C-39%	No variant found.
IL-8	rs4073	Heterozygous (TA)	A-55%	Normal IL8 levels.
MAOA R297R	rs6323	Homozygous (GG)	G-38%	Faster MAO-a status. Lower Serotonin. See MAO page for details.
MAOA T1410C	rs1137070	Homozygous (TT)	T-45%	Slightly faster MAO-a status. Lower Serotonin. See MAO page for details.
MAOB	rs1799836	Heterozygous (TC)	C-46%	Associated with mild decrease in MAO-B activity.
MAT1A	rs3851059	Wild Type (GG)	A-30%	No variant found.
MMACHC	rs12272669	Wild Type (GG)	A-10%	No variant found. Normal cellular utilization of B12.
MTHFD1	rs2236225	Wild Type (GG)	A-34%	No variant found.
MTHFR C677T	rs1801133	Heterozygous (TC)	T-25%	Mild Methyl-Folate deficiency and Homocysteine elevation.
MTHFR A1298C	rs1801131	Heterozygous (CA)	C-30%	Very Mild reduction in MTHFR activity.
MTHFR G1793A	rs2274976	Wild Type (CC)	T-5%	No variant found.
MTHFS	rs6495446	Wild Type (CC)	T-30%	No variant found.
MTR	rs1805087	Wild Type (AA)	G-22%	No variant found.
MTRR A66G	rs1801394	Heterozygous (GA)	G-36%	Slight B12 deficiency. Methyl-B12 might be advised.
MTRR	rs1532268	Heterozygous (CT)	T-27%	Slight B12 deficiency. Methyl-B12 might be advised.
NAT2	rs1801280	Homozygous (CC)	C-37%	Decreased acetylation. Sensitive to histamine metabolites, consider B, avoid toxins.

MaxFunction SNP Report

Gene	RS#	Result	Minor	Associations
NOS3	rs1799983	Wild Type (GG)	T-18%	No variant found.
NOS3	rs2070744	Heterozygous (CT)	C-23%	Decrease in nitric oxide production.
NQO1	rs1800566	Wild Type (GG)	A-29%	No variant found
OXTR	rs53576	Heterozygous (GA)	A-32%	Mild lack of empathy.
PAI-1 4G/5G	rs1799889	Homozygous (AA)	A-36%	Potentially, Increased cardiovascular risks.
PEMT	rs12325817	Heterozygous (CG)	G-16%	Mild phosphatidylcholine need.
PEMT	rs7946	Homozygous (TT)	C-31%	Phosphatidylcholine deficiency. Consider supplementation. (Secondary PEMT)
PON1 Q192R	rs662	Wild Type (TT)	T-46%	No varirant found.
Prothrombin (F2)	rs1799963	Wild Type (GG)	A-0%	No varirant found.
SCN1a	rs6432860	Wild Type (GG)	A-21%	No varirant found.
SHBG	rs1799941	Wild Type (GG)	A-24%	No varirant found.
SHMT1	rs1979277	Heterozygous (GA)	A-23%	Possible need for folinic acid or pyridoxal 5 phosphate.
SLC19A1 (RFC1)	rs1051266	Heterozygous (CT)	C-49%	Mild reduction in folate transport.
SOD1	rs2070424	Heterozygous (GA)	G-25%	Possible increase in SOD1 activity. This may be protective.
SOD1	rs1041740	Heterozygous (CT)	T-24%	Possible increase in SOD1 activity.
SOD2	rs4880	Homozygous (GG)	G-41%	Decreased antioxidant capacity. Consider Mn & SOD supplementation.
SRD5A1	rs1691053	Wild Type (TT)	G-16%	No varirant found.
SULT1A1	rs1042028	Wild Type (CC)	T-22%	Normal Activity
SUOX(S370S)	rs773115	Wild Type (CC)	G-25%	No varirant found. (Sulfite Oxidase SNP)
TCN2 C776G	rs1801198	Wild Type (CC)	G-42%	No variant found. (B12 Transport Protein)
TNF	rs1800629	Wild Type (GG)	A-9%	No variant found. (Inflammation SNP)
TNF alpha C857T	rs1799724	Wild Type (CC)	T-10%	No variant found. (Inflammation SNP)
UGT2B17 DEL	rs10025771	Wild Type (TT)	C-21%	No variant found. (Normal Urinary Testosterone markers)
VDR TAQ	rs731236	Homozygous (GG)	G-39%	Decreased VDR activation by Vit D. Risk of Vitamin D related conditions. Monitor 1,25-(OH)2D3.
VDR-BSM	rs1544410	Homozygous (TT)	T-30%	Decreased VDR activation by Vit D. Risk of Vitamin D related conditions. Monitor 1,25-(OH)2D3.
VDR-FOK	rs2228570	Heterozygous (GA)	A-33%	Mild decreased VDR activation by Vitamin D.

MaxFood SNP Report

Gene	RS#	Result	Minor	Associations
Diet Section				
FABP2	rs1799883	Wild Type (CC)	C	Noenetic cause for refined carbohydrate sensitivity.
KCTD10	rs10850219	Wild Type (GG)	C	Genetic cause for reduced HDL levels on a high carb diet. Avoid refined carbs.
PLIN	rs894160	Wild Type (CC)	T	No genetic cause for BMI change with carb consumption.
LIPC	rs1800588	Wild Type (CC)	T	No genetic benefit to a high carb diet. Consider low carb for weight loss.
FADS1 (D5D)	rs174537	Heterozygous (GT)	T	No genetic cause for altered Omega 6 levels.
APOA2	rs5082	Heterozygous (AG)	G	Genetic reason to consume less than 45% of calories from fat.
FABP2	rs1799883	Wild Type (CC)	C	Genetic cause for saturated fat sensitivity. See Fat page for details.
FABP2	rs1799883	Wild Type (CC)	C	No genetic cause for higher fatty acids in the blood stream when eating fat.
FABP2	rs1799883	Wild Type (CC)	C	No genetic cause for higher triglycerides.
ADIPOQ 11391 G	rs17300539	Wild Type (GG)	A	Genetic reason to avoid a high fat diet.
PPARG	rs1801282	Heterozygous (CG)	G	Genetic reason to consume more monounsaturated fats.
ADIPOQ 11391 G	rs17300539	Wild Type (GG)	A	No genetic reason to consume extra monounsaturated fats.
PPARG	rs1801282	Heterozygous (CG)	G	No genetic reason to consume extra polyunsaturated fats.
APOA2	rs5082	Heterozygous (AG)	G	Possible altered lipid metabolism
Vitamin Risks				
MTHFR C677T	rs1801133	Heterozygous (TC)	T	Genetic cause for Folate deficiency.
MTHFR A1298C	rs1801131	Heterozygous (CA)	C	Genetic cause for Folate deficiency.
BCMO1	rs12934922	Wild Type (AA)	T	No genetic cause for Vitamin A deficiency.
BCMO1	rs7501331	Wild Type (CC)	T	No genetic cause for Vitamin A deficiency.
MTHFR C677T	rs1801133	Heterozygous (TC)	T	Genetic cause for B2 deficiency.
NBPF3	rs4654748	Wild Type (CC)	T	Genetic cause for Vitamin B6 deficiency.
SLC23A1	rs33972313	Wild Type (CC)	T	No genetic cause for Vitamin C deficiency.
GC	rs2282679	Wild Type (TT)	G	No genetic cause for Vitamin D deficiency.
Intragenic	rs12272004	Wild Type (CC)	A	Genetic cause for Vitamin E deficiency.
Food Intolerances				
CCR3	rs6441961	Heterozygous (CT)	T	Genetic cause for gluten intolerance. See Food Sensitivity page for details.
HLA-DQ2.5	rs2187668	Wild Type (CC)	C	No genetic cause for gluten intolerance.
IL21	rs13119723	Wild Type (AA)	T	No genetic cause for gluten intolerance.
IL21	rs6822844	Wild Type (GG)	G	No genetic cause for gluten intolerance.
MYO9B	rs2305764	Heterozygous (GA)	T	Genetic cause for gluten intolerance. See Food Sensitivity page for details.
MCM6	rs4988235	Wild Type (AA)	A	Likely to tolerate lactose into adulthood.
HLA-DQ	rs9275596	Homozygous (CC)	C	Genetic cause for peanut allergy. Test serum IgE or patch test.
APOA2	rs5082	Heterozygous (AG)	G	Mild association with increased BMI with dairy consumption.
Disease Risks				
MYO9B	rs2305764	Heterozygous (GA)	A	Genetic cause for GI diseases. See Food Sensitivity page for details.

MaxFood SNP Report

Gene	RS#	Result	Minor	Associations
Eating Habits				
FTO	rs8050136	Homozygous (AA)	A	No genetic cause for increased appetite.
MC4R	rs17782313	Heterozygous (CT)	C	Genetic cause of consuming excessive calories. Watch portion control.
MC4R	rs17782313	Heterozygous (CT)	C	Genetic cause of consuming excessive fat from calories. Count macros.
ANKK1/DRD2	rs1800497	Homozygous (AA)	A	Genetic cause for addictive eating behavior. Consult a counselor if needed.
FTO	rs9939609	Heterozygous (AT)	A	Genetic cause for increased appetite. Watch portion control.
FTO	rs9939609	Heterozygous (AT)	A	No genetic cause for leptin resistence.
MC4R	rs17782313	Heterozygous (CT)	C	No genetic cause of increased desire for snacking.
FTO	rs9939609	Heterozygous (AT)	A	No genetic cause of binge or emotional eating.
FTO	rs9939609	Heterozygous (AT)	A	No genetic cause of binge or emotional eating.
TAS2R38	rs713598	Homozygous (GG)	G	Genetic cause for inability to taste bitter foods.
Obesity & Weight loss				
ADRB3	rs4994	Heterozygous (AG)	G	No genetic cause for higher BMI. Eat according to Carb page.
FTO	rs1558902	Homozygous (AA)	A	Genetic cause for obesity. Eat according to Carb page.
MC4R	rs17782313	Heterozygous (CT)	C	Genetic cause for obesity. Eat according to Carb page.
ITGB2	rs235326	Homozygous (GG)	G	Genetic cause for obesity when eating Western Diet. Eat according to Carb page.
ADIPOQ	rs17300539	Wild Type (GG)	A	No genetic cause of obesity. Eat according to Carb page.
APOA2	rs5082	Heterozygous (AG)	G	No associations.
FTO	rs9939609	Heterozygous (AT)	A	Genetic cause for obesity. Eat according to Carb page.
FTO	rs8050136	Homozygous (AA)	A	No genetic cause for inability to lose fat with exercize.
FTO	rs16945088	Wild Type (AA)	G	No genetic cause for inability to lose weight.
PPM1K	rs1440581	Heterozygous (CT)	C	Genetic cause for inability to lose weight and control insulin with diet. Exercise.
ADIPOQ	rs17300539	Wild Type (GG)	A	Genetic cause for weight gain after dieting. See Carb page for ideal diet.
PPARG	rs1801282	Heterozygous (CG)	G	No genetic cause for inability to lose weight with diet.
ACSL5	rs2419621	Wild Type (CC)	T	Genetic cause for weight loss with diet alone. See Carb page for ideal diet.
PLIN	rs894160	Wild Type (CC)	T	Genetic cause for fat loss with calorie restricted diet. Reduce caloried by 10%.
PLIN	rs894160	Wild Type (CC)	T	Genetic need for time-restricted eating. Do not eat past 6pm for weight loss.
Blood Sugar & Diabetes				
IRS1	rs2943641	Homozygous (TT)	T	Genetic cause for elevated blood sugar/diabetes. Avoid refined carbohydrates.
ADIPOQ 11391 G	rs17300539	Wild Type (GG)	A	Genetic cause for elevated blood sugar/diabetes. Avoid refined carbohydrates.
PPARG	rs1801282	Heterozygous (CG)	G	Genetic cause for elevated blood sugar/diabetes. Avoid refined carbohydrates.
ADRB2	rs1042714	Heterozygous (GC)	G	No genetic cause for diabetes/insulin issues.
FTO	rs8050136	Homozygous (AA)	A	No genetic cause for diabetes/insulin issues.
FTO	rs9939609	Heterozygous (AT)	A	Genetic cause for elevated blood sugar/diabetes. Avoid refined carbohydrates.
PPARG	rs1801282	Heterozygous (CG)	G	No genetic cause for diabetes/insulin issues.
ADIPOQ 11391 G	rs17300539	Wild Type (GG)	A	Genetic cause for obesity and Type II Diabetes.
Blood Lipids				
FADS1 (D5D)	rs174537	Heterozygous (GT)	T	Genetic cause for elevated cholesterol. Test VLDL and Triglycerides yearly.
KCTD10	rs10850219	Wild Type (GG)	C	Genetic cause for low HDL. Test yearly.
LIPC	rs1800588	Wild Type (CC)	T	normal LDL triglycerides
FADS1 (D5D)	rs174537	Heterozygous (GT)	T	increased benefit from fish oil supplementation

MaxFitness SNP Report

Gene	RS#	Result	Minor	Associations
Muscle Performance				
ADRB3	rs4994	Heterozygous (AG)	A	Genetic cause for elite endurance athletic ability.
NRF2	rs7181866	Wild Type (AA)	G	No genetic cause for elite endurance athletic ability.
PPARGC1A	rs8192678	Wild Type (CC)	T	Genetic cause for elite endurance athletic ability.
ADRB2	rs1042713	Wild Type (GG)	A	No genetic cause for elite endurance athletic ability.
GABPB1 (NRF2)	rs12594956	Heterozygous (CA)	A	Genetic cause for endurance athletic ability.
GABPB1 (NRF2)	rs8031031	Wild Type (CC)	T	No genetic cause for endurance athletic ability.
LIPC	rs1800588	Wild Type (CC)	T	Genetic cause for enhanced benefit from endurance training.
LPL	rs328	Wild Type (CC)	G	Genetic cause for enhanced benefit from endurance training.
PPARD	rs2016520	Homozygous (TT)	T	Genetic cause for enhanced benefit from endurance training.
ACTN3	rs1815739	Homozygous (TT)	T	Potential for impaired muscle performance. Likely endurance athlete.
AMPD1	rs17602729	Wild Type (GG)	A	No genetic cause for muscle cramping post exercise.
SLC30A8	rs13266634	Heterozygous (CT)	T	No genetic cause for post exercise strength loss and soreness.
MSTN	rs1805086	Wild Type (TT)	C	No genetic cause for lower peak muscle power.
VO2Max				
GABPB1 (NRF2)	rs12594956	Heterozygous (CA)	A	Genetic cause for higher VO2 Max.
GABPB1 (NRF2)	rs8031031	Wild Type (CC)	T	No genetic cause for higher VO2 Max.
PPARGC1A	rs8192678	Wild Type (CC)	T	Genetic cause for lower baseline VO2 Max.
NRF2	rs7181866	Wild Type (AA)	G	No genetic cause for higher VO2 Max.
Weight loss				
LPL	rs328	Wild Type (CC)	G	No genetic cause for greater fat loss in response to exercise.
FTO	rs8050136	Homozygous (AA)	A	Genetic cause for greater fat loss in response to exercise.
INSIG2	rs7566605	Heterozygous (GC)	G	No genetic cause for less weight loss with exercise.
LEP	rs7799039	Heterozygous (GA)	A	No genetic cause for greater fat loss and lower BMI with exercise.
FTO	rs1121980	Homozygous (AA)	A	Genetic cause for obesity with inactivity. Exercise at least 30 minutes daily.
Resistance Training				
INSIG2	rs7566605	Heterozygous (GC)	G	No genetic cause for less benefits with resistance training.
IL15	rs1057972	Heterozygous (TA)	T	Genetic cause for more strength building with resistance training.
IL15RA	rs2296135	Wild Type (AA)	C	No genetic cause for more strength building with resistance training.
Cardiovascular and Injury Risks				
PPARD	rs2016520	Homozygous (TT)	T	No genetic cause for increased HDL with exercise.
NOS3	rs2070744	Heterozygous (CT)	T	Genetic cause for regulated blood pressure with exercise.
EDN1	rs5370	Heterozygous (GT)	T	No genetic cause for increased blood pressure with exercise if out of shape.
LIPC	rs1800588	Wild Type (CC)	T	No genetic cause for insulin sensitivty in response to exercise.
CCL2	rs1024611	Wild Type (AA)	G	No genetic cause for exercise induced ischemia.
ADRB2	rs1042714	Heterozygous (GC)	C	No genetic cause for exercise induced idiopathic venous thrombosis.
LEPR	rs1137101	Homozygous (GG)	G	Genetic cause for exercise induced ischemic heart disease.
GDF5	rs143383	Homozygous (AA)	A	Genetic cause for exercise induced osteoarthritis.
MMP3	rs679620	Heterozygous (CT)	C	No genetic cause for exercise induced Achilles Tendinopathy.

MaxFitness additional SNP Report

BDKRB2	rs1799722	Heterozygous (TC)	T	Not Available
ACE	rs1799752	Wild Type (AA)	del	Not Available
CNR2	rs2501431	Heterozygous (AG)	A	Not Available
COL5A1	rs12722	Wild Type (CC)	T	Not Available
HIF1A	rs11549465	Wild Type (CC)	T	Not Available
IGF2	rs680	Heterozygous (TC)	A	Not Available
IGF2BP2	rs4402960	Heterozygous (GT)	T	Not Available
LPL	rs320	Heterozygous (GT)	G	Not Available
MMP3	rs650108	Wild Type (GG)	A	Not Available
MPP7	rs1937810	Wild Type (TT)	C	Not Available
MSTN : Intron Vari	rs11333758	Homozygous (TT.TTT)	TT	Not Available
NFIB	rs13286037	Heterozygous (TA)	A	Not Available
PPARD	rs2267668	Homozygous (AA)	A	Not Available
EDN1*	rs2071942	Heterozygous (AG)	A	Not Available