TEST 1755120660283

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TABLE OF CONTENTS

HOW TO READ THIS REPORT

TRAIT: A unique characteristic or process that is controlled by genetic factors. Examples include vitamin D levels, body weight, food sensitivities, and response to exercise.

SNP (SINGLE NUCLEOTIDE POLYMORPHISM): Differences in a single DNA building block that, along with the environment, influence a person's traits

RISK VARIANT: Specific genetic variations where a dietary or lifestyle recommendation may improve health.

PATIENT VARIANT: Which of the different genetic options a person has.

PATIENT RESULT: Results will fall into 1 of 3 categories: Consider Action, Enhanced Benefit, or No Action. "Consider Action"appears for traits where diet and lifestyle recommendations that may improve health. "Enhanced Action"appears for traits where a dietary or lifestyle factor may lead to greater health benefits. "No Action"appears for traits that are not associated with increased needs

SCIENTIFIC RATING: Level of scientific evidence supporting the associated effect. 5 is the highest level of evidence, 1 is the lowest (see Scientific Rating breakdown below).

IMPLICATIONS: Details the impact of specific traits on the body.

DIET & LIFESTYLE RECOMMENDATIONS: Nutrition advice and behavior changes that may provide a health benefit based on an individual's results.

SCIENTIFIC RATING BREAKDOWN

★★★★★	Based on a study of 5000 or more subjects; findings have been replicated in at least 1 additional study.
★★★★☆	Based on a study of 2000-5000 or more subjects; findings have been replicated in at least 1 additional study.
★★★☆☆	Based on a study of 800-2000 or more subjects; findings have been replicated in at least 1 additional study.
★★☆☆☆	Based on a study of 200-8000 subjects without replication; or 1 smaller human study (> 200 subjects) with findings that have been replicated in at least 1 additional small study.
★☆☆☆☆	Based on 1 smaller study without replication.

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GENETIC REPORT SUMMARY

This summary highlights key findings of your traits where you may consider actions to improve your health with diet and lifestyle recommendations.

HIGH PRIORITY ACTIONS

Trait	Result	Scientific Rating	Actionable SNPs
Vitamin A (Retinol)	Consider Action	1/5 1/5	BCMO1 (rs7501331) BCMO1 (rs12934922)
Vitamin B6 (Pyridoxine)	Consider Action	1/5 3/5	CBS (rs234706) NBPF3 (rs4654748)
Folate	Consider Action	5/5 5/5	MTHFR C677T (rs1801133) MTHFR A1298C (rs1801131)
Choline	Consider Action	3/5 2/5	PEMT (rs7946) MTHFD1 (rs2236225)
Vitamin B12 (Cobalamin)	Consider Action	3/5 2/5 4/5 2/5	TCN2 (rs1801198) MTR (rs1805087) FUT2 (rs602662) MTRR (rs1801394)
Vitamin D	Consider Action	5/5 5/5 5/5	GC (rs2282679) DHCR7 (rs12785878) CYP2R1 (rs10741657)
Vitamin E (Alpha-tocopherol)	Consider Action	5/5	Intergenic (rs12272004)
Iron Overload	Consider Action	5/5 5/5	HFE (rs1800562) HFE (rs1799945)
Zinc	Consider Action	4/5	SLC30A8 (rs11558471)
Omega-3 Fatty Acids	Consider Action	5/5 4/5 4/5	FADS1 (rs174546) FADS1 (rs174537) FADS1 (rs174547)
Antioxidant Enzymes	Consider Action	5/5 4/5 5/5	SOD2 (rs4880) NQO1 (rs1800566) GPx1P1 (rs1050450)
Environmental Toxins	Consider Action	2/5	GSTP1 (rs1695)
Estrogen Metabolism	Consider Action	2/5	COMT (rs4680)
Caffeine Metabolism	Consider Action	2/5	CYP1A2 (rs762551)
Eating Between Meals	Consider Action	5/5	MC4R (rs17782313)
Protein Intake	Consider Action	5/5	FTO (rs9939609)
Saturated Fat Response	Consider Action	5/5	APOA2 (rs5082)
Adiponectin Levels	Consider Action	5/5	ADIPOQ (rs17366568)
Monounsaturated Fat Response	Consider Action	4/5	PPARG (rs1801282)

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Trait	Result	Scientific Rating	Actionable SNPs
Response to Saturated Fat	Consider Action	2/5	ACE (rs4343)
Salt Sensitivity	Consider Action	2/5	AGT (rs699)
C-reactive Protein Level	Consider Action	5/5	CRP (rs1205)
Caffeine Metabolism	Consider Action	4/5	CYP1A2 (rs762551)
Paraoxonase-1 (PON1) Activity	Consider Action	3/5	PON1 (rs662)
HDL Cholesterol Level	Consider Action	4/5	LIPC (rs1800588)
Coenzyme Q10 Levels	Consider Action	1/5	SLCO1B1 (rs4149056)
Histamine Metabolism	Consider Action	2/5	AOC1 (rs10156191)
Processed Meat Sensitivity	Consider Action	4/5	GATA3 (rs4143094)
Microbial Balance in the Stomach	Consider Action	2/5	TLR4 (rs4986790)
Microbial Balance in the Intestine	Consider Action	2/5	FUT2 (rs601338)
Executive Function	Consider Action	3/5	COMT (rs4680)
Stimulant Sensitivity	Consider Action	2/5	COMT (rs4680)
Serotonin Production	Consider Action	2/5	TPH2 (rs4570625)
Brain-Derived Neurotrophic Factor	Consider Action	1/5	BDNF (rs6265)
Dopamine Receptor Function	Consider Action	2/5 2/5 4/5 2/5	DRD2 (rs6277) DRD2 (rs2283265) DRD2 (rs1076560) ANKK1-DRD2 (rs1800497)
Cannabis Response	Consider Action	3/5	FAAH (rs324420)
IL-6 Activation	Consider Action	2/5	IL-6 (rs1800795)
TNF-alpha Activation	Consider Action	2/5	TNF (rs1800629)
Vitamin A (Retinol)	Consider Action	1/5 1/5	BCMO1 (rs7501331) BCMO1 (rs12934922)
Vitamin D	Consider Action	5/5 5/5 5/5	GC (rs2282679) DHCR7 (rs12785878) CYP2R1 (rs10741657)
Microbial Balance in the Intestine	Consider Action	2/5	FUT2 (rs601338)
Tendon or Ligament Injury	Consider Action	2/5 4/5	COL5A1 (rs12722) COL1A1 (rs1800012)
Achilles Tendon Injury	Consider Action	4/5	MMP3 (rs679620)
Exercise-related Fatigue	Consider Action	2/5	AMPD1 (rs17602729)
Muscle Soreness	Consider Action	2/5	ACTN3 (rs1815739)

Trait	Result	Scientific Rating	Actionable SNPs
Glucose Metabolism	! Consider Action	★★★★★ 5/5 ★★★★★ 5/5	TCF7L2 (rs7903146) ADRA2A (rs553668)

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TRAITS AND TRAIT CATEGORIES

(!) = **Consider Action**

» = **Enhanced Benefit**

P = **Polygenic Score**

Vitamins, Minerals & Omega-3s

Vitamin A (Retinol)	(!)
Vitamin B2 (Riboflavin)	»
Vitamin B6 (Pyridoxine)	(!)
Folate	(!)
Choline	(!)
Vitamin B12 (Cobalamin)	(!)
Vitamin C (Ascorbic Acid)	
Vitamin D	(!)
Vitamin E (Alpha-tocopherol)	(!)
Iron Overload	(!)
Zinc	(!)
Omega-3 Fatty Acids	(!)

Detoxification

Antioxidant Enzymes	(!)
Environmental Toxins	(!)
Estrogen Metabolism	(!)
Caffeine Metabolism	(!)

Glucose Metabolism

Glucose Metabolism	(!)

Weight Management

Eating Between Meals	(!)
Protein Intake	(!)
Saturated Fat Response	(!)
Adiponectin Levels	(!)
Monounsaturated Fat Response	(!)

Cognitive Health and Memory

Executive Function	(!)
Stimulant Sensitivity	(!)
Serotonin Production	(!)
Brain-Derived Neurotrophic Factor	(!)
Dopamine Receptor Function	(!)
Cannabis Response	(!)

Immune Health

IL-6 Activation	(!)
TNF-alpha Activation	(!)
Vitamin A (Retinol)	(!)
Vitamin C (Ascorbic Acid)	
Vitamin D	(!)
Selenium	
Microbial Balance in the Intestine	(!)
IL-4 Activation	
IL-6 Receptor Activation	
IL-17a Activation	

Energy & Fitness

Strength & Power	
Endurance	
Tendon or Ligament Injury	(!)
Achilles Tendon Injury	(!)
Endurance Potential	»
Aerobic Capacity	»
Exercise-related Fatigue	(!)
Body Fat and Exercise	»
Muscle Soreness	(!)
Glucose Response to Exercise	»

Cardiovascular Health

Response to Saturated Fat	(!)
Salt Sensitivity	(!)
C-reactive Protein Level	(!)
Caffeine Metabolism	(!)
Blood Flow and Exercise	
Paraoxonase-1 (PON1) Activity	(!)
HDL Cholesterol Level	(!)
HDL Cholesterol and Exercise	
Coenzyme Q10 Levels	(!)

Gastrointestinal Health	
	Histamine Metabolism
	Lactose Intolerance
	Processed Meat Sensitivity
	Microbial Balance in the Stomach
	Microbial Balance in the Intestine

GENE ANALYSIS SUMMARY

GENETIC REPORT : VITAMINS, MINERALS & OMEGA-3S

Vitamin A (Retinol)

Consider Action

A nutrient that maintains healthy vision, growth, cell growth, reproduction, and immune system function.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
BCMO1 (rs7501331)	CT,TT	CT
BCMO1 (rs12934922)	AT,TT	AA

IMPLICATIONS

Individuals with your genotype may have a reduced capacity to convert beta-carotene to vitamin A (retinol). This may increase the need for directly consuming vitamin A.

DIET & LIFESTYLE RECOMMENDATIONS

You should eat more foods with vitamin A, such as organ meats (liver, kidney, etc.), eggs, cod liver oil, and dairy products. If these foods are not part of your regular diet, you may benefit from a supplement.

Vitamin B2 (Riboflavin)

Enhanced Benefit

A nutrient that supports energy production by helping to break down the carbohydrates, proteins, and fats in the food you eat and supports healthy blood vessel function.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
MTHFR C677T (rs1801133)	TT	TT

IMPLICATIONS

Individuals with your genotype are more likely to respond well to vitamin B2 (riboflavin) supplementation.

DIET & LIFESTYLE RECOMMENDATIONS

Foods that contain riboflavin (vitamin B2) should be part of your diet. Good sources include leafy green vegetables, lean meats, eggs, and dairy products. If these foods are not part of your regular diet, you may benefit from a supplement.

Vitamin B6 (Pyridoxine)

Consider Action

A nutrient that supports nervous system health.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
CBS (rs234706)	CT,TT	CT
NBPF3 (rs4654748)	CT,CC	TT

IMPLICATIONS

Individuals with your genotype are more likely to have lower vitamin B6 (pyridoxine) levels.

DIET & LIFESTYLE RECOMMENDATIONS

You should eat foods that are rich in vitamin B6, including beans, whole grains, meat, eggs, and fish. If these foods are not part of your regular diet, you may benefit from a supplement.

Folate

Consider Action

A vitamin that supports healthy brain function and growth of red blood cells. This nutrient is critical during early pregnancy to support the development of the brain and spine.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
MTHFR C677T (rs1801133)	CT,TT	TT
MTHFR A1298C (rs1801131)	AC,CC	CC

IMPLICATIONS

Individuals with your genotype have a reduced capacity to convert folic acid and other precursors to its activated form, folate.

DIET & LIFESTYLE RECOMMENDATIONS

You should eat plenty of leafy green vegetables and legumes (like beans, lentils, chickpeas, and peanuts) which provide folate in a form the body can easily use. If these foods are not part of your regular diet, you may benefit from a supplement.

Choline

Consider Action

A nutrient that supports mental health and liver function.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
PEMT (rs7946)	AA,AG	AA
MTHFD1 (rs2236225)	AA,AG	GG

IMPLICATIONS

Individuals with your genotype may have a reduced capacity for choline production.

DIET & LIFESTYLE RECOMMENDATIONS

You should include choline-rich foods in your diet, such as lean meats, poultry, fish, dairy products, and eggs. Kidney beans, mushrooms, and quinoa are also good sources of choline. If these foods are not part of your regular diet, you may benefit from a supplement.

Vitamin B12 (Cobalamin)

Consider Action

A nutrient that supports red blood cell production, energy production, nerve health, and DNA production.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
TCN2 (rs1801198)	CG,GG	CG
MTR (rs1805087)	GG,AG	GG
FUT2 (rs602662)	GG,AG	GG
MTRR (rs1801394)	GG,AG	GG

IMPLICATIONS

Individuals with your genotype may have a lower capacity to absorb, utilize and/or transport vitamin B12 (cobalamin) to parts of the body that need it.

DIET & LIFESTYLE RECOMMENDATIONS

Foods containing vitamin B12 should be part of your regular diet. Good sources include lean meats, fish, dairy products, and eggs. If these foods are not part of your regular diet, you may benefit from a supplement.

Vitamin D

Consider Action

A nutrient that maintains strong bones and supports immune system function.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
GC (rs2282679)	GT,GG	GT
DHCR7 (rs12785878)	GT,GG	TT
CYP2R1 (rs10741657)	AG,GG	AA

IMPLICATIONS

Individuals with your genotype are more likely to have increased vitamin D requirements.

DIET & LIFESTYLE RECOMMENDATIONS

You should eat foods that contain vitamin D such as mushrooms, fish, and lean pork. If these foods are not part of your regular diet, you may benefit from a supplement. Sunlight is another source of vitamin D. In small amounts, regular sunlight exposure can help boost your vitamin D levels.

Vitamin E (Alpha-tocopherol)

Consider Action

A nutrient that supports healthy blood vessel function.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
Intergenic (rs12272004)	CC	CC

IMPLICATIONS

Individuals with your genotype may have slightly lower levels of circulating vitamin E (alpha-tocopherol).

DIET & LIFESTYLE RECOMMENDATIONS

Your diet should include foods that are rich in vitamin E, such as sunflower seeds, almonds, avocados, and spinach. If these foods are not part of your regular diet, you may benefit from a supplement.

Iron Overload

Consider Action

Iron is a mineral that is required for carrying oxygen in the blood. Levels should be kept in check to prevent excess iron from building up in your body.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
HFE (rs1800562)	AG,AA	CC
HFE (rs1799945)	CG,GG	CC

IMPLICATIONS

Individuals with your genotype are more likely to have elevated blood iron levels.

DIET & LIFESTYLE RECOMMENDATIONS

You may need to limit or avoid iron-rich foods to keep iron levels within a healthy range.

Zinc

Consider Action

A nutrient that plays a vital role in immune system function and energy production.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
SLC30A8 (rs11558471)	AG,AA	AG

IMPLICATIONS

Individuals with your genotype are more likely to have increased zinc requirements.

DIET & LIFESTYLE RECOMMENDATIONS

Your diet should include foods that are rich in Zinc, such as Oysters; Crab; Fish; Lean beef; Lean pork; Low-fat yogurt; Pumpkin seeds; Almonds If these foods are not part of your regular diet, you may benefit from a supplement.

Omega-3 Fatty Acids

Consider Action

Healthy fats that support brain, skin, and joint health.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
FADS1 (rs174546)	CT,TT	CT
FADS1 (rs174537)	GT,TT	GT
FADS1 (rs174547)	CT,CC	CC

IMPLICATIONS

Individuals with your genotype may have a reduced capacity to convert omega-3 fatty acid precursors (e.g. linolenic acid from flaxseed oil and other plant sources) to active omega-3 fatty acids (EPA and DHA).

DIET & LIFESTYLE RECOMMENDATIONS

Your diet should include cold-water fish, such as salmon and mackerel, that provide activated omega-3 fatty acids the body can easily use. Plant sources with omega-3, such as nuts, seeds, and seed oils, may not be enough. If these foods are not part of your regular diet, you may benefit from a supplement.

GENETIC REPORT : DETOXIFICATION

Antioxidant Enzymes

Consider Action

These molecules help to protect the body's cells from free radicals, which come from the environment and are produced during cell energy production.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
SOD2 (rs4880)	AG,GG	AG
NQO1 (rs1800566)	CT,TT	TT
GPx1P1 (rs1050450)	CT,TT	CC

IMPLICATIONS

Superoxide dismutase 2 (SOD2) is an antioxidant enzyme that detoxifies superoxide to prevent harmful levels from accumulating. Your genotype is associated with reduced SOD2 function. NQO1 is an enzyme that detoxifies the quinone breakdown products of benzene, tobacco smoke, and other environmental toxins. Your genotype is associated with reduced NQO1 function. The GPX1P1 enzyme is a member of the glutathione peroxidase family of enzymes. It detoxifies hydrogen peroxide, a reactive oxygen species formed during mitochondrial energy metabolism. Your genotype has no effect on GPX1P1 enzyme function.

DIET & LIFESTYLE RECOMMENDATIONS

Your diet should include lots of fruits and vegetables. Cruciferous vegetables such as broccoli, brussels sprouts, arugula, kale, and cauliflower are best. Eat them raw or avoid overcooking them. Too much heat can destroy the vegetable's antioxidant benefits. If these foods are not part of your regular diet, you may benefit from a supplement. You may benefit from regular exercise as it boosts antioxidant levels.

Environmental Toxins

Consider Action

Harmful substances found in our surroundings.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
GSTP1 (rs1695)	AG,GG	AG

IMPLICATIONS

GSTP1 is one of many glutathione sulfotransferase (GST) enzymes that participate in the elimination of environmental substances, which include toxins found in tobacco smoke. Your genotype is associated with reduced enzyme function.

DIET & LIFESTYLE RECOMMENDATIONS

Your diet should include lots of fruits and vegetables. Cruciferous vegetables such as broccoli, brussels sprouts, arugula, kale, and cauliflower are best. These help your body get rid of harmful substances from the environment. If these foods are not part of your regular diet, you may benefit from a supplement. You should avoid smoking and being around people that are smoking.

Estrogen Metabolism

Consider Action

Estrogens are a family of hormones that are required for female sexual development and menstrual cycle regulation. Estrogens are produced in larger amounts in females but are also produced in males.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
COMT (rs4680)	AA,AG	AA

IMPLICATIONS

COMT is an enzyme that detoxifies the reactive breakdown products of estrogen. Individuals with your genotype may have reduced enzyme activity.

DIET & LIFESTYLE RECOMMENDATIONS

Your diet should include lots of cruciferous vegetables such as broccoli, brussels sprouts, arugula, kale, and cauliflower. These foods help balance estrogen levels in your body. If these foods are not part of your regular diet, you may benefit from a supplement.

Caffeine Metabolism

Consider Action

An over-the-counter stimulant found in many beverages including coffee and tea.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
CYP1A2 (rs762551)	AC,CC	AC

IMPLICATIONS

Individuals with your genotype may metabolize caffeine more slowly.

DIET & LIFESTYLE RECOMMENDATIONS

You should keep track of how much caffeine you consume in beverages like coffee, tea, and energy drinks. Even if you drink them in the morning, they can interfere with sleep.

GENETIC REPORT : WEIGHT MANAGEMENT

Eating Between Meals

Consider Action

Increased hunger and cravings between meals that lead to snacking.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
MC4R (rs17782313)	CT,CC	CT

IMPLICATIONS

Individuals with your genotype are more likely to experience increased hunger and cravings between meals, leading to snacking and potential weight gain.

DIET & LIFESTYLE RECOMMENDATIONS

If you snack between meals, you should drink plenty of water and choose snacks that are low in calories or high in fiber. Good examples are a handful of almonds or a piece of fruit. Eating more protein at mealtimes will also help you feel full longer. If these foods are not part of your regular diet, you may benefit from a supplement.

Protein Intake

Consider Action

Protein is an essential macronutrient that may help you manage your weight.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
FTO (rs9939609)	AT,AA	AT

IMPLICATIONS

Individuals with your genotype are more likely to benefit from a high-protein diet for healthy weight management.

DIET & LIFESTYLE RECOMMENDATIONS

Include protein-rich foods at every meal. Good sources include meat, nuts, seeds, dairy, eggs, and legumes/beans If these foods are not part of your regular diet, you may benefit from a supplement.

Saturated Fat Response

Consider Action

Saturated fat is a macronutrient found mainly in animal food sources. This type of fat can be harmful if you consume too much.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
APOA2 (rs5082)	GG	GG

IMPLICATIONS

Individuals with your genotype are more likely to lose some weight simply by reducing their saturated fat intake to less than 22 g/day.

DIET & LIFESTYLE RECOMMENDATIONS

You should limit the amount of saturated fat in your diet to 22g/day when trying to lose weight including fried foods, baked goods, processed meats (like pepperoni, sausage, and bacon), and foods that have lots of cream or butter. These are all high in saturated fat.

Adiponectin Levels

Consider Action

This hormone helps your body process sugars and fats.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
ADIPOQ (rs17366568)	AG,AA	AG

IMPLICATIONS

Your genotype is linked to reduced blood levels of adiponectin, a hormone that maintains healthy glucose and lipid metabolism. This relationship has been demonstrated in Caucasians of European descent. Its relevance to other ethnic groups has not been established.

DIET & LIFESTYLE RECOMMENDATIONS

Scientific studies show that the 'Mediterranean Diet' may support healthy adiponectin levels. You should consume fatty fish, like salmon or avocado that are high in "good"fats. If these foods are not part of your regular diet, you may benefit from a supplement.

Monounsaturated Fat Response

Consider Action

Monounsaturated fat is a macronutrient found in certain foods and oils. Eating this type of fat can have health benefits.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
PPARG (rs1801282)	CG,GG	CG

IMPLICATIONS

A higher intake of monounsaturated fat is associated with lower body weight in women with your genotype. More research is needed to determine whether this is also true in men.

DIET & LIFESTYLE RECOMMENDATIONS

Try to add 1-2 tablespoons of Extra virgin olive oil and 1/4-1/2 cup of nuts each day to your diet. These foods have high amounts of monounsaturated fats. Avocados are also a rich source of these "healthy fats". If these foods are not part of your regular diet, you may benefit from a supplement.

GENETIC REPORT : CARDIOVASCULAR HEALTH

Response to Saturated Fat

Consider Action

Saturated fat is a macronutrient found mainly in animal food sources. Too much of it can be harmful to your blood vessels.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
ACE (rs4343)	GG	GG

IMPLICATIONS

Individuals with your genotype may experience significant improvements in vascular function on a diet low in saturated fat, according to a small study.

DIET & LIFESTYLE RECOMMENDATIONS

You should limit how much of your daily calories come from fat to no more than 30%. Cut back on salty foods and table salt and avoid foods that are very high in saturated fat. These include beef, butter, coconut, fried foods, cream, baked goods, chocolate, and processed meats (such as pepperoni, sausage, bacon).

Salt Sensitivity

Consider Action

Sodium (salt) is a mineral found in most foods. Too much sodium can damage the way your blood vessels work.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
AGT (rs699)	CT,CC	CC

IMPLICATIONS

Individuals with your genotype may have higher plasma angiotensin levels (a 10-30% increase was suggested in one study). These individuals may be more sensitive to the effects of dietary sodium on vascular function.

DIET & LIFESTYLE RECOMMENDATIONS

Limit how much salt you eat to 2,300 mg a day. Make sure you eat enough foods that have potassium, like fruits and vegetables. Aim to eat 4,700 mg of potassium a day.

C-reactive Protein Level

Consider Action

A protein in your body that increases when your immune system is activated.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
CRP (rs1205)	CT,CC	CC

IMPLICATIONS

Individuals with your genotype are more likely to have higher C-reactive protein (CRP) levels.

DIET & LIFESTYLE RECOMMENDATIONS

The following recommendations have been shown to support healthy immune function: - Regular Exercise - At least 7-8 hours of restful sleep every night - Relaxation techniques, therapy, or meditation.

Caffeine Metabolism

Consider Action

An over-the-counter stimulant found in many beverages including coffee and tea.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
CYP1A2 (rs762551)	AC,CC	AC

IMPLICATIONS

Individuals with your genotype are more likely to metabolize caffeine more slowly. They may also be more sensitive to the effects of caffeine on cardiovascular function. Studies suggest a greater potential for adverse cardiovascular health effects when caffeinated coffee consumption exceeds 2-3 cups per day.

DIET & LIFESTYLE RECOMMENDATIONS

You should keep track of how much caffeine you consume in beverages like coffee, tea, and energy drinks. Even if you drink them in the morning, they can interfere with sleep.

Paraoxonase-1 (PON1) Activity

Consider Action

This enzyme helps protect HDL ("good cholesterol") particles from the effects of free radicals.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
PON1 (rs662)	CT,CC	CT

IMPLICATIONS

Paraoxonase 1 (PON1) is an HDL-associated enzyme that protects lipoproteins from the effects of oxidative stress. Individuals with your genotype may have lower levels of the PON1 enzyme.

DIET & LIFESTYLE RECOMMENDATIONS

Eat foods that have a lot of antioxidants. These include colorful fruits and vegetables like berries, pomegranates, and also green tea. The "Mediterranean Diet"is also a good way to get more antioxidants.

HDL Cholesterol Level

Consider Action

HDL cholesterol is "good"cholesterol that helps to maintain heart health.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
LIPC (rs1800588)	CT,TT	CT

IMPLICATIONS

Individuals with your genotype tend to have lower HDL cholesterol.

DIET & LIFESTYLE RECOMMENDATIONS

A good way to raise HDL (“good” cholesterol) levels is with exercise. Ask your health care provider if high-intensity interval training is a good option for you.

Coenzyme Q10 Levels

Consider Action

An antioxidant that your cells use for energy production.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
SLCO1B1 (rs4149056)	CT,CC	CT

IMPLICATIONS

Individuals with your genotype may be more likely to experience coenzyme Q10 (CoQ10) depletion with the use of simvastatin.

DIET & LIFESTYLE RECOMMENDATIONS

If you take cholesterol medication, talk to your health care provider.

GENETIC REPORT : GASTROINTESTINAL HEALTH

Histamine Metabolism

Consider Action

A substance found in many foods that can lead to intolerance in some individuals.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
AOC1 (rs10156191)	CT,TT	CT

IMPLICATIONS

Diamine oxidase (DAO), encoded by the AOC1 gene, is one of the enzymes that metabolize dietary histamine. Individuals with your genotype may have reduced DAO activity and a reduced capacity to metabolize dietary histamine.

DIET & LIFESTYLE RECOMMENDATIONS

You may benefit from a low histamine diet, limiting the amount of meat, fermented and canned items, poultry, fish, tomatoes, chocolate, spinach, eggplant, avocado, and nuts.

Processed Meat Sensitivity

Consider Action

These meats are high in saturated fat, salt, nitrates, and nitrites.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
GATA3 (rs4143094)	GT,TT	GT

IMPLICATIONS

Individuals with your genotype are more likely to benefit from reducing processed meat intake, according to gene-diet research focusing on long-term colon health.

DIET & LIFESTYLE RECOMMENDATIONS

You may benefit from reducing processed meat to help with the health of your colon. Examples of processed meats they should avoid include deli meats, sausage, ham, pepperoni, and cured bacon.

Microbial Balance in the Stomach

Consider Action

Organisms living in the stomach.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
TLR4 (rs4986790)	GG	GG

IMPLICATIONS

Individuals with your genotype are more likely to have an altered microbial composition in the stomach. Further assessment is recommended.

DIET & LIFESTYLE RECOMMENDATIONS

Talk to your doctor if you would like further testing.

Microbial Balance in the Intestine

Consider Action

Organisms living in the stomach and gastrointestinal tract that support healthy digestion and immune system function.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
FUT2 (rs601338)	AA	AA

IMPLICATIONS

Individuals with your genotype are more likely to have an altered intestinal microbial composition.

DIET & LIFESTYLE RECOMMENDATIONS

You should try eating foods high in fiber like vegetables and whole grains. Fermented foods like yogurt or kefir are also good.

GENETIC REPORT : COGNITIVE HEALTH AND MEMORY

Executive Function

Consider Action

Executive functioning skills help you get things done. These skills help you pay attention, plan, remember details, self-monitor, and adapt.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
COMT (rs4680)	GG, AA	GG

IMPLICATIONS

Individuals with the GG (Val/Val) genotype tend to have a sharper executive function in stressful situations but are more likely to struggle in normal, non-stressful environments. This is likely due to lower levels of dopamine in the prefrontal cortex, a region of the brain that controls executive function.

DIET & LIFESTYLE RECOMMENDATIONS

You should include protein-rich foods to support mental sharpness. Good sources include meat, nuts, seeds, dairy, eggs, and legumes/beans. Regular exercise helps support your mental sharpness.

Stimulant Sensitivity

Consider Action

A chemical that promotes wakefulness. May be over-the-counter or prescribed.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
COMT (rs4680)	AA	AA

IMPLICATIONS

Individuals with your genotype may be more sensitive to the effects of stimulant medications.

DIET & LIFESTYLE RECOMMENDATIONS

You may be sensitive to stimulants that promote alertness.

Serotonin Production

Consider Action

A chemical in the brain that helps you relax.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
TPH2 (rs4570625)	GT,TT	TT

IMPLICATIONS

Tryptophan hydroxylase 2 (TPH2) is an enzyme that converts tryptophan to a serotonin precursor, 5-HTP. Serotonin helps to maintain a positive emotional state, promotes relaxation, and healthy eating behavior. Individuals with your genotype may have reduced TPH2 activity.

DIET & LIFESTYLE RECOMMENDATIONS

You should consider eating lean meats, chicken, and fish because they contain tryptophan. It is important to eat a balanced diet containing lots of fruits and vegetables. Fruits and vegetables also support emotional health by providing essential vitamins, minerals, and fiber. If these foods are not part of your regular diet, you may benefit from a supplement.

Brain-Derived Neurotrophic Factor

Consider Action

A protein that supports nerve function by promoting their growth and maintenance.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
BDNF (rs6265)	AG,AA	AG

IMPLICATIONS

Individuals with your genotype tend to make lower amounts of brain-derived neurotrophic factor (BDNF).

DIET & LIFESTYLE RECOMMENDATIONS

Try to eat foods that have “healthy fats”, like salmon, sardines, and herring. Berries and other fruits, vegetables, teas, and spices also contain antioxidants that help your body make more BDNF. Regular exercise can help increase your BDNF levels. Getting at least 7-8 hours of quality sleep every night can help you increase BDNF levels. Relaxation techniques, therapy, or meditation can help you decrease stress and increase BDNF levels.

Dopamine Receptor Function

Consider Action

A chemical in the brain that plays a role in motivation, pleasure, and reward.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
DRD2 (rs6277)	CT,TT	CT
DRD2 (rs2283265)	AC,AA	CC
DRD2 (rs1076560)	AC,AA	CC
ANKK1-DRD2 (rs1800497)	AG, AA	GG

IMPLICATIONS

The ability to respond to dopamine requires dopamine receptors. This result indicates that at least one relevant genotype is present, suggesting that dopamine receptor activity may be altered. Further research is required to determine the impact.

DIET & LIFESTYLE RECOMMENDATIONS

You should eat plenty of lean meats (beef, pork chicken); legumes (beans, lentils, chickpeas, peanuts); eggs; nuts; seeds, and leafy greens which provide folate and zinc in a form the body can easily use. If these foods are not part of your regular diet, you may benefit from a supplement. You should avoid smoking as it may alter dopamine receptor function.

Cannabis Response

Consider Action

A controlled substance containing the active compound THC.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
FAAH (rs324420)	AC,AA	AC

IMPLICATIONS

Individuals with your genotype are more likely to engage in habitual cannabis use.

DIET & LIFESTYLE RECOMMENDATIONS

You should use caution with THC-containing cannabis products as it may become a habit.

GENETIC REPORT : IMMUNE HEALTH

IL-6 Activation

Consider Action

A substance that activates the immune response.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
IL-6 (rs1800795)	CG,GG	GG

IMPLICATIONS

Individuals with your genotype may have a higher expression and/or blood levels of IL-6.

DIET & LIFESTYLE RECOMMENDATIONS

The following recommendations have been shown to support healthy immune function: - Regular Exercise - At least 7-8 hours of restful sleep every night - Relaxation techniques, therapy, or meditation.

TNF-alpha Activation

Consider Action

A substance that activates the immune response.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
TNF (rs1800629)	GA,AA	AG

IMPLICATIONS

Individuals with your genotype may have a higher expression and/or blood levels of TNF-alpha.

DIET & LIFESTYLE RECOMMENDATIONS

The following recommendations have been shown to support healthy immune function: - Regular Exercise - At least 7-8 hours of restful sleep every night - Relaxation techniques, therapy, or meditation.

Vitamin A (Retinol)

Consider Action

A nutrient that maintains healthy immune function and supports the protective lining of the respiratory and GI tracts

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
BCMO1 (rs7501331)	CT,TT	CT
BCMO1 (rs12934922)	AT,TT	AA

IMPLICATIONS

Individuals with your genotype may have a reduced capacity to convert beta-carotene to vitamin A (retinol). This may increase the need for directly consuming vitamin A.

DIET & LIFESTYLE RECOMMENDATIONS

You should eat more foods with vitamin A, such as organ meats (liver, kidney, etc.), eggs, cod liver oil, and dairy products. If these foods are not part of your regular diet, you may benefit from a supplement.

Vitamin D

Consider Action

A vitamin that regulates a wide range of genes required for a healthy immune response

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
GC (rs2282679)	TG,GG	GT
DHCR7 (rs12785878)	TG,GG	TT
CYP2R1 (rs10741657)	GA,GG	AA

IMPLICATIONS

Individuals with your genotype are more likely to have increased vitamin D requirements.

DIET & LIFESTYLE RECOMMENDATIONS

You should eat foods that contain vitamin D such as mushrooms, fish, and lean pork. If these foods are not part of your regular diet, you may benefit from a supplement. Sunlight is another source of vitamin D. In small amounts, regular sunlight exposure can help boost your vitamin D levels.

Microbial Balance in the Intestine

Consider Action

Organisms living in the stomach and gastrointestinal tract that support healthy immune system function

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
FUT2 (rs601338)	AA	AA

IMPLICATIONS

Individuals with your genotype are more likely to have an altered intestinal microbial composition.

DIET & LIFESTYLE RECOMMENDATIONS

You should try eating foods high in fiber like vegetables and whole grains. Fermented foods like yogurt or kefir are also good.

GENETIC REPORT : ENERGY & FITNESS

Tendon or Ligament Injury

Consider Action

Fibrous cords that attach muscles to bone (tendons) and bones to bones (ligaments).

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
COL5A1 (rs12722)	CT,TT	CT
COL1A1 (rs1800012)	GT,GG	GG

IMPLICATIONS

Individuals with your genotype are more likely to be susceptible to exercise-related tendon or ligament injury.

DIET & LIFESTYLE RECOMMENDATIONS

Regular exercise is part of a healthy lifestyle, however, it is important for your patient to stretch before and after playing sports or exercising. Your risk of injury may be higher for activities like plyometrics (jump training), uphill running, or anything that requires quick, forceful movements. You should include flexibility and mobility exercises for calves and knees as part of your routine to help prevent injury to a tendon or ligament.

Achilles Tendon Injury

Consider Action

This tendon is a fibrous cord that connects your calf muscles to your heel bone.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
MMP3 (rs679620)	AG,GG	AG

IMPLICATIONS

Individuals with your genotype are more susceptible to Achilles tendon injury. Studies suggest that the risk of injury may be up to 2.5 times greater for your genotype compared to other genotypes.

DIET & LIFESTYLE RECOMMENDATIONS

It is important for you to stretch before and after playing sports or doing intense exercise. If you perform high-impact activities, like running and jumping, you may benefit from adding some low-impact activities, like cycling or swimming. This will give the tendons in your ankle a break so they can stay strong. Your patient should choose running shoes carefully and be sure to replace them when they are worn out.

Endurance Potential

Enhanced Benefit

Your ability to perform an exercise at low to moderate intensity over long periods of time (e.g., swimming, running, cycling, cross-country skiing).

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
ADRB2 (rs1042713)	AG,AA	AA

IMPLICATIONS

Individuals with your genotype may respond better to endurance training. Studies show that male endurance runners with this genotype had the fastest times. More research is needed to explore how it affects women.

DIET & LIFESTYLE RECOMMENDATIONS

You may have a small genetic advantage in endurance sports (sports that require energy for a long time).

Aerobic Capacity

Enhanced Benefit

A type of exercise that improves the body's use of oxygen and endurance.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
PPARGC1A (rs8192678)	AG,GG	GG

IMPLICATIONS

Your genotype is common among elite athletes with a high level of aerobic fitness according to some studies.

DIET & LIFESTYLE RECOMMENDATIONS

You may have a small genetic advantage that makes you better at aerobic fitness (cardio).

Exercise-related Fatigue

Consider Action

Exhaustion or overtiredness during exercise.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
AMPD1 (rs17602729)	TT	TT

IMPLICATIONS

Individuals with your genotype may be more susceptible to fatigue and cramping during high-intensity exercise.

DIET & LIFESTYLE RECOMMENDATIONS

You may get tired quickly when they exercise, so you may need to change to a shorter and/or less intense workout.

Body Fat and Exercise

Enhanced Benefit

These variants may affect your ability to lose fat with exercise.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
ADRB2 (rs1042713)	AG,AA	AA
LPL (rs328)	CG,GG	CC

IMPLICATIONS

Women with your genotype may experience enhanced fat loss during endurance training. Currently, there is not enough scientific evidence to show whether this is also true in men.

DIET & LIFESTYLE RECOMMENDATIONS

No recommendation

Muscle Soreness

Consider Action

General discomfort in a muscle or muscle group.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
ACTN3 (rs1815739)	TT	TT

IMPLICATIONS

Individuals with your genotype are more likely to experience muscle soreness during short, intense bursts of activity, such as sprinting and weight training.

DIET & LIFESTYLE RECOMMENDATIONS

If your muscles are sore after you work out, make sure to get enough rest to let your body recover before the next one. Managing daily stress and getting enough sleep will also help your muscles recover. Getting enough good quality sleep will help your muscles recover effectively after a workout. Managing daily stress through breathing exercises, meditation, and other relaxation techniques will help your muscles recover effectively after a workout.

Glucose Response to Exercise

Enhanced Benefit

How exercise affects your body's ability to process glucose, a type of simple sugar.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
LIPC (rs1800588)	CT,CC	CC

IMPLICATIONS

Individuals with your genotype are more likely to experience significant improvements in glucose metabolism when following an exercise program.

DIET & LIFESTYLE RECOMMENDATIONS

Exercise alone may provide noticeable improvements for balancing your blood sugar. Consult with your practitioner to determine what type of exercise is best for you.

GENETIC REPORT : GLUCOSE METABOLISM

Glucose Metabolism

Consider Action

Glucose is a type of simple sugar carbohydrate that is a source of energy for cell function.

SNP	RISK/RESPONSE VARIANT	YOUR VARIANT
TCF7L2 (rs7903146)	CT, TT	CT
ADRA2A (rs553668)	AG, AA	GG

IMPLICATIONS

Your genotype may affect glucose metabolism.

DIET & LIFESTYLE RECOMMENDATIONS

You should consider the 'Mediterranean Diet' or another type of plant-based diet. If these foods are not part of your regular diet, you may benefit from a supplement.

LIFESTYLE SUGGESTIONS

NUTRITION AND DIET

Overview

We suggest the Heart Healthy Diet for you based on your genetic profile. This diet is predominantly plant-based, with an emphasis on whole, fresh foods and moderate amounts of protein largely from fish and seafood, as well as eggs, poultry, with minimally processed dairy to a lesser extent. Red meats are consumed rarely. Complex Carbohydrates including varied vegetables, fruits, herbs, spices, nuts, beans, whole grains, and olive oil comprise the base of this diet. A good rule of thumb is that 50-75% of your plate should come from plant-based foods.

Suggested Macronutrient Sources

Protein	Fats	Carbohydrates
Low mercury fish (anchovies, catfish, herring, mackerel (north Atlantic, chub), salmon (fresh, wild), sardines, sole (pacific), tilapia, trout (freshwater), whitefish), poultry, eggs, quinoa, lentils, beans and other legumes, nuts, seeds, cheese, occasional red meat.	Olive oil and olives, avocado oil and avocado, nuts, seeds, fatty fish like salmon, halibut and mackerel, whole eggs, for essential fatty acids (omega 3s - DHA and EPA): flaxseed, fish and fish oils, avocado, eggs.	Sweet potatoes, squash, quinoa, brown rice, steel-cut oats, buckwheat, beans, legumes, lentils, fruit, root vegetables (carrots, parsnips, rutabaga, celery root, etc.).

Suggested Macronutrient Distribution

Suggested macronutrient distribution for you is 40-50% carbohydrates, 30% protein, and 20-30% fat. To effectively support blood sugar control and healthy body weight the lower end of the range for carbohydrates is likely to work better for you. (Original research: Remission of pre-diabetes to normal glucose tolerance in obese adults with high protein versus high carbohydrate diet: randomized control trial). If you are an athlete or very active you may require a carbohydrate intake at the higher end of the range depending on your goals. If weight loss is the desired goal then you can decrease total daily calories by 10-15%. If you are trying to lose weight then reducing the amount of saturated fat in your diet to less than 22g/day may help. If weight gain is the desired goal then you can increase total daily calories by 15%.

Additional Considerations	Increase	Decrease
	Avocados	Eggplant
	Berries	Spinach
	Broccoli	Tomatoes
	Cruciferous vegetables	Seafood
	Fresh fruit	Dairy products
	Fresh vegetables	Chocolate
	Fruits	Iron-rich foods like red meats
	Leafy green vegetables	Liver
	Mushroom	Organ meats (liver, kidney, etc.)
	Peas	Fermented foods
	Pomegranates	Salty preserved foods (pickles, pepperoni, salami, bacon, etc.)
	Vegetables	Cured bacon
	Watercress	Deli meats
	Green tea	Ham
	Herbs and spices	Pepperoni
	Beans	Sausage
	Legumes (like beans, lentils, chickpeas, and peanuts)	Salt
	Almonds	Canned foods
	Nuts	**Add**
	Pumpkin seeds	Apples
	Seeds	Arugula
	Sunflower seeds	Brussels sprouts
	Whole grains	Cauliflower
	Cold-water fish	Pears
	Low mercury fish	Kidney beans
	Mackerel	Quinoa
	Salmon	Herring
	Low-fat yogurt	Sardines
	Crab	Kefir
	Fish	Low-fat dairy
	Oysters	Chicken
	Butter	Turkey
	Cod liver oil	**Avoid**
	Extra virgin olive oil	Cream
	Lean beef	Coconut products
	Lean meats	Foods with butter
	Lean pork	Foods with cream
	Meat	Fatty beef
	Poultry	Red meat (grassfed is okay rarely)
	Eggs	Processed meats (such as pepperoni, sausage, bacon)
		Fried foods
		Baked goods

EXERCISE

Overview

Our genetics can influence how we perform during exercise and exercise can also influence the expression of certain genes. Exercise is an important part of a healthy lifestyle. Daily exercise promotes stress reduction and mental well-being, cognitive function, metabolism, sleep, as well as many other key body functions. You should choose activities or sports that you enjoy doing and can do well. Getting out in nature can enhance many of the benefits of exercise, notably stress reduction and their sense of well-being.

Additional Considerations

Exercise can increase the amount of adiponectin in your body Exercise helps support your mental sharpness Exercise can help increase BDNF levels Exercise can help support a healthy immune system You should choose a form of physical activity that they can do and enjoy. Regular exercise is part of a healthy lifestyle, however, it is important for you to stretch before and after playing sports or exercising. Your risk of injury may be higher for activities like plyometrics (jump training), uphill running, or anything that requires quick, forceful movements. You should include flexibility and mobility exercises for calves and knees as part of their routine to help prevent injury to a tendon or ligament. It is important for you to stretch before and after playing sports or doing intense exercise. If you perform high-impact activities, like running and jumping, you may benefit from adding some low-impact activities, like cycling or swimming. This will give the tendons in your ankles a break so they can stay strong. You should choose running shoes carefully and be sure to replace them when they are worn out. You may have a small genetic advantage in endurance sports (sports that require energy for a long time). You may have a small genetic advantage that makes you better at aerobic fitness (cardio). You may get tired quickly when you exercise. If so, you may need to change to a shorter and/or less intense workout. If your muscles are sore after you workout, make sure you get enough rest to let allow your body to recover before the next workout. Managing daily stress and getting enough sleep will also help your muscles recover. Exercise alone may provide noticeable improvements for balancing your blood sugar. You may want to consult with your provider on what activities are best for you.

SLEEP

Overview

Our genetics can influence how we sleep and sleep issues can also influence the expression of certain genes. Sleep is a critical component of overall health as many vital functions occur during this time of rest, such as cellular repair and rejuvenation, detoxification, and hormone repletion. Proper sleep is also important for immune health, emotional health, energy levels, metabolism, blood sugar regulation, and cognitive function. It is recommended that you get 7-9 hours of sleep per night. If you are having trouble with sleep, or if you are not well-rested each morning you may benefit from a more detailed consultation with your practitioner.

Additional Considerations

Getting at least 7-8 hours of restful sleep every night can help support healthy immune function. Getting at least 7-8 hours of quality sleep every night can help you increase your BDNF levels. Getting enough good quality sleep will help your muscles recover effectively after a workout.

STRESS MANAGEMENT

Overview

Our genetics can influence how we experience and handle stress and stress can also influence the expression of certain genes. Stress is how the body reacts to both conscious and unconscious demands, changes, and other stimuli. This happens every moment of every day, whether we are aware of it or not. Our bodies are designed to handle a certain amount of stress, and beyond that, it can have detrimental effects on our health. Incorporating stress management techniques such as therapy, prayer, meditation, breathing exercises, a minute of silence, or even asking for help when needed can help mitigate the effects of stress in your daily life. Incorporating stress-reducing techniques throughout your day supports healthy immune and hormone function, energy levels, mental clarity, and mood.

Additional Considerations

Relaxation techniques, therapy, or meditation can help decrease your stress which supports healthy immune function. Relaxation techniques, therapy, or meditation can help you decrease stress and increase BDNF levels. Managing daily stress through breathing exercises, meditation, and other relaxation techniques will help your muscles recover effectively after a workout.

SUN EXPOSURE

Overview

Our genetics can influence the availability and conversion to the active form of Vitamin D in the body. Daily sun exposure is an important component of a healthy lifestyle. Skin exposure to sunlight produces Vitamin D which is essential for bone, mental health, immune function, and stress reduction. Getting out in the sun early in the day also supports a healthy circadian rhythm and sleep. You should aim for 15–30 minutes of sunlight on exposed skin daily to produce adequate Vitamin D. Times may vary with skin color - people with darker skin may need a little more and people with lighter or sensitive skin may need less.

Additional Considerations

Based on your genotype, exposure to sunlight for 15-30 minutes per day may help boost Vitamin D levels and support a healthy circadian rhythm and sleep.

ENVIRONMENTAL EXPOSURES

Overview

Our genetics can influence how we respond to environmental toxins and exposures to toxins may also influence the expression of certain genes. There are many toxicants in the environment that can have detrimental effects on our health. Smog/ozone, car emissions, smoke, industrial pollutants, solvents, pesticides, herbicides, plastics, mycotoxins, and other chemicals can enter our bodies through the air, water, soil, and household products. It is best to minimize exposure to these to support detoxification, immune balance, and overall health. When preparing foods, avoid charring, burning, or overcooking foods as this is also a common environmental exposure. Filtering your water and air, as well as eating organic when possible can help decrease your total exposures.

Additional Considerations

You should avoid smoking and also avoid being around people that are smoking.

MEDICATION AND SUBSTANCE USE

Overview

Our genetics can influence how medications and substances affect us and in some cases, they may also influence the expression of certain genes. Medications, recreational drugs, and substances such as caffeine and nicotine can have different effects on your health. Stimulation, calming/sedation, and increased or decreased alertness are a few of the effects brought about by these substances and may either be positive or negative. Long-term use of certain substances may lead to undesired health consequences for you.

Additional Considerations

You should keep track of how much caffeine you drink in beverages like coffee, tea, and energy drinks. Even if you drink them in the morning, they can interfere with sleep. You may be sensitive to stimulants that promote alertness. You should use caution with THC containing cannabis products as it may become a habit. You should avoid smoking as it may alter dopamine receptor function.