MaxGen LABS

MaxFunction

Client Name:	John Doe	Sample Received:	
Client DOB:	1/1/1999	Report Date:	7/27/2022
Vial Number:	Sample Report	MaxGen PTID#:	P186.1
Client Sex:	Male	CLIA Certification:	01D2098265
Referring Account:	MaxGen Labs		
Note:			

Consult with a licensed healthcare professional before making changes based upon any information contained within this report. These recommendations and explanations are based upon clinical observation by MaxGen Labs and current medical research. These results are for educational purposes only and not intended to diagnose, treat, or cure any disease or condition. The use of this test and its recommendations have not been approved by the FDA. MaxGen Labs and its staff are not responsible for how this test is used or any damages resulting from its use.

Basic Genetics & Information

Need More Help?
Nutrigenomic reporting, like this MaxGen panel, is a new area of education, research, and health optimization. Nutrigenomics is significantly different from what most would consider medical genetics. Finding a practitioner who is educated in nutrigenomics can be difficult, as most primary care physicians, genetic counselors, and genetic centers focus on pathogenic and life-threatening genetic diseases. If you need help finding a nutritionally trained practitioner to work with, contact Help@maxgenlabs.com for assistance.

Nutrigenomics: The study of how genetic expression is influenced by nutrition. Small variations in genetic structure may require specific nutritional support that is unique to each individual. Genetic testing provides insight to this need.

Genes: Transferred from parent to offspring, genes are the basic unit of heredity. Genes are found on chromosomes and are made up of DNA. Each person has two copies of a gene, one from each parent. Genes are named for the protein they create or the function they have, often being simplified into abbreviations (example: MTHFR – short for methylenetetrahydrofolate reductase).

DNA: Deoxyribonucleic Acid, or DNA, is a molecule within a gene that contains the instructions an organism needs to grow, function, and reproduce. It is the carrier of all genetic information and is made up of chemical base pairs: adenine (A), thymine (T), cytosine (C), guanine (G). The order of sequence determines the information needed to maintain life.

Single Nucleotide Polymorphism (SNPs): A variation in base pair sequencing that may alter the function of a gene. Nutrigenomic testing looks at these variations to determine how a gene may function. Each combination of base pairs may alter the function of a gene in different ways. The variations are described as:

Wild Type – most commonly found pairing in nature; no variation
Heterozygous – one variant copy from a parent; one non-variant copy from a parent
Homozygous – two variant copies, one from each parent

For professional-grade supplements that are appropriate for your genetic variations, visit www.dnarx.com

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Vitamin D & Your Genetics

Vitamin D is a fat-soluble vitamin that must be converted in the liver and kidneys. Limited foods supply Vitamin D, so substantial exposure to sunlight or specific supplementation can be used when a deficiency is present. Vitamin D is crucial for calcium concentrations, bone growth, immune function, and the reduction of inflammation.

For daily use, both D2 and D3 forms of Vitamin D are beneficial, but D3 (cholecalciferol) should be used for therapeutic dosing during a deficiency. Supplements between 5,000 IU and 10,000 IU are ideal for daily therapeutic dosing. Daily intake should be between 1,000 – 2,000 IU of Vitamin D or cod liver oil for general wellness.

Ideally, Vitamin D should be absorbed from natural sunlight exposure. Between the hours of 10am – 3pm, UV rays should hit the face, neck, arms, and shoulders for 10-30 minutes at least twice a week (avoid skin burns).

The three VDR SNPs in this test are from a physician poll of the most common SNPs needed in clinical practice. For blood work, practitioners tend to look at 25(OH) D by itself, while other practitioners also look at 1,25(OH)2D. The 1,25-dihydroxyvitamin D is formed from 25(OH)D in the kidneys under the influence of Parathyroid Hormone and specific enzymes; whereas, 25(OH)D is converted in the liver. It is also recommended to check HbA1c for blood sugar control.

Vitamin D Foods

Cod Liver Oil
Swordfish
Salmon
Beef Liver
Egg Yolks
Cheese

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
1,25 dihydroxyvitamin D

Health Conditions

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

VDR-BSM

You have a heterozygous variation in VDR-BSM. Consider watching your Vitamin D levels and consuming foods high in Vitamin D.

VDR-TAQ

You have a heterozygous variation in VDR-TAQ. Consider watching your Vitamin D levels and consuming foods high in Vitamin D.

VDR-FOK

No variant detected for Vitamin D deficiency.

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B12 & Your Genetics Report

Do you get enough Cobalamin, or vitamin B12? Do you take the right form of B12? Since your body does not produce B12, it is important to make sure you get adequate amounts of it in the correct form. B12 is important for a number of processes in the body, especially the production of neurotransmitters, energy, and blood cells.
People often feel better switching to the correct form of B12 based on genetics and/or increasing their consumption. Consider yearly micronutrient testing. Always avoid cyanocobalamin supplements.

B12 Blood Levels

Many genes are associated with decreased serum B12 levels. Increasing supplementation or using dermal or injectable B12 can help bypass a possible genetic issue.

You have a risk for low serum Vitamin B12 levels. Use organic acid or homocysteine testing to verify your need for B12.

Methy-B12 Need

Produced by the enzyme MTRR, Methylcobalamin is the main form of B12 used for detoxification and neurotransmitter production. It is bio-active and can be found in good quality supplements.

You have one of the two genetic markers that create the need for Methylcobalamin supplementation. Use organic acid or homocysteine testing to verify your need for B12.

Adenosyl-B12 Need

Adenosylcobalamin is mainly used to produce energy within the mitochondria. Many people report increased energy with Adeno-B12 supplementation.

There are no genetic indications that you need Adenosylcobalamin supplementation. Adenosylcobalamin could be used in cases of fatigue.

Methyl-B12-Sensitivity

Some people report sensitivities to methylated B12, including increased aggression and hyperactivity. We can occasionally predict these sensitivities by looking at other variations.

You have one of the five genetic markers for Methylcobalamin sensitivity. If you feel anxious, jittery, or have insomnia when using methylcobalamin, you should use Hydroxocobalamin if additional B12 is needed.

Low B12 Symptoms

- Anxiety
- Pale Skin
- Smooth Tongue
- Constipation
- Diarrhea
- Heart Palpitations
- Fatigue
- Poor Balance
- Memory loss
- Neuropathy
- Tingling feet
- Depression

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Folate & Your Genetics

Folate, or B9, is a vitamin required for numerous processes in the body. DNA replication, neurotransmitter production and degradation, detoxification, and prevention of cardiovascular disease are just a few. It is found naturally in uncooked leafy green vegetables.

Folate - MTHFR

The MTHFR enzyme processes dietary folates into methyl-folate, crucial for methylation and over 200 processes in the body. Low levels of methylfolate have been associated with numerous symptoms and diseases. There are two main variants: C667T and A1298C.

Since MTHFR creates methylfolate, you can supplement with oral methylfolate. This can speed up the methylation cycle, returning detoxification and neurotransmitter production back to normal. This testing and approach has become common in fertility and psychiatric practices.

It is important to start slow and titrate up when using methyl folate. 400mcg is a common starting point for adults. Some research points to benefits from 400mcg to 15mg; however, many people do very well on doses under 2mg. Please see a practitioner for help with dosing.

MTHFR Symptoms

Depression
Anxiety
ADD/ADHD
Miscarriage
Cardiovascular Disease
Blood Clots
Bipolar
Schizophrenia
Cancer
Midline defects
And More

Your MTHFR Results

You have two copies of the C677T MTHFR variation. This can result in a signficant decrease in conversion of dietary Folate into MethylFolate. Consider homocysteine and RBC Folate testing.

Avoiding synthetic folic acid and consuming a diet full of green leafy vegetables is important. MethylFolate supplementation may be appropriate if you have symptoms associated with Folate deficiency.

Methylfolate Sensitivity

Some people can be sensitive to methylfolate. In this case, different forms of vitamin B9 may be used. Consider folinic acid and working with a practitioner.

You have one of the five genetic markers for MethylFolate sensitivity. If you feel jittery, anxious, angry, or have insomnia when taking MethylFolate, check your MTHFS status in the raw data to see if Folinic Acid is a safer option.

Follow Up Testing

You are genetically prone to MethylFolate deficiency. Homocysteine, RBC Folate, and SAM/SAH ratio tests should be ordered by your doctor to confirm.

You have a homozygous variation on one of the Folate receptors. This can lead to low levels of Folate inside the cell.

A RBC Folate test can verify your need for supplementation.

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Vitamin A & Your Genetics Expanded

Vitamin A is essential for proper vision, growth, immune function, and gut health. There are two types of vitamin A: retinoids and carotenoids. Carotenoids are found in orange plants, such as carrots, and are precursors to retinoids (the bioavailable form). Retinol is the active form that is required for health.

Vitamin A - BCMO1

When most people think about increasing their vitamin A levels, they typically reach for a carrot or orange-colored vegetable. However, this is a carotenoid, not a retinoid or retinol. Our bodies have to convert carotenoids into retinoids by an enzyme called BCMO1. Some people have issues in BCMO1 that slow down their ability to form retinol from beta carotene. Your test checked for five different variations that might slow down retinal formation within your body. Consider working with a provider to monitor your vitamin levels.

Low Vitamin A Symptoms

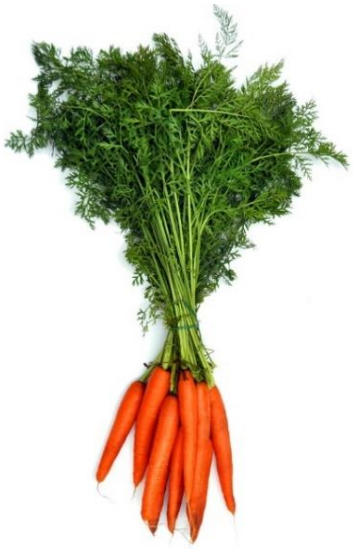
Vision issues
Infertility
Mood disorders
Skin problems
Thyroid dysfunction
Growth delays
Infections
Chronic Infections

Dietary Sources Of Retinoids

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

High Vitamin A Symptoms

Hair loss
Liver damage
Mental confusion



Your Results

You have multiple heterozygous variants on BCMO1. This alone should not lead to Vitamin A deficiency. Test micronutrients yearly to determine your need for supplementation.

Vitamin A Caution

Vitamin A is a fat soluble vitamin and there are studies that show excessive intake can lead to toxic levels. High levels of retinol might contribute to increased levels of heart disease and cancer. Please discuss supplementation with a trained provider and monitor blood retinol levels.

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Inflammation & Your Genetics

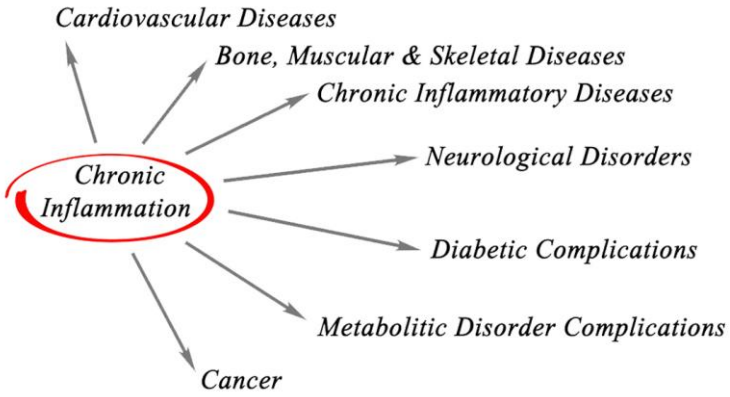
Inflammation is a natural part of our immune system that is used to protect us; however, it can become overactive. This increase in inflammation can cause many problems, such as cardiovascular, neurological, and autoimmune diseases. The Standard American Diet (SAD) is full of inflammatory foods and chemicals that add to this disease process. Your genes make you more susceptible to inflammation. Maintaining low levels of inflammation is the key to health.

Anti-Inflammatory Foods

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

Pro-Inflammatory Foods

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



Other Causes of Inflammation

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

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

Generalized Inflammation

You do not have the genetic marker for increased levels of inflammation. There may still be inflammation present.

Arachidonic Acid

You are not genetically prone to high or low levels of the pro-inflammatory fatty acid, Arachidonic Acid.

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Detoxification & Your Genetics

Every day, we are exposed to hundreds of toxic chemicals in our environment. Our bodies also make toxic metabolic waste that has to be filtered hourly. Many of these pathways can be slowed down by different genetic variations. This section will break down some of your variations.

Insecticide Sensitivity

Organophosphate insecticides are one of the most toxic substances on the planet. They can cause diarrhea, PDD, autism, depression, aggression, and other emotional conditions. Children exposed to these have twice the risk of autism and PDD. Children tend to be more susceptible to insecticides.

You are genetically sensitive to pesticides. Consume organic foods, use a water filter, and avoid pesticides.

Acetaminophen

Due to the prevalence of acetaminophen use, knowing your genetic potential for toxic side effects is crucial. It has been associated with liver conditions, asthma, autism, GI issues, acidosis, blood cancers, and immune system depression. These are due to lowered glutathione levels and liver involvement.

You are not genetically predisposed for a toxic response to acetaminophen use. You should still consider natural alternatives, as it reduces Glutathione when used.

Glutathione

Glutathione is our master antioxidant and detoxifying molecule. Oxidative stress and toxic exposures can cause low levels of glutathione. Those with genetic predisposition to low levels may be more susceptible to the effects of environmental toxins. MTHFR and methylation SNPs can also affect glutathione levels.

You are genetically predisposed to reduced Glutathione production. Consider organic acid testing.

Women's Health

In women, excessive levels of estrogen can lead to many conditions, including anxiety, fertility issues, and cancer. There are certain genetic situations that might limit someone's ability to remove estrogen from the body, which will increase estrogen levels.

Estrogen Levels

You have one of the four genetic markers associated with conditions in estrogen metabolism. Monitor hormones with your doctor.

4-OH Estradiol

If you are female, you have a genetic variant associated with increased levels of 4-OH-Estradiol, which can be highly reactive. You should evaluate 4-OH-Estradiol levels yearly and seek appropriate medical intervention if needed.

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APoE & Your Genetics

Apolipoprotein E (APOE) is a gene that codes for a transport lipoprotein that carries fats and cholesterol throughout the body. There are several E types, namely E2, E3, and E4. Both E1 and E5 exist; however, they are extremely rare. Most of the population carries the E3 status, and it is considered neutral for disease risk. Everyone has two E types (example: E2/E2, E3/E4, E4/E4, E3/E4 etc.), where one type is inherited from each parent. APOE status plays a role in cardiovascular disease and Alzheimer's risk. Exercise, especially lifting, climbing, and movement-based exercises are beneficial for all types.

E4 Risk Factors

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

E2 Risk Factors & Benefits

Hyperlipoproteinemia Type III
Elevated Triglycerides & LDL
Insulin & Glucose Concerns
Less risk for Alzheimer's
Vertebral Fractures
Neuro-protective
Vascular disease
Psoriasis

E4 Diet Recommendations

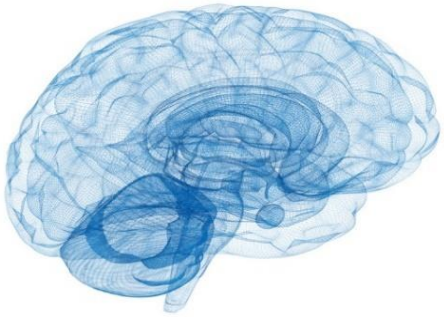
Intermittent Fasting
Mediterranean, Low fat, or Paleo Diets
Avoid alcohol & saturated fat
Limit Seafood that is high in mercury
Limit cholesterol intake
Consider monitoring iodine levels
Consider regular sauna visits

E2 Diet Recommendations

Mediterranean Diet
Low Glycemic Diet
Intermittent Fasting
Avoid Refined Carbs
Paleo Diet
Low Fat

Your APOE Status

Your Results: E2/E3



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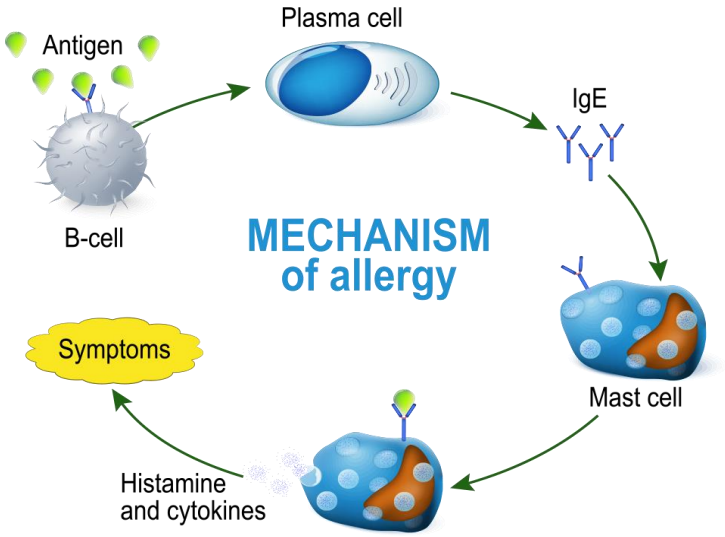
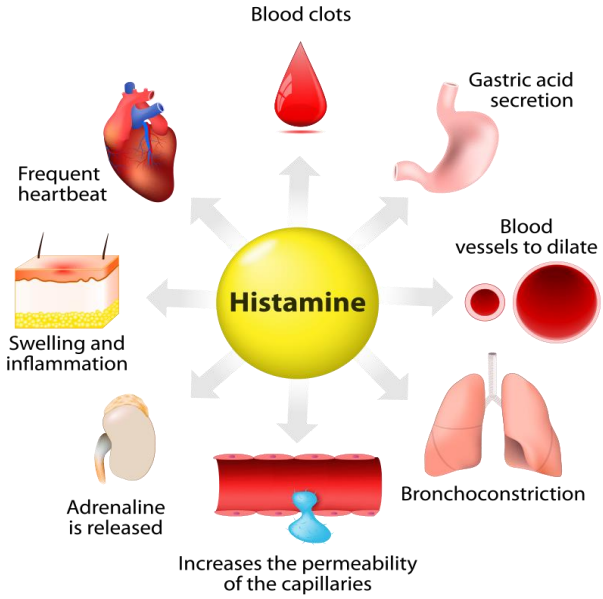
Histamine & Your Genetics

Histamine is commonly known as an immune system chemical that is released during mast cell degranulation or when exposed to allergens. However, it is also a neurotransmitter in the brain and plays a role in digesting food in the stomach. In humans, histamine is broken down by two main pathways, Histamine N-Methyltransferase (HNMT) and Diamine Oxidase (DAO/AOC1). Excessive histamine can cause numerous issues in the body, and there are some genetic predispositions that enhance these issues.





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/Migraines
Nasal Congestion
Fatigue/Adrenal Fatigue
Irregular Menstrual Cycles
Digestive Issues
Anxiety
Blood Pressure Issues

DAO (AOC1)

The DAO Enzymes is responsible for breaking down dietary histamine and histamine outside of your cells. It requires adequate levels of copper and can be inactivated by certain drugs and curcumin.

You have one heterozygous variant in the DAO(AOC1) gene. This may reduce DAO enzyme activity. Consider digestive enzymes.

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.

You have one heterozygous variation. This genetic variation does not increase cellular histamine. If you are experiencing symptoms, reduce environmental triggers (i.e., stress, allergens, toxins, etc.).

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MAO & Your Genetics

*Please see your physician before making nutritional changes.

Monoamine oxidase (MAO) has two types, A and B, and plays a role in the oxidation of neurotransmitters. MAOA is chiefly responsible for the oxidation of serotonin and norepinephrine, while MAOB oxidizes phenylethylamine. Both oxidize dopamine. Each genetic variation of MAO creates different outcomes of the enzyme. MAO is also found on the X chromosome, so males who inherit the variation are technically hemizygous. Our algorithm, however, reports it as homozygous since we do not know the sex of each person performing this test. If your results suggest you have decreased MAO activity, it is suggested that you avoid cheese and other fermented/aged foods that are high in tyramine.

MAO-A (RS6323)

You have the slower form of the MAO-A Enzyme. If you have symptoms associated with Slow MAO, consider the nutritional support listed below.

MAO-A (RS72554632)

No variants detected. This should not cause symptoms.

MAO-B

Possible decrease in MAO activity. Follow SLOW MAO suggestions below. Possible elevation in histamine. Use Low Tyramine Diet if symptoms occur.

Fast MAO

A fast MAO enzyme will significantly decrease neurotransmitter levels and create symptoms of deficiency. Depression, anxiety, and low mood are common symptoms. Your practitioner may want to try nutraceuticals like St. Johns Wort, 5-HTP, tyrosine, resveratrol, B vitamins, sun and light exposure to help support a healthy mood.

Slow MAO

A slow MAO enzyme will allow for greater levels of neurotransmitters and cause symptoms of excess. Increased aggression and lack of empathy are common. In general, it is recommended to avoid caffeine, smoking, and stress when possible. Utilizing meditation techniques, trying a low tyramine diet, and insuring proper B2, zinc and hormone levels are all possible options to support a healthy mood.

Low Serotonin

Anxiety / Depression
Insomnia
Loss of pleasure
Paranoia
Weight Issues
Inner rage
Support:
5-HTP & St. John's Wort

Low Dopamine

Depression / Hopelessness
Lack of Motivation
Brain Fog/ Fatigue
Weight Issues
Low Libido
GI Issues
Support: Tyrosine, Bacopa

High Serotonin

Headaches
Diarrhea
Muscle Twitching
Confusion
Seizures
High Blood Pressure
Support: B2, B5

High Dopamine

Excessive Energy
ADD/ADHD
Anxiety
Agitation
Insomnia
Addiction
Support: B2, Methylation &

Low Norepinephrine

Brain Fog
Depression
Low Blood Pressure
Adrenal Fatigue
Support: Vit. C,
Copper Balancing, Tyrosine

Low PEA

Brain Fog
Depression
Difficulty Paying
Attention
Incomplete Thoughts
Support: B6
DL-phenylalanine

High Norepinephrine

Anxiety
Heart Palpitations
Sweating
Constipation
Support:
Methylation & B2

High PEA

Mind Racing
Insomnia
Anxiety
Schizophrenia
Support: Methylation &
L-Threonine

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COMT & Your Genetics

*Please see your physician before making nutritional changes.

Catechol-O-methyltransferase (COMT) is a gene that creates an enzyme that breaks down dopamine, norepinephrine, epinephrine, and estrogen. These chemicals play a major role in mood, stress response, and productivity. Estrogen needs to be balanced and reduced appropriately to avoid issues. COMT does require the methylation cycle, with SAMe and magnesium being required in adequate amounts. It has been observed that individuals with slower COMT tend to be sensitive to methyl donors. In these cases, non-methylated vitamins like Folinic Acid and Hydroxocobalamin might be better options. People who are sensitive to these tend to have mood swings and anger issues. It has also been observed that carriers of the VDR-TAQ variation have additional risks.

COMT V158M	COMT H62H	VDR-TAQ
You have a fast COMT. Warrior tendencies. If you have symptoms associated with Fast COMT, consider the nutritional support listed below.	No variants detected. This should not cause symptoms.	You have a heterozygous variation. No influence on COMT activity.

Fast COMT

Fast versions of the COMT enzyme are associated with decreased levels of neurotransmitters like dopamine. People with this have been shown to have higher pain thresholds, are capable of operating under adverse stress (The Warrior Gene), and have lower levels of anxiety.

Low Dopamine

Depression Lack of Motivation Fatigue Focus Issues	Constipation GERD Muscle Cramps	**Support**: Tyrosine Bacopa

Low Epinephrine

Depression Restless Leg	Migraines Sleep Disorders	**Support**: Methionine Tyrosine

Low Norepinephrine

Focus Issues Depression	Brain Fog Low Blood Pressure	**Support**: Tyrosine Vit. C Copper Balancing

Slow COMT

Slower versions of the COMT enzyme are associated with increased levels of neurotransmitters like dopamine. This has been shown to lower pain thresholds, increase a person's sensitivity to stress, and increase anxiety (The Worrier Gene). However, these individuals typically have an advantage at memory and attention based tasks.

High Dopamine

ADD/ADHD Anxiety Excessive Energy	Insomnia Addiction Mania	**Support**: Riboflavin Vit. C Methylation

High Epinephrine

Anxiety Sweating Heart Palpitations	Weight Loss Constipation	**Support**: Adaptogens Phosphatidylserine

High Norepinephrine

Anxiety Heart Palpitations	Sweating Constipation	**Support:** Methylation Riboflavin

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Your Genetic Summary

B12 Levels	• You have a risk for low serum Vitamin B12 levels. Use organic acid or homocysteine testing to verify your need for B12.
Methyl-B12	• You have one of the two genetic markers that create the need for Methylcobalamin supplementation. Use organic acid or homocysteine testing to verify your need for B12.
B12 Sensitivity	• You have one of the five genetic markers for Methylcobalamin sensitivity. If you feel anxious, jittery, or have insomnia when using methylcobalamin, you should use Hydroxocobalamin if additional B12 is needed.
Adeno-B12	• There are no genetic indications that you need Adenosylcobalamin supplementation. Adenosylcobalamin could be used in cases of fatigue.
Vitamin A	• You have multiple heterozygous variants on BCMO1. This alone should not lead to Vitamin A deficiency. Test micronutrients yearly to determine your need for supplementation.
Vitamin D	• There are no indications of genetic Vitamin D metabolism issues.
Folate/MTHFR	• You have two copies of the C677T MTHFR variation. This can result in a signficant decrease in conversion of dietary Folate into MethylFolate. Consider homocysteine and RBC Folate testing.
Folate Sensitivity	• You have one of the five genetic markers for MethylFolate sensitivity. If you feel jittery, anxious, angry, or have insomnia when taking MethylFolate, check your MTHFS status in the raw data to see if Folinic Acid is a safer option.
Dietary Histamine	• You have one heterozygous variant in the DAO(AOC1) gene. This may reduce DAO enzyme activity. Consider digestive enzymes.
Cellular Histamine	• You have one heterozygous variation. This is probably of little impact on HNMT activity.
DHA Fish Oil	• You are genetically predisposed to Omega 3 Fatty Acid deficiency, specifically due to an inability to produce DHA. Consider supplementing with high DHA fish oil. Test Omega ratios.
Phos-Choline	• You have two of the four genetic markers associated with Phosphatidylcholine deficiency. Consider supplementing if support is needed for brain or liver health and pregnancy.
Arachidonic Acid	• You are not genetically prone to high or low levels of the pro-inflammatory fatty acid, Arachidonic Acid.
Inflammation	• You do not have the genetic marker for increased levels of inflammation. There may still be inflammation present.
Estrogen levels	• You have one of the four genetic markers associated with conditions in estrogen metabolism. Monitor hormones with your doctor.
Bad Estrogen	• If you are female, you have a genetic variant associated with increased levels of 4-OH-Estradiol, which can be highly reactive. You should evaluate 4-OH-Estradiol levels yearly and seek appropriate medical intervention if needed.
Pesticides	• You are genetically sensitive to pesticides. Consume organic foods, use a water filter, and avoid pesticides.
Glutathione	• You are genetically predisposed to reduced Glutathione production. Consider organic acid testing.
Probiotic	• There are no probiotic recommendations based on some of your results. See the box below if there are additional recommendations.
Secretor Status	• FUT2 Secretor. There are no probiotic recommendations associated with this variant.

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MaxGen PTID#: P186.1

SNP Report

Gene	RS#	Result	Client	Minor	Short Description
AHCY-01	rs819147	-- Wild Type	TT	C	No genetic cause for low homocysteine or glutathione.
APOE	rs429358	-- Wild Type	TT	C	See APOE page for details. If rs 7412 is T =E2 If rs7412 is C = E3 (normal)
APOE	rs7412	-+ Heterozygous	CT	T	See APOE page for details. If rs429358 is C = E1 (Rare) If rs429358 is T = E2
BCMO1	rs11645428	-+ Heterozygous	GA	A	Genetic cause for Vitamin A deficiency. See Vitamin A page for details.
BCMO1	rs12934922	-+ Heterozygous	AT	T	Genetic cause for Vitamin A deficiency. See Vitamin A page for details.
BCMO1	rs6564851	-+ Heterozygous	GT	G	Genetic cause for Vitamin A deficiency. See Vitamin A page for details.
BCMO1	rs7501331	-+ Heterozygous	CT	T	Genetic cause for Vitamin A deficiency. See Vitamin A page for details.
BCMO1	rs6420424	-- Wild Type	GG	A	No genetic cause for Vitamin A deficiency.
CBS	rs28934891	-+ Heterozygous	TC	T	Genetic cause for reduced CBS enzyme activity. Test homocysteine.
CBS	rs4920037	-+ Heterozygous	GA	A	Genetic cause for reduced CBS enzyme activity. Test homocysteine.
CBS	rs2851391	++ Homozygous	TT	T	Genetic cause for reduced CBS enzyme activity. Test homocysteine.
CBS 360	rs1801181	++ Homozygous	AA	A	Genetic cause for upregulated CBS enzyme activity. Test homocysteine.
CBS 699	rs234706	-+ Heterozygous	GA	A	Genetic cause for upregulated CBS enzyme activity. Test homocysteine.
COMT 61 P199P	rs769224	-- Wild Type	GG	A	No genetic cause for down regulation of COMT.
COMT H62H	rs4633	-- Wild Type	CC	T	No genetic cause for down regulation of COMT.
COMT L136L	rs4818	++ Homozygous	GG	G	Genetic cause for increased pain. See COMT page for details.
COMT V158M	rs4680	-- Wild Type	GG	A	Fast COMT (Warrior) gene. See COMT page for details.
CYP1B1 L432V	rs1056836	++ Homozygous	GG	G	Genetic cause for elevated 4-OH estradiol. Test hormones with your doctor.
CYP2E1 *6	rs6413432	-- Wild Type	TT	A	No genetic cause for NAPQI toxicity from Acetaminophen.
DAOA/DAAO	rs3741775	-+ Heterozygous	CA	C	Genetic risk for Schizophrenia. Test Vitamin B2 levels. Consider SAMe.
DAO (AOC1)	rs10156191	-+ Heterozygous	CT	T	Genetic cause for reduced DAO enzyme activity. See Histamine page for details.
DHFR	rs1643649	-- Wild Type	TT	C	No genetic cause for low tetrahydrofolate.
Factor 5	rs6025	-- Wild Type	CC	T	No genetic cause for increased risk of thrombosis.
FADS1	rs174548	-- Wild Type	CC	G	No genetic cause for phosphatidylcholine deficiency.
FADS1(MYRF)	rs174537	-+ Heterozygous	GT	T	No genetic cause for low or high Arachidonic Acid levels.
FADS2	rs1535	-+ Heterozygous	GA	G	Genetic cause for decreased DHA production. Use fish oil high in DHA.
FOLR2	rs651933	++ Homozygous	AA	A	Genetic cause for intracellular folate deficiency. See Folate page for details.
FUT2	rs602662	-+ Heterozygous	GA	A	Genetic cause for high serum B12 levels. See B12 page for details.
FUT2	rs492602	-+ Heterozygous	GA	G	Genetic cause for high serum B12 levels. See B12 page for details.
FUT2 W143X	rs601338	-+ Heterozygous	GA	A	Genetic cause for B12 deficiency. See B12 page for details.
G6PD	rs1050828	-- Wild Type	CC	T	No genetic need to avoid IV Vitamin C & H202.
G6PD	rs1050829	-- Wild Type	TT	C	No genetic need to avoid IV Vitamin C & H202.
G6PD	rs5030868	-- Wild Type	GG	A	No genetic need to avoid IV Vitamin C & H202.
GPX1	rs1050450	-+ Heterozygous	GA	A	Genetic cause for glutathione deficiency and heavy metal toxicity. Test for both.
GSTP1	rs1138272	-- Wild Type	CC	T	No genetic cause for inability to detoxify.
GSTP1	rs1695	-- Wild Type	AA	G	No genetic cause for inability to detoxify.
HFE	rs1799945	-- Wild Type	CC	G	Genetic cause for iron deficiency anemia in women. Test full iron panel.
HFE	rs1800562	-- Wild Type	GG	A	Genetic cause for iron deficiency anemia in women. Test full iron panel.
HFE	rs1800730	-- Wild Type	AA	T	Genetic cause for iron deficiency anemia in women. Test full iron panel.
HNMT	rs1050891	-+ Heterozygous	AG	G	Genetic cause for elevated histamine. See Histamine page for details.
LRRK2	rs34637584	-- Wild Type	GG	A	No genetic risk of Parkinson's Disease.

MaxGen LABS

MaxFunction

Client Name: John Doe
Client DOB: 1/1/1999
Vial Number: Sample Report
Client Sex: Male

Referring Account: MaxGen Labs
Sample Received:
Report Date: 7/27/2022
MaxGen PTID#: P186.1

Gene	RS#	Result	Client	Minor	Short Description
MAOA T1410C	rs1137070	-- Wild Type	CC	T	Genetic cause for reduced MAO activity & elevated serotonin levels.
MAOA	rs6323	-- Wild Type	TT	G	Genetic cause for SLOW MAO-a status. See MAO page for details.
MAOA	rs72554632	-- Wild Type	CC	T	No genetic cause for MAO deficiency.
MAOB	rs1799836	++ Homozygous	CC	C	Genetic cause for decreased MAO-b activity. See MAO page for details.
**Notice: MAO is a X linked gene and is only passed down from the maternal line. Male Children are technically "hemizygous."					
MAT1A R264H	rs72558181	-- Wild Type	CC	T	No genetic cause for hypermethioniemia.
MMAB	rs2287182	-- Wild Type	CC	T	No genetic cause for methylmalonic acidemia.
MTHFS	rs6495446	-- Wild Type	CC	T	No genetic cause for folinic acid or Leucovorin avoidance. See Folate page.
MTHFD1	rs2236225	++ Homozygous	AA	A	Potential cause for 5,10 methylenetetrahydrofolate deficiency.
MTHFR A1298C	rs1801131	-- Wild Type	TT	G	No genetic cause for Folate deficiency.
MTHFR C677T	rs1801133	++ Homozygous	AA	A	Genetic cause for Folate deficiency. See Folate page for details.
MTR	rs1805087	-+ Heterozygous	GA	G	Research inconclusive
MTRR	rs1801394	-- Wild Type	AA	G	No genetic cause for B12 deficiency.
MTRR	rs1532268	++ Homozygous	TT	T	Genetic cause for B12 deficiency. See B12 page for details. Test homocysteine.
MUT	rs1141321	-+ Heterozygous	CT	T	Genetic cause for methylmalonic acidemia. Consider adenosylcobalamin.
MUT	rs9369898	-+ Heterozygous	GA	G	Genetic cause for methylmalonic acidemia. Consider adenosylcobalamin.
NOS3	rs1799983	-- Wild Type	GG	T	No genetic cause for Nitric Oxide deficiency.
NOS3	rs2070744	++ Homozygous	CC	C	Genetic risk for cardiovascular disease and low Nitric Oxide. Use l-arginine.
NQO1	rs1800566	-- Wild Type	GG	A	No genetic cause for increased oxidative stress.
PEMT	rs4244593	-- Wild Type	GG	T	No genetic cause for phosphatidylcholine deficiency.
PEMT	rs4646406	++ Homozygous	AA	A	Genetic cause for phosphatidylcholine deficiency. Consider supplementation.
PEMT	rs7946	++ Homozygous	TT	T	Genetic cause for phosphatidylcholine deficiency. Consider supplementation.
PON1 Q192R	rs662	-+ Heterozygous	CT	C	Genetic cause for insecticide sensitivity and arterial disease. Use olive oil daily.
Prothrombin (F2)	rs1799963	-- Wild Type	GG	A	No genetic cause for thrombosis or cerebral stroke.
SHMT1	rs1979277	-+ Heterozygous	GA	A	Genetic cause for inadequate methylation. Test RBC Folate and urinary B6.
SLC19A1	rs1051266	-+ Heterozygous	CT	T	Genetic cause for Folate deficiency. Test RBC Folate.
SOD1	rs2070424	-+ Heterozygous	GA	G	Genetic cause for increased SOD1 levels breaking down into peroxide.
SOD1	rs4998557	-- Wild Type	GG	A	No genetic cause for oxidative stress.
SOD2	rs2758331	-- Wild Type	CC	A	No genetic cause for oxidative stress.
SOD2	rs4880	-- Wild Type	AA	G	No genetic cause for oxidative stress.
SOD3	rs1799895	-- Wild Type	CC	G	No genetic cause for oxidative stress.
SUOX(A628C)	rs7297662	-- Wild Type	GG	A	No genetic cause for sulfite oxidase deficiency.
SUOX(S370S)	rs773115	-+ Heterozygous	CG	G	Possible sulfite oxidase deficiency. Use molybdenum supplementation.
TCN1	rs526934	-- Wild Type	AA	G	No genetic cause for B12 deficiency.
TCN2	rs1801198	-- Wild Type	CC	G	No genetic cause for B12 deficiency.
TNF	rs1800629	-- Wild Type	GG	A	No genetic cause for high inflammation.
VDR TAQ	rs731236	-+ Heterozygous	GA	G	Genetic cause for Vitamin D deficiency. See Vitamin D page for details.
VDR-BSM	rs1544410	-+ Heterozygous	CT	T	Genetic cause for Vitamin D deficiency. See Vitamin D page for details.
VDR-FOK	rs2228570	-- Wild Type	GG	A	No genetic cause for Vitamin D deficiency.

Client: Your genotype. Minor: The genotype that is found least in nature.
Wild Type: The genotype that is found most often in nature, this is reported as green. This isn't always ideal.
Homozygous: This means you tested for both copies of the minor type allele. This typically has more severe issues.
Heterozygous: : This means you tested for one copy of the minor allele and one copy of the wild type allele.