

Complete Gene Mutation Report for Customer: 028a23b7-9f46-4616-8b5a-39aa49a6e692

Instructions:

NutraHacker reports mutations (single nucleotide polymorphisms) in this uploaded genome. Genes not reported in this report are either normal, not actionable, or not currently detected by NutraHacker. The expected allele is the one seen in a normally functioning gene. The high risk alleles reported are the ones measured from the uploaded genome. NutraHacker reports the effects of these mutations as discovered by published empirical data and suggests nutritional supplements that can mitigate potential issues caused by these mutations.

This report is meant to serve as a guide for nutritional supplementation for the owner of the genome and is not applicable to any other individual. Supplement quantities and dosages are not included as they are indicated on the purchased product. Multiple recommendations for the same supplement does not mean that the dosage should be multiplied. In the case of a conflict (such as a particular vitamin being both encouraged and discouraged), the owner of the genome should assess his/her own personal biology to decide whether to include or discard that particular supplement.

NOTICE:

State law allows any person to provide nutritional advice or give advice concerning proper nutrition--which is the giving of advice as to the role of food and food ingredients, including dietary supplements. This state law does NOT confer authority to practice medicine or to undertake the diagnosis, prevention, treatment, or cure of any disease, pain, deformity, injury, or physical or mental condition and specifically does not authorize any person other than one who is a licensed health practitioner to state that any product might cure any disease, disorder, or condition.

NutraHacker reports are for scientific, educational and nutritional information only and are not intended to diagnose, cure, treat or prevent any disease, disorder or condition.

Thank you for using NutraHacker. To your health!

Gender of customer: Male

A total of 47 mutations were detected at this time for your genome out of the 195 polymorphisms assessed.

There were 15 homozygous mutations.

There were 2 sex-linked mutations.

There were 30 heterozygous mutations.

Please continue to the next page to begin your discovery process.

Category	RSID	Gene	Expected	Genotype: Risk	Genotype Freq	Gene Function	Consequences	Encourage	Avoid
Detoxification	rs2606345	CYP1A1	C	AA: 2/2	11.1603%	Phase I xenobiotic metabolism, PAH's, metabolize E2 to 2-hydroxyestradiol	Reduced function of enzyme, effects vary with race	Diindolylmethane	
Detoxification	rs72547513	CYP1A2	C	AA: 2/2	N/A	Hydroxylation or dealkylation of xenobiotics, Phase I, metabolize E2 to 2-hydroxyestradiol	CYP1A2*11 allele with approximately 5% activity of that of the CYP1A2 wild type	Induce with broccoli, Cabbage, Diindolylmethane, Glucarate, NAC, Cardamom, Sulforaphane	Curcumin, Cumin, Grapefruit
Detoxification	rs762551	CYP1A2	A	AC: 1/2	46.8902%	Hydroxylation or dealkylation of xenobiotics, Phase I, metabolize E2 to 2-hydroxyestradiol	Slow to metabolize caffeine, Main liver pathway	Induce with broccoli, Cabbage, Diindolylmethane, Glucarate, NAC, Cardamom, Sulforaphane	Curcumin, Cumin, Grapefruit
Detoxification	rs1050450	GPX1	C	AG: 1/2	39.2615%	Glutathione peroxidase functions in the detoxification of hydrogen peroxide, and is one of the most important antioxidant enzymes in humans.	Deficiency in glutathione peroxidase	Selenium, Iodine	
Detoxification	rs1800668	GPX1	C	AG: 1/2	22.4286%	Glutathione peroxidase functions in the detoxification of hydrogen peroxide, and is one of the most important antioxidant enzymes in humans.	Decreased activity of glutathione peroxidase	Selenium	
Detoxification	rs1695	GSTP1	G	AA: 2/2	48.1693%	Conjugation toxins to glutathione	Persons having the alleles AA or AG had an increase in inflammatory interleukin-6 (IL-6) upon supplementing alpha-tocopherol (the most common form of Vitamin E in a North American diet) while those with GG saw a decrease.	NAC, Whey	Vitamin E

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Detoxification	rs182420	SULT2A1	A	CT: 1/2	25.5034%	Catalyze the sulfate conjugation of many hormones, neurotransmitters, drugs, and xenobiotic compounds	Decreased enzyme function	NAC, MSM, Taurine	
Neurotransmitter Levels	rs578776	CHRNA5	T	GG: 2/2	17.0102%	Neuronal acetylcholine receptor subunit alpha-5	Increased nicotine intake		Nicotine
Neurotransmitter Levels	rs4646312	COMT	G	TT: 2/2	50.2164%	Degrades catecholamines, Phase II, inactivates hydroxy-estrogens	Decreased COMT activity	Hydroxy B12 (hydroxycobalamin)	Methyl B12, Methyl donors
Neurotransmitter Levels	rs5993882	COMT	T	GG: 2/2	6.55660%	Degrades catecholamines, Phase II, inactivates hydroxy-estrogens	Decreased COMT activity	Hydroxy B12 (hydroxycobalamin)	Methyl B12, Methyl donors
Neurotransmitter Levels	rs165722	COMT	A	CT: 1/2	48.9738%	Degrades catecholamines, Phase II, inactivates hydroxy-estrogens	Decreased COMT activity	Hydroxy B12 (hydroxycobalamin)	Methyl B12, Methyl donors
Neurotransmitter Levels	rs4633	COMT	C	CT: 1/2	48.7173%	Degrades catecholamines, Phase II, inactivates hydroxy-estrogens	Same amino acid sequence, lower expression of gene, less breakdown of catecholamines	Hydroxy B12 (hydroxycobalamin)	Methyl B12, Methyl donors
Neurotransmitter Levels	rs4680	COMT	G	AG: 1/2	48.2074%	Degrades catecholamines, Phase II, inactivates hydroxy-estrogens	Slower breakdown dopamine, oestrogen, worrier, prone to anxiety, more sensitive to green tea	Hydroxy B12 (hydroxycobalamin)	Methyl B12, Methyl donors, Cannabis
Neurotransmitter Levels	rs2241165	GAD1	A	CC: 2/2	18.8071%	Catalyzes production of GABA from glutamate	High glutamate, low GABA	Taurine, Theanine, NAC, Glycine	MSG
Neurotransmitter Levels	rs3791850	GAD1	C	AA: 2/2	1.86520%	Catalyzes production of GABA from glutamate	High glutamate, low GABA	Taurine, Theanine, NAC, Glycine	MSG
Neurotransmitter Levels	rs2072743	MAO-A	T	C: 1/1	N/A	Oxidizes serotonin, dopamine, epinephrine, norepinephrine	Increased expression MAO-A	Curcumin	
Neurotransmitter Levels	rs6323	MAO-A	G	T: 1/1	N/A	Oxidizes serotonin, dopamine, epinephrine, norepinephrine	Lower expression of MAO A	Progesterone	Curcumin, Estrogens, Androgens
Neurotransmitter Levels	rs2769605	NTRK2	C	CT: 1/2	43.9018%	Neurotrophic tyrosine kinase receptor type 2	Decreased BDNF	Theanine, Curcumin, Beta-alanine, Lithium orotate, Phosphatidylserine	

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Folate One-Carbon Metabolism / Methylation (FOCM)	rs651852	BHMT08	T	CT: 1/2	48.0752%	Methylates homocysteine to methionine	Downregulation	Phosphatidylcholine, TMG, Phosphatidylserine, Zinc	
Folate One-Carbon Metabolism / Methylation (FOCM)	rs1801181	CBS	G	AG: 1/2	38.8293%	Adds l-serine to homocysteine to produce l-cystathionine	Upregulation, high taurine, high ammonia, high sulfates, decrease in glutathione synthesis	Ornithine/Arginine, Manganese, Molybdenum, Zinc, SAMe inhibits, CoQ10	Methyl donors, Vitamin B6 (P-5-P form ok), Taurine, Sulfates, BCAA
Folate One-Carbon Metabolism / Methylation (FOCM)	rs1643649	DHFR	T	CT: 1/2	27.2580%	Reduces dihydrofolate to tetrahydrofolate	Decreased function of enzyme	Reduced forms of folate, Glycine	Green tea, EGCG
Folate One-Carbon Metabolism / Methylation (FOCM)	rs2236225	MTHFD1	G	AA: 2/2	13.0933%	Three distinct enzymatic activities related to folate	Increased requirement for choline	Choline	
Folate One-Carbon Metabolism / Methylation (FOCM)	rs1801131	MTHFR	A	GT: 1/2	0.06720%	Converts folic acid to 5-methyltetrahydrofolate	Low BH4, excess ammonia, low nitric oxide, does NOT lead to high homocysteine, however high superoxide	L-methylfolate, Vitamin B3, Potassium, Ornithine, Vitamin B6, Vitamin B12, Vitamin C, Rooibos, Manganese	Folinic acid, Folate
Folate One-Carbon Metabolism / Methylation (FOCM)	rs1801133	MTHFR	C	AG: 1/2	39.5976%	Converts folic acid to 5-methyltetrahydrofolate	When homozygous it's functioning at about 30% of normal, leads to high homocysteine, folate concentrations lower.	L-methylfolate, Vitamin B12, Riboflavin for high blood pressure, Ribo-5-phosphate	Folinic acid, Folate
Folate One-Carbon Metabolism / Methylation (FOCM)	rs2066470	MTHFR	C	AG: 1/2	16.4288%	Converts folic acid to 5-methyltetrahydrofolate	Possible decreased expression, high homocysteine, low concentrations folate.	L-methylfolate, Vitamin B12, Riboflavin for high blood pressure, Ribo-5-phosphate	Folinic acid, Folate
Folate One-Carbon Metabolism / Methylation (FOCM)	rs1805087	MTR	A	GG: 2/2	4.79560%	Converts homocysteine into methionine	Upregulation that can deplete methyl-b12.	Methyl B12, L-methylfolate, Lithium orotate, Grapeseed extract	

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Folate One-Carbon Metabolism / Methylation (FOCM)	rs1801394	MTRR	A	AG: 1/2	49.3785%	Methylates, recycles vitamin b12	Poor methylation of Vitamin B12 leading to higher homocysteine levels.	Methyl B12, L-methylfolate	
Folate One-Carbon Metabolism / Methylation (FOCM)	rs7946	PEMT	C	CT: 1/2	48.4137%	Converts phosphatidylethanolamine to phosphatidylcholine	Fatty liver due to low choline	Phosphatidylcholine	
HPA axis / Endocrine	rs2234693	ESR1	T	CT: 1/2	49.5149%	Estrogen receptor alpha	Female health affected	Diindolylmethane	
HPA axis / Endocrine	rs9340799	ESR1	A	AG: 1/2	39.4495%	Estrogen receptor alpha	Female health affected	Diindolylmethane	
HPA axis / Endocrine	rs1256030	ESR2	C	AG: 1/2	47.4890%	Estrogen receptor beta	Female health affected	Diindolylmethane	
HPA axis / Endocrine	rs1256065	ESR2	A	GT: 1/2	39.8300%	Estrogen receptor beta	Female health affected	Diindolylmethane	
HPA axis / Endocrine	rs1866388	NR3C1	G	AA: 2/2	60.1431%	Glucocorticoid receptor	Mutation associated with generalized glucocorticoid resistance, high cortisol, CFS	Phosphatidylserine, Possibly ketogenic diet	
HPA axis / Endocrine	rs852977	NR3C1	G	AA: 2/2	56.1304%	Glucocorticoid receptor	Mutation associated with generalized glucocorticoid resistance, high cortisol, CFS	Phosphatidylserine, Possibly ketogenic diet	
HPA axis / Endocrine	rs1544410	VDR	G	TT: 2/2	9.58600%	Vitamin D Receptor	Downregulated Vitamin D receptor	Vitamin D3, Sage, Rosemary	Methyl donors
HPA axis / Endocrine	rs731236	VDR	A	AG: 1/2	43.3464%	Vitamin D Receptor	Downregulated Vitamin D receptor, can affect dopamine levels	Vitamin D3, Sage, Rosemary	Methyl donors
Cardiovascular	rs4654748	ALPL	C	CT: 1/2	45.9348%	alkaline phosphatase	Lower concentration b6	Vitamin B6	
Cardiovascular	rs5882	CETP	G	AA: 2/2	33.5376%	Cholesterol ester transfer protein	Cholesterol levels affected	Low fat diet	
Cardiovascular	rs662	PON1	A	CT: 1/2	49.3911%	Major antiatherosclerotic component of HDL	Glutamine high activity, arginine low activity, position 192, Low serum PON1 activity in NIDDM may be related to an increased tendency to lipid peroxidation and may also increase susceptibility to toxicity from organophosphate exposure.	Omega-3 fatty acids like fish oil, Fat soluble antioxidants, Vitamin K	High fat diet
Cardiovascular	rs2073658	USF1	G	CT: 1/2	29.5620%	Upstream Stimulatory Factor 1	Association higher cholesterol, metabolic syndrome	Fiber	High fat diet
Cardiovascular	rs2516839	USF1	G	CT: 1/2	49.8381%	Upstream Stimulatory Factor 1	Cholesterol levels affected	Fiber	High fat diet

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Digestion / Elimination	rs11645428	BCMO1	G	AG: 1/2	24.3749%	Key enzyme in beta-carotene metabolism to vitamin A.	reduced catalytic activity by 51%	Vitamin A	
Digestion / Elimination	rs6420424	BCMO1	A	AG: 1/2	49.4600%	Key enzyme in beta-carotene metabolism to vitamin A.	reduced catalytic activity by 59%	Vitamin A	
Digestion / Elimination	rs6564851	BCMO1	G	GT: 1/2	49.5664%	Key enzyme in beta-carotene metabolism to vitamin A.	reduced catalytic activity by 48%	Vitamin A	
Digestion / Elimination	rs7501331	BCMO1	C	CT: 1/2	27.3055%	Key enzyme in beta-carotene metabolism to vitamin A.	poor converter	Vitamin A	
Energy / Oxidation	rs10370	SOD2	G	TT: 2/2	N/A	Mitochondrial Superoxide Dismutase 2	Decreased gene function. Noise induced hearing loss, rs10370 'TT', rs4880 'GG' diplo-genotype (diplotype) was associated with more gray matter shrinkage in 76 individuals who report chronic high levels of alcohol consumption.	Manganese, Vitamin E in tocotrienol form	Alcohol, Noise (greater chance for hearing loss)
Energy / Oxidation	rs4880	SOD2	A	AG: 1/2	48.9123%	Mitochondrial Superoxide Dismutase 2	Decreased gene function. Noise induced hearing loss, rs10370 'TT', rs4880 'GG' diplo-genotype (diplotype) was associated with more gray matter shrinkage in 76 individuals who report chronic high levels of alcohol consumption.	Manganese, Vitamin E in tocotrienol form	Alcohol, Noise (greater chance for hearing loss)