

## Detox and Methylation Mutation Report for Customer: 9f046afa-4e3c-4b8c-b63e-ca7988b5149b

### Instructions:

This FREE NutraHacker report contains detox and methylation mutations (single nucleotide polymorphisms) in this uploaded genome. Genes not reported in this report are either normal, not actionable, available only in the paid service offered by NutraHacker, or are 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: Female

A total of 14 mutations were detected at this time for your genome out of the 58 polymorphisms assessed.

There were 2 homozygous mutations.

There were 12 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	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	rs1799853	CYP2C9	C	CT: 1/2	16.3208%	Metabolizes coumadin, NSAID's, aspirin, phenytoin and sulfonylureas	20% reduction in activity heterozygous, 40% reduction homozygous		Substrates of this enzyme
Detoxification	rs1208	NAT2	A	AG: 1/2	47.2515%	This gene encodes an enzyme that functions to both activate and deactivate arylamine and hydrazine drugs and carcinogens.	Fast metabolizer	NAC, Vitamin B2, Vitamin B3, Vitamin B5, Molybdenum	
Detoxification	rs1799931	NAT2	G	AG: 1/2	8.81830%	This gene encodes an enzyme that functions to both activate and deactivate arylamine and hydrazine drugs and carcinogens.	Slow metabolizer	NAC, Vitamin B2, Vitamin B3, Vitamin B5, Molybdenum	
Detoxification	rs1801280	NAT2	T	CT: 1/2	46.1933%	This gene encodes an enzyme that functions to both activate and deactivate arylamine and hydrazine drugs and carcinogens.	Decreased activity	NAC, Vitamin B2, Vitamin B3, Vitamin B5, Molybdenum	
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
Folate One-Carbon Metabolism / Methylation (FOCM)	rs234706	CBS	G	AG: 1/2	39.9436%	Adds l-serine to homocysteine to produce l-cystathionine	Increased responsiveness to homocysteine-lowering effects of folic acid. Marginally increased disposal of homocysteine.	Vitamin B6	

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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)	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)	rs1979277	SHMT1	G	AG: 1/2	41.8601%	Conversion of tetrahydrofolate to 5,10-methylenetetrahydrofolate. Interconverts serine and glycine	Decreased enzyme activity, homocysteine accumulation	5-methyl folate, Zinc, Treat for leaky gut	Folate
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	GG: 2/2	10.0873%	Vitamin D Receptor	Downregulated Vitamin D receptor, can affect dopamine levels	Vitamin D3, Sage, Rosemary	Methyl donors
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)