

Category	RSID	Gene	Expected	Genotype: Risk	Genotype Freq	Gene Function	Consequences	Encourage	Avoid
Detoxification	rs1048943	CYP1A1	A	CT: 1/2	0.32660%	Phase I xenobiotic metabolism, PAH's, metabolize E2 to 2-hydroxyestradiol. Is also known as AHH (aryl hydrocarbon hydroxylase). It is involved in the metabolic activation of aromatic hydrocarbons (polycyclic aromatic hydrocarbons, PAH)	Increased function of enzyme, increased activation of carcinogens	Fiber, Glutathione, NAC	Smoking, Charred meats
Detoxification	rs2606345	CYP1A1	C	AC: 1/2	44.4935%	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	rs1057910	CYP2C9	A	AC: 1/2	8.87210%	Metabolizes coumadin, NSAID's, aspirin, phenytoin and sulfonylureas	Minimal enzyme activity		Substrates of this enzyme
Detoxification	rs1065852	CYP2D6	C	AG: 1/2	30.2957%	Detoxifies 20% of prescription drugs	Poor metabolizer		Substrates of this enzyme
Detoxification	rs2740574	CYP3A4	T	CT: 1/2	28.9438%	Detoxifies prescription drugs and most steroid hormones	Decreased enzyme function		Quercetin, Bioperine, Grapefruit, Milk thistle

Category	RSID	Gene	Expected	Genotype: Risk	Genotype Freq	Gene Function	Consequences	Encourage	Avoid
Detoxification	rs1695	GSTP1	G	AG: 1/2	42.4696%	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
Detoxification	rs1041983	NAT2	C	CT: 1/2	N/A	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	
Detoxification	rs1799930	NAT2	G	AG: 1/2	38.4846%	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	rs1800566	NQO1	C	AG: 1/2	35.5447%	Reduces quinones to hydroquinones (vitamin E alpha-tocopherol quinone, menadione, benzene quinones)	This is a null mutation and removal of carcinogenic quinones is affected negatively		
Neurotransmitter Levels	rs6265	BDNF	G	CT: 1/2	28.7226%	Brain-derived neurotrophic factor, supports growth and health of neurons	Associated with mental wellness	Lithium orotate, Curcumin, Theanine	
Neurotransmitter Levels	rs578776	CHRNA5	T	GG: 2/2	17.0102%	Neuronal acetylcholine receptor subunit alpha-5	Increased nicotine intake		Nicotine
Neurotransmitter Levels	rs165722	COMT	A	CC: 2/2	32.6762%	Degrades catecholamines, Phase II, inactivates hydroxy-estrogens	Decreased COMT activity	Hydroxy B12 (hydroxycobalamin)	Methyl B12, Methyl donors
Neurotransmitter Levels	rs4646312	COMT	G	CT: 1/2	41.2943%	Degrades catecholamines, Phase II, inactivates hydroxy-estrogens	Decreased COMT activity	Hydroxy B12 (hydroxycobalamin)	Methyl B12, Methyl donors
Neurotransmitter Levels	rs6269	COMT	A	AG: 1/2	44.7595%	Degrades catecholamines, Phase II, inactivates hydroxy-estrogens	Decreased COMT activity	Hydroxy B12 (hydroxycobalamin)	Methyl B12, Methyl donors

Category	RSID	Gene	Expected	Genotype: Risk	Genotype Freq	Gene Function	Consequences	Encourage	Avoid
Neurotransmitter Levels	rs2391191	DAOA	G	AA: 2/2	19.4739%	D-amino acid oxidase activator, which degrades D-serine, a potent activator of NMDA receptors	Associated with cognitive manic symptoms	Idebenone, Piracetam, Magnesium, Taurine, Lithium orotate	
Neurotransmitter Levels	rs701567	DAOA	G	TT: 2/2	23.5241%	D-amino acid oxidase activator, which degrades D-serine, a potent activator of NMDA receptors	Associated with cognitive manic symptoms	Idebenone, Piracetam, Magnesium, Taurine, Lithium orotate	
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	rs1137070	MAO-A	C	T: 1/1	N/A	Oxidizes serotonin, dopamine, epinephrine, norepinephrine	Increased expression MAO-A	Curcumin	
Neurotransmitter Levels	rs1799836	MAO-B	A	C: 1/1	N/A	Oxidizes phenethylamine, benzethylamine, dopamine	Decreased activity MAO B enzyme		Quercetin, Other MAOB inhibitors
Neurotransmitter Levels	rs2283729	MAO-B	G	A: 1/1	7.93250%	Oxidizes phenethylamine, benzethylamine, dopamine	Lower mental energy		Quercetin, Other MAOB inhibitors
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	
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)	rs2236225	MTHFD1	G	AG: 1/2	46.1659%	Three distinct enzymatic activities related to folate	Increased requirement for choline	Choline	

Category	RSID	Gene	Expected	Genotype: Risk	Genotype Freq	Gene Function	Consequences	Encourage	Avoid
Folate One-Carbon Metabolism / Methylation (FOCM)	rs6922269	MTHFD1L	G	AG: 1/2	30.5454%	MTHFD1L is an enzyme involved in THF synthesis in mitochondria	Mitochondrial folate abnormality	Vitamin B12, Choline	
Folate One-Carbon Metabolism / Methylation (FOCM)	rs1801131	MTHFR	A	GG: 2/2	0.00710%	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)	rs7946	PEMT	C	CT: 1/2	48.4137%	Converts phosphatidylethanolamine to phosphatidylcholine	Fatty liver due to low choline	Phosphatidylcholine	
HPA axis / Endocrine	rs2241766	ADIPOQ	T	GT: 1/2	18.9810%	Important adipokine involved in the control of fat metabolism and insulin sensitivity, with direct anti-diabetic, anti-atherogenic and anti-inflammatory activities.	Decreased adiponectin	Omega-3 fatty acids like fish oil, Coffee, Leucine, Magnesium, Fiber, Exercise	
HPA axis / Endocrine	rs1501899	CaSR	G	AG: 1/2	47.3373%	Calcium sensitive receptor	s7652589 and rs1501899 were also associated with nephrolithiasis in patients with normal citrate excretion	Vitamin K, Magnesium	Calcium
HPA axis / Endocrine	rs1801260	CLOCK	A	AG: 1/2	34.2473%	Circadian Locomotor Cycles Kaput	Late sleeping time	Be mindful of sleep time	
HPA axis / Endocrine	rs2234693	ESR1	T	CC: 2/2	20.3175%	Estrogen receptor alpha	Female health affected	Diindolylmethane	
HPA axis / Endocrine	rs9340799	ESR1	A	GG: 2/2	7.40580%	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	

Category	RSID	Gene	Expected	Genotype: Risk	Genotype Freq	Gene Function	Consequences	Encourage	Avoid
HPA axis / Endocrine	rs560887	G6PC2	T	CT: 1/2	24.9832%	This gene encodes an enzyme belonging to the glucose-6-phosphatase catalytic subunit family. These enzymes are part of a multicomponent integral membrane system that catalyzes the hydrolysis of glucose-6-phosphate, the terminal step in gluconeogenic and glycogenolytic pathways, allowing the release of glucose into the bloodstream. The family member encoded by this gene is found in pancreatic islets.	Fasting blood glucose level higher. This is actually the more common form	Chromium, Vanadium	High carb diets
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	CT: 1/2	42.7506%	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	AG: 1/2	48.7481%	Cholesterol ester transfer protein	Cholesterol levels affected	Low fat diet	
Cardiovascular	rs5275	COX2	A	AG: 1/2	47.5291%	Involved in the conversion of arachidonic acid to prostaglandin H2, an important precursor of prostacyclin and thromboxane A2, among others.	Increased response to fish oil	Omega-3 fatty acids like fish oil	

Category	RSID	Gene	Expected	Genotype: Risk	Genotype Freq	Gene Function	Consequences	Encourage	Avoid
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	rs2516839	USF1	G	CT: 1/2	49.8381%	Upstream Stimulatory Factor 1	Cholesterol levels affected	Fiber	High fat diet
Cardiovascular	rs9923231	VKORC1	C	CT: 1/2	47.9961%	Reduces vitamin K 2,3-epoxide to the enzymatically activated form.	Related to vitamin K recycling.	Vitamin K	
Digestion / Elimination	rs11645428	BCMO1	G	AA: 2/2	2.01790%	Key enzyme in beta-carotene metabolism to vitamin A.	reduced catalytic activity by 51%	Vitamin A	
Digestion / Elimination	rs6420424	BCMO1	A	GG: 2/2	20.0739%	Key enzyme in beta-carotene metabolism to vitamin A.	reduced catalytic activity by 59%	Vitamin A	
Digestion / Elimination	rs6564851	BCMO1	G	TT: 2/2	20.5608%	Key enzyme in beta-carotene metabolism to vitamin A.	reduced catalytic activity by 48%	Vitamin A	
Digestion / Elimination	rs492602	FUT2	T	GG: 2/2	20.9144%	Fucosyltransferase 2 enzyme which determines 'secretor status'	Reduced intestinal microbiota diversity but higher vitamin B12 levels	Probiotics	
Digestion / Elimination	rs601338	FUT2	G	AA: 2/2	20.6845%	Fucosyltransferase 2 enzyme which determines 'secretor status'	Reduced intestinal microbiota diversity, non secretor	Probiotics	
Digestion / Elimination	rs602662	FUT2	G	AA: 2/2	21.8525%	Fucosyltransferase 2 enzyme which determines 'secretor status'	Reduced intestinal microbiota diversity. Interferes with absorption of B12. Individuals on vegetarian diet with GG (homozygous major genotype) have significantly lower levels of vitamin B(12).	Probiotics	

Category	RSID	Gene	Expected	Genotype: Risk	Genotype Freq	Gene Function	Consequences	Encourage	Avoid
Energy / Oxidation	rs10370	SOD2	G	GT: 1/2	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)
Energy / Oxidation	rs2855262	SOD3	T	CC: 2/2	14.9428%	Manganese superoxide dismutase	Decreased gene function	Vitamin E in tocotrienol form, Manganese	