

# Biohacks Report

(DNA based Detoxification and Diet Recommendations)



## Key Genes/Variants

### Risk Gene/Variant

**CYP1A2**

Your Risk= ■ 11%

Function	Recommendation	Avoid
- Carrier of one CYP1A2*1F allele; Slow Caffeine Metabolizer. - Drug metabolism and synthesis of cholesterol, steroids and other lipids	Induce with broccoli, cabbage, cardamom	

### Risk Gene/Variant

**SOD1**

Your Risk= 0%

Function	Recommendation	Avoid
- Oxidative stress - Implicated in apoptosis and familial amyotrophic lateral sclerosis	Whey N-acetyl cysteine (NAC) is a supplement form of cysteine	Smog Pollution smoking

### Risk Gene/Variant

**NAT2**

Your Risk= ■ 38%

Function	Recommendation	Avoid
- Insulin resistance - higher incidences of cancer and drug toxicity	- Molybdenum, N-acetyl cysteine (NAC) - Vitamin B2, Vitamin B3, Vitamin B5	

### Risk Gene/Variant

**MAOA**

Your Risk= 0%

Function	Recommendation	Avoid
Lower expression of MAO A - Borderline personality disorder - Schizophrenia, anger	Progesterone	Androgens Estrogens,

### Risk Gene/Variant

**ACAT1**

Your Risk= 0%

Function	Recommendation	Avoid
Forms cholesterol esters from cholesterol	Probiotics, Vitamin B12, Low fat diet	Cholesterol

**Risk Gene/Variant****CBS**Your Risk=  10%

Function	Recommendation	Avoid
Adds l-serine to homocysteine to produce l-cystathionine	Ornithine/Arginine, Manganese, Zinc, Molybdenum, CoQ10	Alcohol, Methyl donors,
Neural tube defects, colorectal adenomas and folate pathway and conotruncal heart defects	Vitamin B2	Taurine Sulfates

**Risk Gene/Variant****MTRR**

Your Risk= 0%

Function	Recommendation	Avoid
- Methylates, recycles vitamin b12 - Risk of lung cancer among Women	Methyl B12	

**Risk Gene/Variant****GSTP1**

Your Risk= 0%

Function	Recommendation	Avoid
Increased risk of asthma with phthalate exposure	- Vitamin E and C  - High fruit and vegetable diet	plastic wrap/packs  synthetic fragrances

**Risk Gene/Variant****NAT1**

Your Risk= 0%

Function	Recommendation	Avoid
- Increased risk of smoking tobacco  - Risk for high consumption of red meat	cut back on fried meats to limit the intake of heterocyclic aromatic amines which forms when meats and seafood are grilled at high temperatures	smoking

**Risk Gene/Variant****NQO1**

Your Risk= 0%

Function	Recommendation	Avoid
- Benzene toxicity; cancer risks  - Breakdown Of benzene and chemicals found in gasoline fumes, laundry detergent, furniture wax, industrial uses, pesticides, and smoke.	green tea extract and broccoli sprouts	chemical fumes

**Risk Gene/Variant****NFE2L2**

Your Risk= 0%

Function	Recommendation	Avoid
Diminished Nrf2 expression, increased risk of lung cancer, asthma and other diseases	broccoli sprouts, Brussels sprouts, cabbage, and cauliflower activates the Nrf2 pathway	smoking

**Risk Gene/Variant**

UGT1\*

Your Risk=  7%

Function	Recommendation	Avoid
<ul style="list-style-type: none"> <li>- Transforms bilirubin, hormones, and certain drugs (aspirin, acetaminophen) into water-soluble metabolites that can then be excreted from the body.</li> <li>- Gilbert's syndrome among Asians, Crigler-Najjar syndrome type II (CN-II), and transient familial neonatal hyperbilirubinemia</li> <li>- Increased bilirubin level</li> </ul>	broccoli sprouts, Brussels sprouts, cabbage, and cauliflower	Alcohol, smoking, chemical fumes, BPA and other estrogen-mimicking compounds

**Risk Gene/Variant**

CYP2D6

Your Risk= 0%

Function	Recommendation	Avoid
<p>CYP2D6 drug metabolism - increases drugs side effects</p> <ul style="list-style-type: none"> <li>- Greater sensitivity to debrisoquine (antihypertensive drug)</li> </ul>	varying the dosage or timing of drug intake might help, otherwise, seek alternative medications	Pesticides, Beta blockers, Vitamin B3, Cocaine, CBD oil, Cimetidine, Celecoxib

**Risk Gene/Variant**

CYP2A6

Your Risk= 0%

Function	Recommendation	Avoid
<ul style="list-style-type: none"> <li>- Reduced CYP2A6 metabolism; impaired nicotine metabolism</li> <li>- Involved in caffeine metabolism</li> </ul>	quit smoking if smoker	Grapefruit juice

**Risk Gene/Variant**

CYP3A4

Your Risk= 0%

Function	Recommendation	Avoid
Metabolism of most drugs	St. John's wort after talking with your doctor	Grapefruit and pomegranate juices

**Risk Gene/Variant**

IRGM

Your Risk= 0%

Function	Recommendation	Avoid
aAssociated with essential hypertension and obesity	Fasting 8-12 hours will reduce weight and improve mood	

**Risk Gene/Variant**

AGTR1

Your Risk=  50%

Function	Recommendation	Avoid
Hypertension, High triglyceride	Mediterranean diet (fresh vegetables, fish, olive oil, nuts and whole grains)	excessive sugar intake

**Risk Gene/Variant**

rs1800592-C

Your Risk= 0%

Function	Recommendation	Avoid
High obesity risk due to low energy expenditure	Exercise and cold shower to burn fats Increase consumption of iron, polyphenols, carotenoids and omega-3 rich foods	excessive sugar intake

**Risk Gene/Variant**

BChE

Your Risk=  9%

Function	Recommendation	Avoid
- Breaks apart choline esters - Anesthesia complications	Eat Organics stop eating nightshades (potatoes, tomatoes, peppers, and eggplant) for a few days	Organophosphate Pesticides Potato that turned green and green tomato

**Risk Gene/Variant**

TRPM8

Your Risk= 0%

Function	Recommendation	Avoid
Colon-IBS	- Peppermint tea - Yogurt - Try Gluten-free	Spicy Food

**Risk Gene/Variant**

TRPV1

Your Risk= 0%

Function	Recommendation	Avoid
Colon-IBS	- Peppermint tea - Yogurt - CBD oil	Spicy Food Nickle Alcohol

**Risk Gene/Variant**


FMO3

Your Risk=  17%

Function	Recommendation	Avoid
Breaking down nitrogen-containing compounds derived from the diet. Gives strong body odor	- Vitamin B2 (riboflavin) - Fresh food	Drug interactions (ask doctor)

**Risk Gene/Variant**

COMT

Your Risk=  25%

Function	Recommendation	Avoid
- Breaks down dopamine, epinephrine, and norepinephrine - Higher risk of cardiovascular disease	Aspirin and Vitamin E for men (talk to doctor)	Women to avoid aspirin (talk to doctor)

**Risk Gene/Variant**

CYP4F2

Your Risk= 0%

Function	Recommendation	Avoid
- Converts vitaminK1 and vitaminK2 to oxidized forms - Anti-oxidant role in inflammatory response and osteoporosis	- Include fat while eating green veggies to increase your absorption - Eggs and dairy - Probiotics	Anti-coagulants  (Ask Doctor)

**Risk Gene/Variant**


VKORC1

Your Risk= 0%

Function	Recommendation	Avoid
- Recycling vitamin K back to the active form - Anti-oxidant role in inflammatory response and osteoporosis	- Include fat while eating green veggies to increase your absorption - Eggs and dairy - Probiotics	Anti-coagulants  (Ask Doctor)

**Risk Gene/Variant**

ADH1B

Your Risk=  8%

Function	Recommendation	Avoid
- Speeds up the conversion of alcohol to acetaldehyde - Vitamin A metabolism - Increase liver disease	- Zinc and niacin (B3) - Selenium	Alcohol

**Risk Gene/Variant**

ALDH2

Your Risk=  13%

Function	Recommendation	Avoid
- Speeds up the conversion of alcohol to acetaldehyde - Vitamin A metabolism - Increase liver disease	- Zinc and niacin (B3) - Selenium	Alcohol

**Risk Gene/Variant**

CBS

Your Risk=  10%

Function	Recommendation	Avoid
- Desulfation reaction that creates hydrogen sulfide - Cardiovascular disease and immune system - Homocysteinuria	- Check your homocysteine levels - Vitamin B6 - Try low-sulfur diet	caution against eating foods that contain sulfur (meat, garlic, eggs, etc)

**Risk Gene/Variant**

FGF21

Your Risk= 0%

Function	Recommendation	Avoid
- Sweet tooth (craving for sweets) - Slightly decreases in fat mass	- Ketogenic diet - Fasting 8-12 hours	Alcohol

**Risk Gene/Variant**

MC4R

Your Risk= 0%

Function	Recommendation	Avoid
Obesity	- Eat Moderately - Sleep well - Low fat diet - Exercise	- Smoking - Cannabis High fat diet - Artificial sweeteners

**Risk Gene/Variant**

FTO

Your Risk= 5%

Function	Recommendation	Avoid
Obesity	- Eat Moderately - Sleep well - Low fat diet	- Smoking - Cannabis High fat diet - Milk - Artificial sweeteners

**Risk Gene/Variant**

GRK4

Your Risk= 0%

Function	Recommendation	Avoid
- Salt intake - Hypertension	low salt diet	High salt diet

**Risk Gene/Variant**

MCM6

Your Risk= 25%

Function	Recommendation	Avoid
Lactose Intolerance	- Lactobacillus probiotics - Yogurt and fermented food - Lactose free products	Lactose products

**Risk Gene/Variant**

AMY\*

Your Risk= 0%

Function	Recommendation	Avoid
- Amylase enzyme - Ability to digest carbohydrates	- Reduce carbs - Low fat diet - Tea	High sugar and fat diet

**Risk Gene/Variant**

IL17A

Your Risk= 0%

Function	Recommendation	Avoid
- Risk of autoimmune/inflammatory conditions - Ulcerative Colitis - Psoriasis risk - Increases cancer risk	- Sunshine - Curcumin - Vitamin D3	

**Risk Gene/Variant**


PER\*

Your Risk= 0%

Function	Recommendation	Avoid
- Suppression of melatonin - Sleep disturbances	- Sleep well - Reduce blue light exposure (TV) - Wear blue-blocker eye glasses - Cherries	

**Risk Gene/Variant**

MTHFR

Your Risk=  17%

Function	Recommendation	Avoid
- Methylene tetrahydrofolate reductase enzyme converts nutrients from your diet into active vitamins, minerals, and proteins - Can cause serious genetic disorders such as homocystinuria, anencephaly, spina bifida, and others - Can cause heart disease, colon cancer, stroke, Alzheimer's disease, migrain and more	- Consume more folate and vitamin B12 - Eat a high fiber diet, vegetables, good quality protein, healthy fats, gelatin and fruits - Exercise regularly	Refined sugars  Stress  Toxins, Pollutants and House chemicals

**Risk Gene/Variant**

ACE

Your Risk=  25%

Function	Recommendation	Avoid
- Increase blood pressure - Response to saturated fats	- Low Saturated Fat diet - Barberry fruit - Hibiscus tea	Reduce butter, palm and coconut oils, cheese, and red meat

**Risk Gene/Variant**


APOA2

Your Risk=  100%

Function	Recommendation	Avoid
- Increase blood pressure - Response to saturated fats	- Low Saturated Fat diet - Barberry fruit - Hibiscus tea	Reduce butter, palm and coconut oils, cheese, and red meat

**Risk Gene/Variant**

TCF7L2

Your Risk=  6%

Function	Recommendation	Avoid
- Increase blood pressure	- Low Saturated Fat diet	Reduce butter, palm and coconut oils, cheese, and red meat
- Response to saturated fats	- Barberry fruit	
	- Hibiscus tea	

**Risk Gene/Variant**

SLC22A4

Your Risk= 0%

Function	Recommendation	Avoid
- Ergothioneine transporter in liver, kidney and intestines	Reduce corn in food	baked beans, chickpeas, and dried beans Mushrooms
- Crohn's disease		
- Intolerance of ergothioneine foods		

**Risk Gene/Variant**

UCP3

Your Risk= 0%

Function	Recommendation	Avoid
Obesity and insulin resistance	- Test your blood glucose - Reduce calorie intake	

**Risk Gene/Variant**

IRS1

Your Risk= 0%

Function	Recommendation	Avoid
- Obesity and insulin resistance	- Test your blood glucose	
- Diabetes	- Reduce calorie intake	

**Risk Gene/Variant**

BDNF

Your Risk= 0%

Function	Recommendation	Avoid
- Obesity and insulin resistance	- Test your blood glucose	
- Diabetes	- Reduce calorie intake	

**Risk Gene/Variant**

HFE

Your Risk=  7%

Function	Recommendation	Avoid
- Iron storage	- Test iron levels. Consult doctor to give Blood Regularly	Iron fortified foods and supplements
- Cardiovascular disease	- Flavonoid found in fruits and vegetables	
- Non-alcoholic fatty liver disease	- Parsely, green tea, okra and corriander to chelate iron	



**Risk Gene/Variant**

SLC23A\*

Your Risk= 0%

Function	Recommendation	Avoid
Vitamin C transporter	- Boost Vitamin C intake - Citrus fruits - Grapefruit, kiwi, strawberries, tomato and red peppers	

**Risk Gene/Variant**

BTD

Your Risk= 13%

Function	Recommendation	Avoid
- Making an enzyme called biotinidase - Recycles biotin, a B vitamin found in foods - Biotin deficiency can result in behavioral disorders, lack of coordination, learning disabilities and seizure	- Nnutritional yeast - Chicken liver - Egg yolks, nuts, meat, and dairy	Raw egg whites

**Risk Gene/Variant**

ADIPOQ

Your Risk= 0%

Function	Recommendation	Avoid
Increase Adiponectin, a hormone involved in anti-inflammation	Blueberry juice and mulberry juice	

**Risk Gene/Variant**

\*FADS\*

Your Risk= 3%

Function	Recommendation	Avoid
Converting polyunsaturated fats	- Moderate fat intake - Fish oil, flax and chia seeds	reduce vegan diet

**Risk Gene/Variant**

HLA\*

Your Risk= 4%

Function	Recommendation	Avoid
Psoriasis Risk	Fruits and veggies, especially berries, cherries, and leafy greens. Salmon, sardines, and other fish rich in omega-3 fatty acids	Alcohol

**Risk Gene/Variant**

TSHR

Your Risk= 0%

Function	Recommendation	Avoid
- Thyroid stimulating hormone receptor	Selenium	Chemical toxins (BPA, PFAS)
- Autoimmune thyroid diseases	Blocking blue light to increase melatonin	Pesticides
- Increased risk of Grave's disease	Flavonoids	Artificial Sweeteners

**Risk Gene/Variant**

ATG16L1

Your Risk=

0%

Function	Recommendation	Avoid
- Autophagy-related protein 16-1 - Increased risk of Inflammatory Bowel Diseases including Crohn's disease	Fasting Exercise Olive Oil and Mediterranean diet, Mediterranean diet	

**Risk Gene/Variant**

PDH\*

Your Risk=

0%

Function	Recommendation	Avoid
- Pathogenic for Pyruvate Dehydrogenase - Lactic acidosis	Thiamine and magnesium thiamine ketogenic diet or fasting	

**Risk Gene/Variant**

MTR

Your Risk=

0%

Function	Recommendation	Avoid
- making an enzyme called methionine synthase - Converts the amino acid homocysteine to another amino acid called methionine - Health problems associated with homocystinuria - Birth defects	- Methyl B12 Whole grains, legumes, and some meats and fish - Vegetables and fruits	Alcohol Smoking

**Risk Gene/Variant**

SUOX

Your Risk=

0%

Function	Recommendation	Avoid
- Sulfite oxidase deficiency - Neurological disorders, mental retardation, physical deformities, the degradation of the brain	- Molybdenum - Vitamin B12	Protein Malnutrition