

Your **Wellness** Report



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Just for you

After processing your data, we created a unique genetic nutrition and fitness profile just for you. You'll learn about your genetic characteristics and potential lifestyle benefits from these results.

We can explain your ideal diet type, food sensitivities and intolerances, detox and antioxidant requirements, and more thanks to our gene analysis. We can also provide you with expert dietician guidance to help you make adjustments that will improve your health and wellness.

We support a well-being strategy that emphasizes long-term, evidence-based modifications that over time can result in significant gains in activity, nutrition, and overall health.



Absolutely nothing is done with your results other than to assist you on your path to wellness. Our company does not engage in data mining. Your outcomes belong to you and you alone. Your information will never be sold or shared with third parties.

Welcome to your
Personal
Wellness
Report!

[Customer Name]

Thyrocare Technologies Limited believes that every individual has a unique genetic framework that is the gateway to understanding one's health and potential. Through cutting-edge technology and personalized analysis, we provide valuable insights catering to your specific health needs based on your genomic profiling.

Our expert team of Geneticists, Bioinformaticians, and Data scientists has ensured that each insight provided to you is based on rigorous scientific evidence and the latest research findings. Let's embark on this journey of personalized genomics to discover your unique traits, disease predisposition, and diet and nutrition requirements based on your genes. This will enable you to live your healthiest life based on personalized recommendations and lifestyle changes.

Should you have any inquiries or concerns regarding your report, please reach us at <https://www.thyrocare.com/>.

Dr. Chaitali Nikam

Consultant, Thyrocare Technologies Limited



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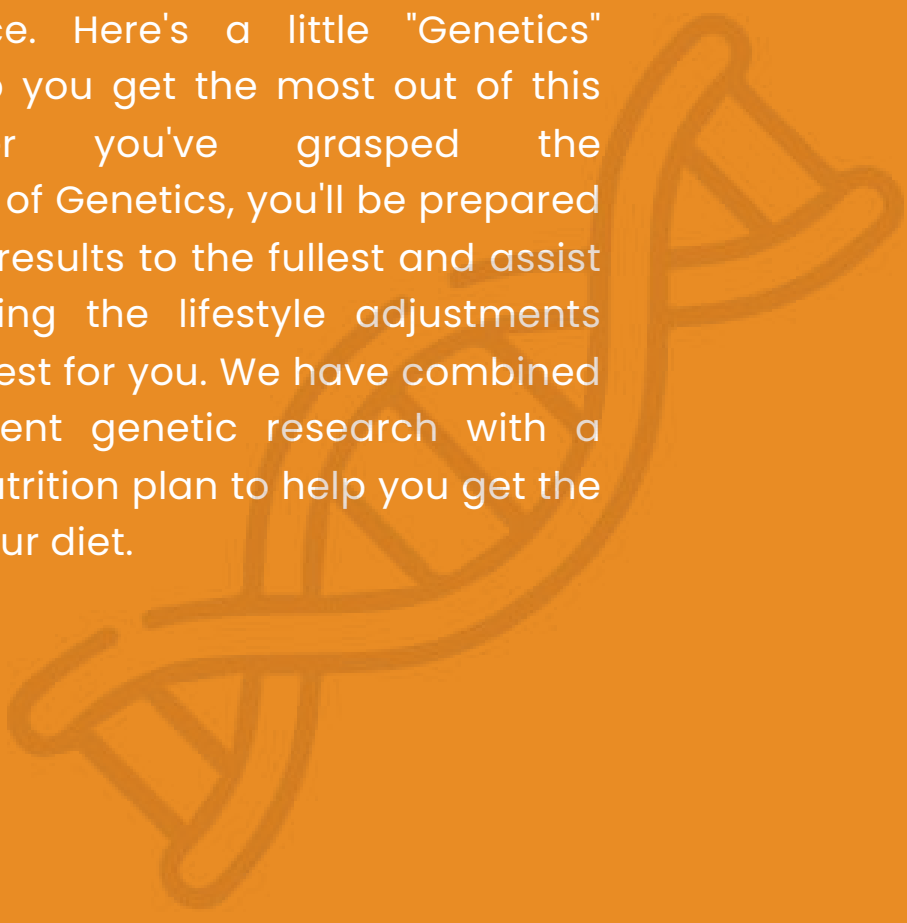
Women/Men Health

Know about your Bone Health and Metabolism Of Hormones And Xenobiotic.



What is Genetics?

Genetics is the scientific study of genes and heredity—how certain traits are passed from parents to offspring as a result of changes in DNA sequence. Here's a little "Genetics" lesson to help you get the most out of this report. After you've grasped the fundamentals of Genetics, you'll be prepared to utilize your results to the fullest and assist in implementing the lifestyle adjustments that are greatest for you. We have combined the most recent genetic research with a customized nutrition plan to help you get the most out of your diet.



What are Genes?

Genes are sections of DNA (deoxyribonucleic acid) that are found inside every human cell. They provide information for making a protein or, sometimes, an RNA molecule.



What is a genotype?

The genetic state of both copies of a genetic variant (e.g. AG, CC). Here, one copy is from either of your parents.

What do the letters in my genotype mean?

Your DNA is a code for synthesizing protein. This code is made by the arrangement of four small molecules in several combinations, namely Adenine, Thymine, Guanine, and Cytosine represented by the letters: A, T, G, and C.

With each section of your report, we'll give you a set of easy to understand **actions and explanations** of your genetic profile. In each section, we'll take you through:



Test Limitations: This test has not been validated by the NABL or CAP, and it has been determined by the accrediting bodies that such validation is not required at this time. Inter laboratory variability in the results may be possible as genetic variants analysed may vary. Environmental and lifestyle risk factors along with genetic makeup may also influence the likelihood of developing a given conditions. Test is only for certain variants in a few genes. The presence/ absence of the tested variant do not eliminate the possibility of other genetic variants that might influence the metabolism of nutrients and risk for health conditions. This test result may change based on scientific advancements/additional variants tested in future. These tests do not replace the need for consultations with a healthcare professional/nutritionist. Clients with medical conditions should not change or stop their medications or medical care without consulting with their physician first.

Your Wellness Report

Your Name
[Customer Name]

Sample No.
[Customer Name]

Report Date
01-Jul-2026

Trait Summary



HIGH EFFECT

- Lactose Sensitivity
- Methylation And Choline Requirements
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- Estrogen And Xenobiotics Metabolism
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HIGH EFFECT

MEDIUM EFFECT

LOW EFFECT

- Endurance
- Power/Strength

Antioxidant Defences

This **Reports** Covers
Oxidative Stress



Oxidative Stress

Oxidative stress is an imbalance between the production of reactive oxygen species and the body's ability to neutralize them. Your genetic profile can reveal your susceptibility to oxidative stress and its associated health risks, such as chronic inflammation and accelerated aging. By analyzing genetic markers related to antioxidant enzymes and inflammation, we can recommend a diet rich in antioxidants and anti-inflammatory nutrients to help mitigate oxidative stress and promote overall health.



Antioxidant Defenses

Markers Detected

Genes	rsID	Genotype
CAT	rs1001179	CC
GPX1	rs1050450	CC
SOD2	rs4880	TT



Antioxidant Defenses

Your Results

Low effect



Your genetic test findings indicate that you may experience less oxidative stress. Here are some tips to maintain a good antioxidant level: Include a fruit or a vegetable every time you eat, meals and snacks included. Eat foods that are high in antioxidants such as certain types of berries, nuts, and vegetables.

Points to ponder

Certain genetic variants can make your cells produce more or less of the enzymes and molecules that act as antioxidants, like glutathione and superoxide dismutase. It's like your genes are trying to turn you into a walking, talking free radical scavenger.



Antioxidant Defenses

What to Do

01 Dietary recommendation

- Maintain a balanced diet to ensure adequate intake of vitamins and minerals.

02 Lifestyle recommendation

- Limit exposure to environmental pollutants, toxins, and cigarette smoke, which can contribute to oxidative stress.
- Maintain good sleep habits to support overall health and well-being.

03 Exercise recommendation

- Engage in regular physical activity, such as brisk walking, cycling, or swimming, to maintain overall health and well-being.

References

- Shen Y, Li D, Tian P, et al. The catalase C-262T gene polymorphism and cancer risk: a systematic review and meta-analysis. *Medicine (Baltimore)*. 2015;94(13):e679. doi:10.1097/MD.0000000000000679
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Food Sensitivity

This **Reports** Covers
Food Sensitivity



Food Sensitivity

Your genes influence your body's response to specific foods and food components. People with certain genetic variants may experience trouble tolerating or breaking down certain foods. They can develop gas, diarrhea, and other problems. An intolerance or food sensitivity is inconvenient but not life-threatening.





Caffeine Sensitivity

Markers Detected

Genes	rsID	Genotype
ADORA2A	rs5751876	TC



Caffeine Sensitivity

Your Results

Medium effect



Your genetic test results suggest you may have a moderate sensitivity to caffeine. When someone has caffeine sensitivity, he or she feels the effects of caffeine much more strongly than those without a sensitivity. The person may feel as though he or she has had several shots of espresso after just a few sips of coffee.

Points to ponder

Your genes play a big role in how your body responds to caffeine. Some people are genetically wired to be "fast metabolizers" of caffeine, while others are "slow metabolizers."



Caffeine Sensitivity

What to Do

01 Dietary recommendation

- Limit caffeine intake to moderate levels (100–200 milligrams daily).
- Choose decaf or half-caf options when possible.
- Include grapefruit juice, apples, peppers, red wine, dark cherries and berries (blueberries, bilberries, blackberries, and others), tomatoes, cruciferous vegetables such as broccoli, cabbage and sprouts, and leafy green veggies, spinach, and kale in your diet, they are known inducers of the enzyme and are likely to speed up caffeine metabolism.

02 Exercise recommendation

- Engage in regular exercise to help manage stress and anxiety.
- Practice relaxation techniques like meditation, deep breathing, or yoga to reduce caffeine-related symptoms.

03 Lifestyle recommendation

- Establish a consistent sleep schedule to improve sleep quality.
- Drink plenty of water to stay hydrated.

References

- Alsene K, Deckert J, Sand P, de Wit H. Association between A2a receptor gene polymorphisms and caffeine-induced anxiety. *Neuropsychopharmacology*. 2003;28(9):1694–1702. doi:10.1038/sj.npp.1300232



Hypersensitivity

Markers Detected

Genes	rsID	Genotype
HNMT	rs11558538	CC



Hypersensitivity

Your Results

Low effect



Your genetic test results suggest you may have a low histamine level reaction. A molecule produced by our body that is involved in allergic reactions and inflammation also acts as a neurotransmitter. Having levels of histamine that are too high or not properly breaking down this molecule can cause unpleasant symptoms such as headache, irritability and anxiety, brain fog, skin flushing and itching, and stomach and intestinal problems (i.e. reflux, diarrhoea, nausea, cramps, etc.), accelerated or irregular heartbeat, among others. Overall, this kind of overreaction is called "histamine sensitivity". The two main causes of this sensitivity are 1) insufficient amount of enzymes that degrade this amine (DMAO and HMNT) and 2) excessive consumption of foods containing histamine. Some gut bacteria can also produce histamine so you may experience histamine sensitivity symptoms as a consequence of dysbiosis. Carriers of these gene variants have an increased risk of developing asthma.

Points to ponder

Hypersensitivity reactions involve an overactive immune response to an allergen. Genetic factors influence susceptibility to allergic diseases like asthma, eczema and hay fever.



Hypersensitivity

What to Do

01 Healthcare checkup

- If you suspect you have a high histamine level reaction, consult a doctor to rule out other conditions and discuss potential treatment options.

02 Dietary recommendation

- Maintain a balanced diet to ensure adequate intake of vitamins and minerals.

03 Supplementation

- Take vitamin supplements to maintain a good level.

References

- Raje N, Vyhldal CA, Dai H, Jones BL. Genetic variation within the histamine pathway among patients with asthma--a pilot study. *J Asthma*. 2015;52(4):353-362. doi:10.3109/02770903.2014.973501



Lactose Sensitivity

Markers Detected

Genes	rsID	Genotype
MCM6	rs4988235	CC



Lactose Sensitivity

Your Results

High effect



Your genetic test results suggest you may have a high sensitivity to lactose. Lactose is a sugar contained in dairy products. It is digested by a specific enzyme called lactase, which breaks down the molecule of lactose into galactose and glucose, two simple sugars that can be easily absorbed in the small intestine. If you do not produce enough lactase or this enzyme is somehow less effective, lactose is not properly digested and is fermented by the bacteria in your gut. For this reason, lactose-intolerant individuals experience unpleasant symptoms such as bloating, diarrhoea, intestinal cramps and nausea. Lactose intolerance is not the same as milk allergy! This intolerance is due to an enzymatic deficiency and although the symptoms can be troublesome, it is not life-threatening.

Points to ponder

Most people lose the ability to fully digest lactose, the sugar in milk, as they get older. But some are genetically predisposed to maintain this ability into adulthood.



Lactose Sensitivity

What to Do

01 Dietary recommendation

- Avoid milk and milk products and switch to lactose-free milk products.
- Avoid cheese, ice cream, chocolate, ketchup, mustard, and mayo. (Include Lactose-free labeled products including sour cream, kefir, yogurt, pouring cream, and cream cheese.
- You can consume Curd and curd products like buttermilk (chhaas), and raita that will help you maintain a healthy digestive system.
- Have lactose-free dairy products like almond milk, coconut milk, lactose-free ice cream, etc.

02 Exercise recommendation

- Indulge in regular physical activity to maintain bone health, as lactose intolerance can increase the risk of osteoporosis.

03 Lifestyle recommendation

- Learn how to read nutrition fact labels to choose lactose-free food products.
- Take probiotics to help improve lactose digestion.

References

- Chin EL, Huang L, Bouzid YY, et al. Association of Lactase Persistence Genotypes (rs4988235) and Ethnicity with Dairy Intake in a Healthy U.S. Population. *Nutrients*. 2019;11(8):1860. Published 2019 Aug 10. doi:10.3390/nu11081860



Salt Sensitivity

Markers Detected

Genes	rsID	Genotype
ADD1	rs4961	GT
AGT	rs699	TC



Salt Sensitivity

Your Results

Medium effect



Your genetic test results suggest you may have moderate sensitivity to salt intake and an increased risk of hypertension. Excessive salt (sodium) intake can negatively affect blood pressure (BP) and cause hypertension. There is strong evidence supporting the direct relationship between sodium consumption and BP values. Some people can effectively handle a high consumption of salt without experiencing any increase in BP, while others, called “salt sensitive”, tend to retain more sodium and water. Several factors can contribute to salt sensitivity, such as alterations in kidney functions and vascular endothelium, abnormalities in the renin-angiotensin-aldosterone system or sympathetic nervous system or changes in the nitric oxide production or renal transmembrane sodium transport. Genetics seems to play an important role in affecting salt sensitivity. The genetic variants impacting the response to sodium may also influence salt taste perception and, therefore, drive a higher intake.

Points to ponder

About 51% of people with high blood pressure and 26% of those without it are salt sensitive. This means their blood pressure rises significantly when they eat a lot of salt.



Salt Sensitivity

What to Do

01 Limit Salt

- Consume not more than 5 mg of salt daily.
- Read labels for sodium intake.

02 Dietary recommendation

- Foods rich in potassium like bananas, leafy greens, and sweet potatoes to help balance sodium levels.
- Calcium-rich foods like milk, cheese, and leafy greens to support blood pressure management.
- Have omega-3 fatty acids from fatty fish, flaxseeds, and walnuts for overall cardiovascular health.

03 Lifestyle recommendation

- Avoid overexertion, which can lead to dehydration and blood pressure fluctuations.
- Learn how to read nutrition fact labels to choose low-sodium foods.

References

- Giovannella J, Wollinger LM, Capra L, Dresch F, Genro JP, Contini V. Diet-gene interaction: effects of polymorphisms in the ACE, AGT and BDKRB2 genes and the consumption of sodium, potassium, calcium, and magnesium on blood pressure of normotensive adult individuals. *Mol Cell Biochem.* 2021;476(2):1211-1219. doi:10.1007/s11010-020-03983-5
- Gholami M, Amoli MM, Sharifi F. Letter to the editor: Association between α -adducin rs4961 polymorphism and hypertension: A meta-analysis based on 40,894 subjects. *J Cell Biochem.* 2020;121(4):2728-2729. doi:10.1002/jcb.29616

Diet and Nutrition

This **Reports** Covers

Body Mass Index & Tendency To Obesity

Metabolism Of B Vitamins And Choline

Mineral Deficiency

Vitamin Deficiency



Body Mass Index & Tendency To Obesity

Your genetic makeup can influence your BMI and predisposition to obesity. By examining genetic variants associated with appetite regulation, fat metabolism, and energy expenditure, we can identify potential risk factors and guide dietary strategies to maintain a healthy weight, such as adjusting your macronutrients, fiber, and specific nutrients that support metabolic health.



Body Mass Index

Markers Detected

Genes	rsID	Genotype
SH2B1	rs7498665	AA



Body Mass Index

Your Results

Low effect



Your genetic test results suggest you may have a low BMI. The body mass index (BMI) is a measure that uses your height and weight to work out if your weight is healthy. Overweight (not obese), if BMI is 25.0 to 29.9. Class 1 (low-risk) obesity, if BMI is 30.0 to 34.9. Class 2 (moderate-risk) obesity, if BMI is 35.0 to 39.9. Class 3 (high-risk) obesity, if BMI is equal to or greater than 40.0 The higher your BMI, the higher your risk for certain diseases such as heart disease, high blood pressure, type 2 diabetes, gallstones, breathing problems, and certain cancers.

Points to ponder

Your BMI is like a secret code written in your DNA – over 2,400 different genetic variants can influence where that number falls on the scale.



Body Mass Index

What to Do

01 Dietary recommendation

- Maintain a balanced diet to ensure adequate intake of vitamins and minerals.

02 Exercise recommendation

- Engage in regular physical activity, such as brisk walking, cycling, or swimming, to maintain overall health and well-being.

03 Lifestyle recommendation

- Aim for 7–9 hours of sleep each night to help regulate appetite hormones and support weight management.

References

- Cotsapas C, Speliotes EK, Hatoum IJ, et al. Common body mass index-associated variants confer risk of extreme obesity [published correction appears in *Hum Mol Genet.* 2010 Sep 15;19(18):3690–1]. *Hum Mol Genet.* 2009;18(18):3502–3507. doi:10.1093/hmg/ddp292
- Thorleifsson G, Walters GB, Gudbjartsson DF, et al. Genome-wide association yields new sequence variants at seven loci that associate with measures of obesity. *Nat Genet.* 2009;41(1):18–24. doi:10.1038/ng.274
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- KnÃ\x83Å\x83ppel S, Rohde K, Meidtner K, et al. Evaluation of 41 candidate gene variants for obesity in the EPIC–Potsdam cohort by multi-locus stepwise regression. *PLoS One.* 2013;8(7):e688941. Published 2013 Jul 12. doi:10.1371/journal.pone.00688941



Risk of Obesity

Markers Detected

Genes	rsID	Genotype
FTO	rs1421085	TT



Risk of Obesity

Your Results

Low effect



Your genetic test results suggest you may have a low obesity risk. Living with obesity is detrimental to life as it impedes one's ability to perform day-to-day tasks. It also causes heart problems, strokes and cancer. If you are at an increased obesity risk it is good to consult your physician and help you get started on a plan to lose weight and lead a healthy lifestyle.

Points to ponder

It's like your genes are secretly programming you to be a human sponge, soaking up every calorie that comes your way.



Risk of Obesity

What to Do

01 Dietary recommendation

- Maintain a balanced diet to ensure adequate intake of vitamins and minerals.

02 Exercise recommendation

- Engage in regular physical activity, such as brisk walking, cycling, or swimming, to maintain overall health and well-being.

03 Lifestyle recommendation

- Aim for 7-9 hours of sleep each night to help regulate appetite hormones and support weight management.

References

- Inandiklio N, Ya A. Association between rs1421085 and rs9939609 Polymorphisms of Fat Mass and Obesity-Associated Gene with High-Density Lipoprotein Cholesterol and Triglyceride in Obese Turkish Children and Adolescents. *J Pediatr Genet.* 2021;10(1):9-15. doi:10.1055/s-0040-1713154

Metabolism Of B Vitamins And Choline



Homocysteine is an amino acid produced via the metabolism (demethylation) of dietary methionine, an essential amino acid present in animal protein. Homocysteine must be recycled and transformed again into methionine or converted into cysteine. This pathway requires adequate folate (vitamin B9), vitamin B6 and B12. Elevated homocysteine (hyperhomocysteinemia) is an independent risk factor for cardiovascular diseases (CVDs), atherosclerosis, hypertension and nervous system disorders. Even marginal deficiencies in folate, vitamin B12 and B6 or the presence of genetic variants in the critical enzymes needed for homocysteine metabolism can lead to hyperhomocysteinemia. In this section, you will find the results of your Nutrigenetics test regarding the most well-studied and essential gene involved in folate metabolism, which directly influences homocysteine levels.



Homocysteine Conversion To Cystathionine

Markers Detected

Genes	rsID	Genotype
CBS	rs234706	CT



Homocysteine Conversion To Cystathionine

Your Results

Low effect



Your genetic test results suggest you may have average enzymatic activity of the enzyme cystathionine beta-synthase (CBS). The enzyme CBS plays a key role in the first phase of the transsulfuration pathway: it is responsible for the conversion of homocysteine and serine into cystathionine, a precursor of the amino acid cysteine. Polymorphisms in this gene can lead to an up-regulation of enzymatic activity, favouring transsulfuration and thus causing a decrease in homocysteine. A deficiency of this enzyme leads to the accumulation not only of homocysteine but also its precursor, methionine.

Points to ponder

Variants in the CBS gene are associated with homocysteine levels and transsulfuration. CBS encodes the enzyme cystathionine beta-synthase which catalyzes the first step in homocysteine conversion to cystathionine.



Homocysteine Conversion To Cystathionine

What to Do

01 Assessment

- Occasionally have a thorough dietary assessment to identify potential nutrient deficiencies, particularly in B vitamins (B6, B12, and folate), which are crucial for homocysteine metabolism.

02 Dietary recommendation

- Ensure having a balanced diet to avoid micronutrient deficiency.

03 Lifestyle recommendation

- Encouraging a healthy lifestyle, including regular exercise, adequate sleep, and a balanced diet, supports overall health and homocysteine metabolism.

References

- Silao CL, Fabella TD, Rama KI, Estrada SC. Novel cystathionine γ -synthase gene mutations in a Filipino patient with classic homocystinuria. *Pediatr Int*. 2015;57(5):884-887. doi:10.1111/ped.12666



Homocysteine Conversion To Methionine

Markers Detected

Genes	rsID	Genotype
MTR	rs1805087	GG



Homocysteine Conversion To Methionine

Your Results

Low effect



Your genetic test results suggest you may have average activity of the enzyme Methionine Synthase (MS). The MTR gene encodes an enzyme called 5-methyltetrahydrofolate-homocysteine methyltransferase (also known as cobalamin-dependent methionine synthase). This enzyme is responsible for the final phase of methionine biosynthesis, which is produced starting from another amino acid, homocysteine. For MS to function correctly, it requires the presence of methylcobalamin (a form of vitamin B12) and methionine synthase reductase (MSR), an enzyme encoded by the MTRR gene.

Points to ponder

Homocysteine is an amino acid that can be converted to the essential amino acid methionine. Genetic factors influence homocysteine levels and metabolism.



Homocysteine Conversion To Methionine

What to Do

01 Assessment

- Evaluate the biomarkers that are important for the transsulfuration pathway, such as Pyridoxal 5'-phosphate (vitamin B6), glutathione (GSH), Plasma oxidized glutathione (GSSG), and more if needed for any medical condition.

02 Dietary recommendation

- Ensure having a balanced diet to avoid micronutrient deficiency.

03 Lifestyle recommendation

- Regular exercise can help improve overall health and potentially enhance the activity of methionine synthase.

References

- Zhang W, Zhang Z, Wu H, et al. Update analysis on the association between Methionine synthase rs1805087 A/G variant and risk of prostate cancer. *Sci Rep.* 2020;10(1):13384. Published 2020 Aug 7. doi:10.1038/s41598-020-70223-7



Homocysteine Level

Markers Detected

Genes	rsID	Genotype
MTHFR	rs1801133	CT
MTHFR	rs1801131	AA



Homocysteine Level

Your Results

Medium effect



Your genetic test results suggest you may have moderate homocysteine levels due to lower activity of the enzyme methylenetetrahydrofolate reductase (MTHFR) in processing folic acid, resulting in lower edible values of folic acid. Homocysteine (Hcy) is a sulfur-containing amino acid formed during the metabolism of methionine (Met) to cysteine (Cys). In a healthy person, homocysteine levels are around five to 15 micromoles per litre (mcmol/L). Nearly all that homocysteine converts to other proteins. If you have more than 50 mcmol/L, the excess homocysteine may damage the lining of your arteries (blood vessels that carry oxygen-rich blood throughout your body) causing coronary, cerebral, and peripheral atherosclerosis.

Points to ponder

Folate, vitamin B6, and vitamin B12 are key nutrients that help break down homocysteine. If you're low in these, your homocysteine may creep up.



Homocysteine Level

What to Do

01 Dietary recommendation

- Avoid beef, tuna, pork, sesame seeds, and Brazil nuts as they are rich in methionine which can be recycled to homocysteine.
- Increase intake of folate-rich foods like leafy green vegetables, beans, lentils, citrus fruits, and whole grains in your diet.
- Consume more foods high in vitamins B6 (eg., meat, fish, poultry, and whole grains), B12-rich food (animal products like meat, fish, poultry, eggs, and dairy products), and B2-rich food (eg., poultry, fish, eggs, dairy, and fortified cereals).

02 Supplementation recommendation

- Take a B-complex supplement containing folate, vitamin B6, and vitamin B12 to help lower homocysteine levels under your doctor or dietitian consultation.
- Consider supplements with trimethylglycine (TMG) as it can also help reduce homocysteine under your doctor or dietitian consultation.

03 Lifestyle recommendation

- Quit smoking and limit alcohol consumption, as these can increase homocysteine levels.
- Maintain a healthy weight and exercise regularly, as excess weight and a sedentary lifestyle are associated with higher homocysteine.
- Manage any underlying health conditions like liver disease, which can contribute to elevated homocysteine.

References

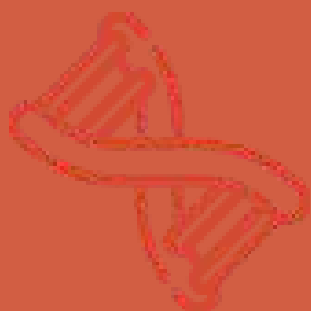
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Methylation And Choline Requirements

Markers Detected

Genes	rsID	Genotype
MTHFD1	rs2236225	AA



Methylation And Choline Requirements

Your Results

High effect



Your genetic test results suggest you may have reduced enzymatic activity MTHFD1 resulting in choline and folate deficiencies. Choline is an essential nutrient that plays an important role in lipid metabolism and DNA methylation. Most DNA methylation is essential for normal development, and it plays a very important role in several key processes including genomic imprinting, X-chromosome inactivation, and suppression of repetitive element transcription and transposition and, when dysregulated, contributes to diseases like cancer.

Points to ponder

Certain genetic variants can make you need more folate, vitamin B12, and choline to keep methylation running smoothly. If you have these, you may feel sluggish or moody if you don't get enough of these nutrients.



Methylation And Choline Requirements

What to Do

01 Dietary recommendation

- Food rich in choline should be incorporated.
- If dietary choline intake is insufficient, a choline supplement is recommended.
- Consume folate-rich foods in your diet.

02 Health checkup

- Regularly monitor your blood levels of folate and choline to ensure they are within the recommended ranges.

03 Lifestyle recommendation

- Limit or avoid drinking alcohol.
- If you are pregnant or lactating, it is crucial to maintain a balanced diet rich in both folate and choline.

References

- Silver MJ, Corbin KD, Hellenthal G, et al. Evidence for negative selection of gene variants that increase dependence on dietary choline in a Gambian cohort. *FASEB J*. 2015;29(8):3426–3435. doi:10.1096/fj.15-271056



Vitamin B12 Recycling In Methylation Cycle

Markers Detected

Genes	rsID	Genotype
MTRR	rs1801394	AG



Vitamin B12 Recycling In Methylation Cycle

Your Results

Medium effect



Your genetic test results suggest you may have low activity of the enzyme methionine synthase reductase (MSR), which affects folate metabolism and increases the need for the active form of vitamin B12 (methyl-B12). This MSR enzyme is required for the proper function of another enzyme called methionine synthase (MS). MS helps process amino acids, which are the building blocks of proteins. Specifically, it converts the amino acid homocysteine to another amino acid called methionine. After a period of being turned on (active), MS turns off (becomes inactive). MSR reactivates MS so the enzyme can continue to produce methionine.

Points to ponder

Vitamin B12 is an essential cofactor for enzymes involved in DNA synthesis and energy production. Genetic factors influence B12 status and metabolism.



Vitamin B12 Recycling In Methylation Cycle

What to Do

01 Dietary recommendation

- Increase consumption of folate-rich foods such as dark leafy greens (spinach, kale), legumes (beans, lentils), and whole grains (brown rice, quinoa) to support methionine synthesis.
- Include vitamin B12-rich foods like fish, poultry, eggs, dairy products, and fortified cereals to ensure adequate methylcobalamin levels for methionine synthase function.
- Consume foods that help lower homocysteine levels, such as omega-3 fatty acids (salmon, flaxseeds), vitamin B6-rich foods (chicken, turkey, bananas), and vitamin B9-rich foods (spinach, asparagus).

02 Health checkup

- Regularly monitor your blood levels of folate and B12 to ensure they are within the recommended ranges.

03 Lifestyle recommendation

- Avoid smoking and limit alcohol consumption as it can negatively impact methylation patterns.
- Chronic stress can negatively impact methylation patterns so practice stress-reducing techniques.
- Ensure adequate sleep (7-8 hours) is crucial for overall health and methylation processes.

References

- Chen X, Huang X, Zheng C, Wang X, Zhang W. Using the optimal method-explained variance weighted genetic risk score to predict the efficacy of folic acid therapy to hyperhomocysteinemia. *Eur J Clin Nutr.* 2022;76(7):943-949. doi:10.1038/s41430-021-01055-5

Mineral Deficiency

Your genes can influence your body's ability to regulate and utilize essential minerals like iron, zinc, and magnesium. Nutrigenomic testing can uncover genetic predispositions to mineral imbalances, enabling us to recommend dietary modifications or supplementation to maintain healthy mineral levels.





Iron Deficiency

Markers Detected

Genes	rsID	Genotype
TMPRSS6	rs4820268	CT



Iron Deficiency

Your Results

Medium effect



Your genetic test results suggest you may have lower iron levels. Low iron levels, or iron deficiency, occur when your body doesn't have enough iron. This leads to a condition called anemia. Common symptoms include fatigue, pallor, and breathlessness.

Points to ponder

Certain genetic variants can make you more prone to iron deficiency anemia. If you have these, you may need to be extra vigilant about getting enough iron from foods or supplements.



Iron Deficiency

What to Do

01 Dietary recommendation

- Increase iron-rich foods like dark-green leafy vegetables, such as watercress and curly kale, iron-fortified cereals or bread, brown rice, pulses and beans, nuts and seeds, meat, fish and tofu, eggs, dried fruit, such as dried apricots, prunes, and raisins in your diet.
- Vitamin C-rich foods like citrus fruits, broccoli, bell peppers, and leafy greens in your diet to enhance iron absorption.
- Limit or avoid foods that inhibit iron absorption, such as coffee, tea, and cocoa.

02 Lifestyle recommendation

- Avoid underweight/overweight conditions as they can increase the risk of anemia.
- Aim for a sleep duration of 7 hours, as sleep disturbances can increase the risk of anemia.

03 Supplementation recommendation

- Take iron and vitamin C supplements to reverse sub-optimal iron levels.

References

- Jallow MW, Campino S, Saidykhan A, Prentice AM, Cerami C. Common Variants in the *TMPRSS6* Gene Alter Hepcidin but not Plasma Iron in Response to Oral Iron in Healthy Gambian Adults: A Recall-by-Genotype Study. *Curr Dev Nutr.* 2021;5(3):nzab014. Published 2021 Feb 24. doi:10.1093/cdn/nzab014

Vitamin Deficiency



A vitamin deficiency occurs when you do not get enough of a certain vitamin. Vitamins are essential nutrients that mainly come from foods needed for normal cell function, growth, and development. There are 13 essential vitamins. This means that these vitamins are required for the body to work properly. Vitamins are grouped into two categories: Fat-soluble vitamins are stored in the body's liver, fatty tissue, and muscles. The four fat-soluble vitamins are vitamins A, D, E, and K. These vitamins are absorbed more easily by the body in the presence of dietary fat. Water-soluble vitamins are not stored in the body. The nine water-soluble vitamins are vitamin C and all the B vitamins. Any leftover or excess amounts of these leave the body through the urine. They have to be consumed regularly to prevent shortages or deficiencies in the body. The exception to this is vitamin B12, which can be stored in the liver for many years. Not eating enough fruits, vegetables, beans, lentils, whole grains and fortified dairy foods may increase your risk for health problems, including heart disease, cancer, and poor bone health. We can pinpoint these genetic risk factors and guide you toward the right dietary changes or targeted supplementation to prevent or address vitamin deficiencies.



Vitamin A Levels

Markers Detected

Genes	rsID	Genotype
BCO1	rs7501331	CT
BCO1	rs12934922	AA



Vitamin A Levels

Your Results

Medium effect



Your genetic test results suggest you may have low Vitamin A levels. Vitamin A deficiency happens when your body doesn't get enough vitamin A. It can cause vision loss and blindness. It can also lead to complications with your skin, heart, lungs, tissues and immune system.

Points to ponder

Some people have genetic variants that make their liver a veritable vitamin A warehouse, able to stockpile huge amounts of this essential nutrient.



Vitamin A Levels

What to Do

01 Vitamin A-rich Diet

- Include foods rich in vitamin A, such as Leafy green vegetables like spinach, kale, and collard greens; Fatty fish like salmon and mackerel; Fruits like cantaloupe, mango, and apricots; Dairy products like milk, cheese, and butter; and Fortified cereals.

02 Fat-Soluble Vitamin

- Consume vitamin A-rich foods with fat to effectively increase absorption.
- Adding olive oil, avocado, nuts and seeds (eg., almonds, pumpkin seeds, and sunflower seeds), and whole grains to vitamin A-rich foods can improve absorption.
- Maintaining a healthy gut microbiome through probiotics and prebiotics can improve nutrient absorption, including vitamin A.

03 Tips for enhancing absorption

- Consume vitamin A supplements with a meal that includes fats to enhance absorption.
- Proper chewing can break down cell walls and aid in nutrient absorption.
- High stress levels can slow down digestion and nutrient absorption; manage stress through relaxation techniques like meditation or deep breathing.
- Discuss any medications you are taking with your doctor to avoid potential interactions with vitamin A supplements.

References

- Suzuki M, Tomita M. Genetic Variations of Vitamin A-Absorption and Storage-Related Genes, and Their Potential Contribution to Vitamin A Deficiency Risks Among Different Ethnic Groups. *Front Nutr.* 2022;9:861619. Published 2022 Apr 28. doi:10.3389/fnut.2022.861619



Vitamin B12 Levels

Markers Detected

Genes	rsID	Genotype
CLYBL	rs41281112	CC
FUT2	rs1047781	AA
FUT2	rs602662	AA



Vitamin B12 Levels

Your Results

Low effect



Your genetic test results suggest you may have average Vitamin B12 levels. Serum or plasma vitamin B12 levels are frequently used to measure vitamin B12 levels. Normal values for B12 should be around 200–900 pg/mL for adults, according to the National Institutes of Health. Limited consumption of vitamin B12-containing foods and poor intestinal absorption are major contributors to low plasma levels, while recent evidence from genome-wide association studies (GWAS) suggests that genetic factors also contribute to circulating levels of this vitamin. Vitamin B12 is an essential water-soluble vitamin that functions as a required cofactor in two enzymatic reactions. The Vitamin B12-dependent enzymes are involved in energy metabolism and DNA synthesis, among other functions, and deficiency of this vitamin can lead to anemia and neurological dysfunction. Folate metabolism regulates the conversion of amino acids (homocysteine and methionine), purine and pyrimidine synthesis and DNA methylation. These whole biochemical processes have a significant influence on hematopoietic, cardiovascular and nervous system functions.

Points to ponder

Certain genetic variants can increase your risk of developing a condition called pernicious anaemia, where your immune system attacks the very cells that produce B12. It's a genetic double-edged sword.



Vitamin B12 Levels

What to Do

01 Dietary recommendation

- Include animal-derived foods like meat, fish, eggs, and dairy products in your diet.
- Consider fortified plant-based foods like plant milk, cereals, and nutritional yeast.

02 Vitamin B12 Supplements

- If required take vitamin B12 supplementation under the guidance of your doctor/dietitian.

03 Lifestyle recommendation

- Avoid excessive alcohol consumption, which can interfere with vitamin B12 absorption.

References

- Tanaka T, Scheet P, Giusti B, et al. Genome-wide association study of vitamin B6, vitamin B12, folate, and homocysteine blood concentrations [published correction appears in *Am J Hum Genet.* 2009 May;84(5):712]. *Am J Hum Genet.* 2009;84(4):477-482. doi:10.1016/j.ajhg.2009.02.011
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- Tanwar VS, Chand MP, Kumar J, et al. Common variant in FUT2 gene is associated with levels of vitamin B(12) in Indian population. *Gene.* 2013;515(1):224-228. doi:10.1016/j.gene.2012.11.021



Vitamin D Levels

Markers Detected

Genes	rsID	Genotype
VDR	rs731236	TT
CYP2R1	rs117913124	CC
GC	rs7041	TT
CYP2R1	rs10741657	TC



Vitamin D Levels

Your Results

Low effect



Your genetic test results suggest you may have average Vitamin D levels. Vitamin D helps your body absorb calcium. Calcium is one of the main building blocks of bone. Vitamin D also has a role in your nervous, muscle, and immune systems. Vitamin D deficiency means that your body is not getting enough vitamin D to stay healthy. Symptoms of bone pain and muscle weakness may indicate a vitamin D deficiency. However, for many people, the symptoms are subtle. Yet, even without symptoms, too little vitamin D can pose health risks. Low blood levels of the vitamin have been associated with the following: Increased risk of death from cardiovascular disease, cognitive impairment in older adults, severe asthma in children and cancer. Serum Vitamin D-binding protein is a multifunctional protein present on the surfaces of numerous cell types and in plasma, ascitic fluid, and cerebrospinal fluid. It binds to vitamin D and its plasma metabolites, transporting them to target tissues. Vitamin D deficiency has been associated with several health outcomes, such as bone disease, diabetes, hypertension, heart disease, cancer, and autoimmune and infectious diseases. The major circulating form of vitamin D is 25-hydroxyvitamin D (25(OH)D); thus, the total serum 25(OH)D level is currently considered the best indicator of vitamin D supply to the body from cutaneous synthesis and nutritional intake. The reference range of the total 25(OH)D level is 25–80 ng/mL.

Points to ponder

About 70% of people are vitamin D deficient. If you're one of them, you may feel less focused, have dental pain, or feel fatigued.



Vitamin D Levels

What to Do

01 Dietary recommendation

- Include Vitamin D-rich food in your diet like salmon, mackerel, tuna, sardines, cod liver oil and egg yolks, mushrooms especially those exposed to UV light like portobello, shiitake, and maitake, fortified foods like milk, plant-based milks, orange juice, and cereals.

02 Exercise recommendation

- Engage in outdoor activities like walking, jogging, or cycling for at least 30 minutes daily to increase sun exposure.

03 Vitamin D3 Supplements

- Consider taking vitamin D supplementation under the guidance of your doctor/dietitian to maintain your level.

References

- Moy KA, Mondul AM, Zhang H, et al. Genome-wide association study of circulating vitamin D-binding protein. *Am J Clin Nutr.* 2014;99(6):1424-1431. doi:10.3945/ajcn.113.080309
- Zhou H, Zhou BY, Liang SR, Li M, Zhao J. The relationship between vitamin D receptor gene polymorphisms and ankylosing spondylitis: a systematic review, meta-analysis and trial sequential analysis. *Rheumatol Int.* 2023;43(1):21-32. doi:10.1007/s00296-022-05189-y

Disease Susceptibility

This **Reports** Covers

Inflammation Risk

Lipid Levels And Cholesterol

Risk Of Metabolic Syndrome

Susceptibility to Diabetes



Inflammation Risk

Inflammation is a contributing factor to various health problems, including cardiovascular disease, cancer, and autoimmune disorders. Certain genetic variants can affect inflammatory pathways and influence an individual's susceptibility to inflammation. By evaluating your genetic profile, we can identify your risk of chronic inflammation and recommend anti-inflammatory dietary strategies to support your overall health.



Risk Of Chronic Inflammation

Markers Detected

Genes	rsID	Genotype
IL-6	rs1800795	GG
IL-1 beta	rs1143634	CT
TNF-alpha	rs1800629	GG



Risk Of Chronic Inflammation

Your Results

High effect



Your genetic test results suggest you may have high risk of having Chronic Inflammation. This means you are more prone to a higher-than-normal inflammatory state. Inflammation has a vital role in the healing processes of the injured tissues as well as in the removal of infectious pathogens and other inflammatory triggers. IL-1 beta is encoded for interleukin 1 beta, one of the most important cytokines involved in the initiation and perpetuation of inflammatory responses. Elevated levels of IL-1 beta are observed in autoimmune disorders such as Rheumatoid arthritis and Inflammatory bowel disease (IBD).

Points to ponder

Researchers have identified over 200 different genetic regions that influence inflammation levels in the body. That's a lot of tiny genetic switches controlling your body's inflammatory response!



Risk Of Chronic Inflammation

What to Do

01 Dietary recommendation

- A balanced diet rich in fruits, vegetables, whole grains, lean proteins, and healthy fats.
- Omega-3 fatty acids: Fatty fish like salmon, sardines, and mackerel; flaxseeds, chia seeds, and walnuts.
- Antioxidant-rich foods: Berries, leafy greens, and other fruits and vegetables high in antioxidants.

02 Exercise recommendation

- Regular aerobic exercise, such as brisk walking, cycling, or swimming, for at least 30 minutes, 3-4 times a week.

03 Lifestyle recommendation

- Regular checkups with a healthcare provider to monitor overall health and adjust diet and lifestyle accordingly.
- Engage in relaxing activities like reading, listening to music, or taking a warm bath.
- Maintain a healthy BMI through a balanced diet and regular exercise.
- Get adequate sleep (7-9 hours) each night to help regulate overall health.
- Limit or avoid smoking and alcohol consumption.

References

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Lipid Levels And Cholesterol

Your genetic makeup plays a significant role in determining your blood lipid levels, including cholesterol. Lipids are fat-like substances found in your blood and body tissues. Your body may need small amounts of lipids to work normally. An excess amount of blood lipids can cause fat deposits in your artery walls, increasing your risk for heart disease. Cholesterol is the main lipid. It is made up of different parts such as LDL cholesterol, or “bad” cholesterol, which is a lipid that causes damaging buildup and blockage in your arteries. HDL cholesterol is a “good” type of cholesterol that helps to prevent cholesterol from building up in your arteries. Triglyceride is another lipid that may increase your risk for heart disease. By assessing your genetic profile, we can determine your susceptibility to dyslipidemia (abnormal lipid levels) and recommend dietary modifications to maintain healthy cholesterol levels.



Coronary Artery Disease

Markers Detected

Genes	rsID	Genotype
intron_variant	rs1333049	GC
PPARG	rs3856806	CT

^{*}**intron_variant:** A change in the nucleotide sequence of a region between gene loci.



Coronary Artery Disease

Your Results

Medium effect



Your genetic test results suggest you may have a moderate risk for Coronary Artery Disease. Coronary artery disease (CAD) is a narrowing or blockage of your coronary arteries, which supply oxygen-rich blood to your heart, caused by plaque buildup in the wall of the arteries. Plaque is made up of cholesterol deposits. Note: This result is not the singular cause of CAD. Many factors affect the risk for CAD, such as lifestyle, comorbid conditions and other genetic markers.

Points to ponder

Certain gene variants are linked to accelerated atherosclerosis. It's like your body is a ticking time bomb for heart attacks and strokes if you don't watch out.



Coronary Artery Disease

What to Do

01 Dietary recommendation

- Maintain a healthy weight with the right diet and exercise.
- Eat a low-fat, low-salt diet that's rich in fruits, vegetables and whole grains.
- Limit foods high in saturated fats, trans fats, sugar, and salt.
- Include low-fat dairy products, lean sources of protein, and plenty of vegetables, fruits, and whole grains.

02 Exercise recommendation

- Aim for at least 150 minutes of moderate-intensity aerobic exercise per week.
- Incorporate strength training exercises at least twice a week.

03 Lifestyle recommendation

- Engage in stress-reducing activities like reading, listening to music, or taking a relaxing bath.
- Schedule regular health checkups with your doctor and dietitian to monitor blood pressure, cholesterol levels, and blood sugar.
- Quit smoking, and cut out alcohol and recreational drugs.

References

- Ahmed W, Ali IS, Riaz M, et al. Association of ANRIL polymorphism (rs1333049:C>G) with myocardial infarction and its pharmacogenomic role in hypercholesterolemia. *Gene*. 2013;515(2):416-420. doi:10.1016/j.gene.2012.12.044
- Schunkert H, Kathiresan S, et al. Large-scale association analysis identifies 13 new susceptibility loci for coronary artery disease. *Nat Genet*. 2011;43(4):333-338. Published 2011 Mar 6. doi:10.1038/ng.784



HDL-C Levels

Markers Detected

Genes	rsID	Genotype
ANGPTL8	rs2278426	GG



HDL-C Levels

Your Results

Low effect



Your genetic test results suggest you may have normal HDL-C levels. Higher levels of HDL cholesterol are associated with a lower risk of heart disease. Men are at a higher risk of heart disease if they have less than 40 mg/dL and women are at a higher risk if they have less than 50 mg/dL.

Points to ponder

Some people are just blessed with genes that help them produce more HDL cholesterol. Talk about winning the genetic lottery!



HDL-C Levels

What to Do

01 Dietary recommendation

- Focus on a balanced diet rich in essential nutrients like vitamins, minerals, and antioxidants.

02 Exercise recommendation

- Engage in at least 30 minutes of light-to-moderate intensity physical activity.

03 Lifestyle recommendation

- Engage in stress-reducing activities like reading, listening to music, or taking a relaxing bath.

References

- Lanktree MB, Anand SS, Yusuf S, Hegele RA; SHARE Investigators. Replication of genetic associations with plasma lipoprotein traits in a multiethnic sample. *J Lipid Res.* 2009;50(7):1487-1496. doi:10.1194/jlr.P900008-JLR200
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Hypertriglyceridemia

Markers Detected

Genes	rsID	Genotype
APOA5	rs651821	GA
ZPR1	rs964184	GG



Hypertriglyceridemia

Your Results

Medium effect



Your genetic test results suggest you may have a moderate risk for Triglyceridemia and Hypercholesterolemia. Increased triglycerides may contribute to hardening of the arteries or thickening of the artery walls (arteriosclerosis) – which increases the risk of stroke, heart attack and heart disease. Extremely high triglycerides can also cause acute inflammation of the pancreas (pancreatitis).

Points to ponder

Blame your genes if you struggle with high triglycerides. Some people are just predisposed to elevated levels of this type of fat in the blood.



Hypertriglyceridemia

What to Do

01 Dietary recommendation

- Maintain a healthy weight with the right diet and exercise.
- Eat a low-fat, low-salt diet that's rich in fruits, vegetables and whole grains.
- Limit foods high in saturated fats, trans fats, sugar, and salt.
- Include low-fat dairy products, lean sources of protein, and plenty of vegetables, fruits, and whole grains.

02 Exercise recommendation

- Aim for at least 150 minutes of moderate-intensity aerobic exercise per week as physical activity can reduce triglyceride levels through various mechanisms.
- Incorporate strength training exercises at least twice a week.

03 Lifestyle recommendation

- Engage in stress-reducing activities like reading, listening to music, or taking a relaxing bath.
- Schedule regular health checkups with your doctor and dietitian to monitor your lipid profile.
- Quit smoking, as this has been found to significantly reduce triglyceride when stopped.
- If consuming alcohol, consume no more than one drink per day for women and two drinks per week for men.

References

- Guo T, Yin RX, Lin WX, Wang W, Huang F, Pan SL. Association of the variants and haplotypes in the DOCK7, PCSK9 and GALNT2 genes and the risk of hyperlipidaemia. *J Cell Mol Med*. 2016;20(2):243-265. doi:10.1111/jcmm.12713



LDL-C Levels

Markers Detected

Genes	rsID	Genotype
CELSR2	rs12740374	GT
CELSR2	rs646776	CT
APOB	rs13306194	CC
PCSK9	rs11591147	GG



LDL-C Levels

Your Results

Low effect



Your genetic test results suggest you may have low LDL levels. LDL Cholesterol level over 100 mg/dL is unhealthy and may increase the risk of heart attack by forming plaque in the arteries causing a reduced supply of oxygen to the heart muscles. The tested marker(s) report whether you may have a lower or higher serum LDL level than the average population.

Points to ponder

Certain gene variants make the liver less efficient at clearing out LDL cholesterol, leading to higher levels in the blood. Looks like your body is a cholesterol hoarder.



LDL-C Levels

What to Do

01 Dietary recommendation

- Focus on a balanced diet rich in essential nutrients like vitamins, minerals, and antioxidants.

02 Exercise recommendation

- Engage in at least 30 minutes of light-to-moderate intensity physical activity.

03 Lifestyle recommendation

- Engage in stress-reducing activities like reading, listening to music, or taking a relaxing bath.

References

- Kathiresan S, Melander O, Guiducci C, et al. Six new loci associated with blood low-density lipoprotein cholesterol, high-density lipoprotein cholesterol or triglycerides in humans [published correction appears in Nat Genet. 2008 Nov;40(11):1384]. *Nat Genet.* 2008;40(2):189-197. doi:10.1038/ng.75
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Risk Of Metabolic Syndrome

Metabolic syndrome is a cluster of conditions, including high blood pressure, high blood sugar, excess body fat around the waist, and abnormal cholesterol or triglyceride levels, that increase the risk of heart disease, stroke, and type 2 diabetes. By analyzing your genetic variants associated with metabolic syndrome, we can identify your predisposition and provide targeted dietary strategies to mitigate your risk.



Ability To Lose Weight And Mobilize Fats

Markers Detected

Genes	rsID	Genotype
ADRB2	rs1042713	GA



Ability To Lose Weight And Mobilize Fats

Your Results

Medium effect



Your genetic test results suggest you may have moderate difficulty losing weight and have increased insulin resistance. Your genetic markers may make it harder or slower for you to lose that extra weight. This is because you may have slower lipolytic activity (the ability to mobilize fats from adipocytes).

Points to ponder

Did you know that some people are genetically predisposed to being "fat burners" - their bodies are naturally better at mobilising and using fat for energy during exercise? These lucky individuals can lose weight more easily through exercise.



Ability To Lose Weight And Mobilize Fats

What to Do

01 Dietary recommendation

- Focus on a balanced, calorie-controlled diet that is rich in whole and unprocessed food.
- Emphasize high fiber, low glycemic carbohydrates like vegetables, fruits, and whole grains.
- Increase protein intake to preserve muscle mass during weight loss.
- Incorporate healthy fats in the diet.

02 Exercises recommendation

- Regularly engage in cardiovascular exercise like brisk walking, jogging, or cycling to boost fat burning.
- Incorporate strength training to build and maintain muscle mass, which will increase metabolism.
- Consider high-intensity interval training to maximize fat burning.

03 Avoid Sugars

- Limit added sugars and refined carbohydrates, that can contribute to insulin resistance.
- Avoid sugary drinks, desserts, and processed snacks or drinks.
- Have a habit of label reading before eating packaged foods. Avoid the packages that have sugar or other derivatives mentioned among the first 3 ingredients.

References

- Xenos K, Papasavva M, Raptis A, Katsarou MS, Drakoulis N. Vitamin D Supplementation and Genetic Polymorphisms Impact on Weight Loss Diet Outcomes in Caucasians: A Randomized Double-Blind Placebo-Controlled Clinical Study. *Front Med (Lausanne)*. 2022;9:811326. Published 2022 Mar 3. doi:10.3389/fmed.2022.811326



Circadian Rhythm And Appetite Regulation

Markers Detected

Genes	rsID	Genotype
CLOCK	rs1801260	TT
GHRL	rs696217	CC
intergenic_variant	rs17782313	AA

***intergenic_variant:** A transcript variant occurs within a gene that is not expressed or operative in the final RNA product.



Circadian Rhythm And Appetite Regulation

Your Results

Low effect



Your genetic test results suggest you may have a low tendency to have increased appetite, higher body mass index (BMI) and obesity. You can ensure that your sleep/wake cycle is not disrupted, as it can cause increased body weight and unhealthy eating habits. The CLOCK gene encodes a key protein regulating circadian rhythms. Genetic variants in this gene may cause disturbances in your sleep patterns and stress response, and cause you to consume more calories than needed. MC4R: The gene encodes the Melanocortin 4 receptor, a protein expressed mainly in the brain and in the gut. This protein strongly influences the number of calories we consume. Genetic variants in this gene may cause an increased appetite and a tendency to consume more high-fat foods. The GHRL gene encodes the ghrelin-obestatin preproprotein, which is cleaved to produce two peptides, ghrelin and obestatin. Ghrelin is a powerful appetite stimulant. In addition, it is involved in energy homeostasis and various processes such as gastrointestinal motility, gastric acid secretion and pancreatic glucose-stimulated insulin secretion. Genetic variants in this gene may cause an increased appetite and a tendency to consume more sugary foods.

Points to ponder

Your body's internal clock, known as the circadian rhythm, is partly controlled by your genes. People with certain genetic variants tend to have disrupted circadian rhythms, leading to increased hunger and cravings, especially for high-calorie foods.



Circadian Rhythm And Appetite Regulation

What to Do

01 Lifestyle recommendation

- Prioritize good sleep hygiene by maintaining a consistent sleep schedule and creating a relaxing bedtime routine.
- Manage stress through practices like meditation, yoga, or other relaxation techniques.
- Limit exposure to blue light from screens, especially in the evenings, to support healthy circadian rhythms.

02 Exercise recommendation

- Engage in regular physical activity, such as a combination of cardiovascular exercise (e.g., brisk walking, jogging, cycling) and strength training, for at least 150-300 minutes per week.

03 Dietary recommendation

- Focus on a balanced, calorie-controlled diet rich in whole, nutrient-dense foods like fruits, vegetables, lean proteins, whole grains, and healthy fats.

References

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Lipid Metabolism Regulation

Markers Detected

Genes	rsID	Genotype
PPARG	rs1801282	CG
APOA5	rs3135506	CC
PLIN	rs894160	GG



Lipid Metabolism Regulation

Your Results

Medium effect



Your genetic test results suggest you may have moderately impaired lipid metabolism and are prone to elevated triglyceride and cholesterol values. Lipid metabolism is the synthesis and degradation of lipids in cells, involving the breakdown and storage of fats for energy and the synthesis of structural and functional lipids, such as those involved in the construction of cell membranes. Balancing lipid levels in the blood is an important part of staying healthy. Abnormal levels of blood lipids cause fat deposits in artery walls, which initiates complications inside the blood vessels. Causes for high lipid levels include diabetes, alcoholism, kidney disease, hypothyroidism, liver disease, and stress.

Points to ponder

Did you know that your genes can influence whether you respond better to a low-fat or low-carb diet for weight loss? Personalized nutrition based on your genetic profile is the key to maximizing fat loss.



Lipid Metabolism Regulation

What to Do

01 Lifestyle recommendation

- Keep a habit of reading the nutrition labels of food products that you buy.
- Aim for 7-8 hours of sleep each night to help regulate lipid metabolism.

02 Dietary recommendation

- Increase the intake of fiber-rich, low-calorie nutritious food along with proteins and healthy fats.
- Limit sugar, refined food (i.e., foods with a high glycemic index), and saturated fats in your diet.

03 Exercise recommendation

1. Aim for at least 150 minutes of moderate-intensity aerobic exercise, 75 minutes of vigorous-intensity aerobic exercise, or a combination of both each week. Include strength training exercises at least two times a week.

References

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Risk Of Obesity And Metabolic Syndrome

Markers Detected

Genes	rsID	Genotype
FTO	rs9939609	TT



Risk Of Obesity And Metabolic Syndrome

Your Results

Low effect



Your genetic test results suggest you may have a low BMI. Living with obesity is detrimental to life as it impedes one's ability to perform day-to-day tasks. It also causes heart problems, strokes and cancer. If you are at an increased obesity risk, it is good to consult your physician and help you get started on a plan to lose weight and lead a healthy lifestyle.

Points to ponder

Ever wonder why your fitness-freak friend can eat burgers and fries without gaining an ounce? Genetics may play a role in their metabolism and fat storage.



Risk Of Obesity And Metabolic Syndrome

What to Do

01 Dietary recommendation

- Maintain a balanced, nutrient-rich diet to support overall health.
- Focus on a variety of vegetables, fruits, whole grains, lean proteins, and healthy fats.
- Limit processed foods, added sugars, and unhealthy fats, but allow for occasional indulgences.

02 Exercises recommendation

- Engage in regular physical activity.
- Incorporate lifestyle changes, such as getting enough sleep, managing stress, and limiting sedentary time.

03 Limit Sugars

- Limit sugary beverages, desserts, and processed foods with high added sugar content.
- Focus on natural sources of sweetness, such as fruits and berries.

References

- Loos RJ, Yeo GS. The bigger picture of FTO: the first GWAS-identified obesity gene. *Nat Rev Endocrinol.* 2014;10(1):51-61. doi:10.1038/nrendo.2013.227
- Warodomwicht D, Shen J, Arnett DK, et al. ADIPOQ polymorphisms, monounsaturated fatty acids, and obesity risk: the GOLDN study. *Obesity (Silver Spring).* 2009;17(3):510-517. doi:10.1038/oby.2008.583



Sensitivity To Saturated Fats And Refined Carbohydrates

Markers Detected

Genes	rsID	Genotype
FABP2	rs1799883	AG



Sensitivity To Saturated Fats And Refined Carbohydrates

Your Results

Low effect



Your genetic test results suggest you may have low triglyceride and LDL Cholesterol levels. The gene FABP2 encodes for the Intestinal Fatty Acid Binding Protein, a protein expressed in the small intestine that plays important roles in fat absorption and transport. Genetic variants may lead to high TG levels and LDL cholesterol (the so-called “bad cholesterol”) and negatively affect glucose levels and insulin response.

Points to ponder

Ever wonder why your friend can eat white bread and pasta without a care, while you feel sluggish and bloated? Genetics may explain their carb-tolerance superpower.



Sensitivity To Saturated Fats And Refined Carbohydrates

What to Do

01 Dietary recommendation

- Focus on a balanced diet rich in essential nutrients like vitamins, minerals, and antioxidants.

02 Exercise recommendation

- Regular physical activity, such as 30 minutes of moderate-intensity exercise per day.

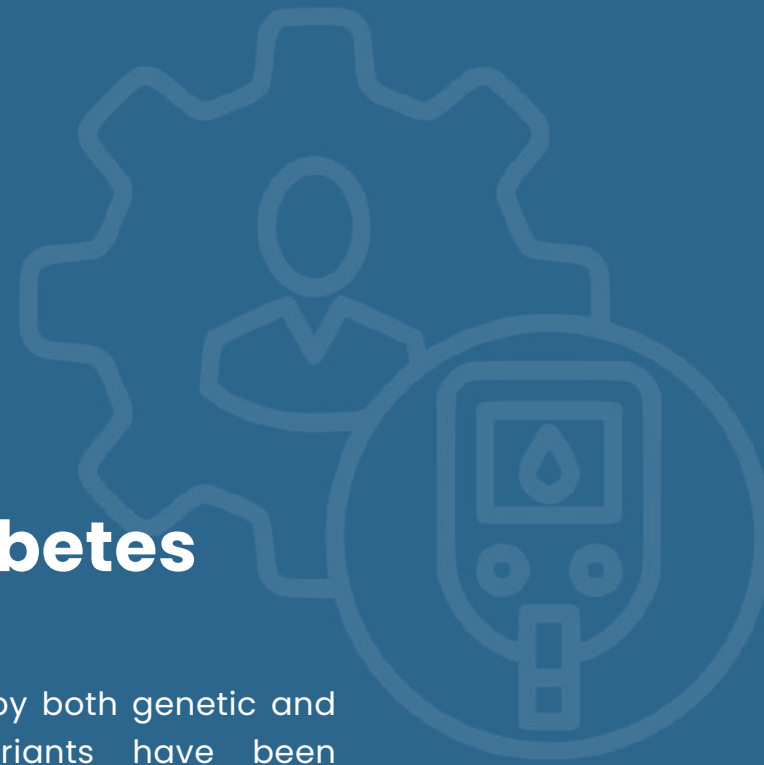
03 Lifestyle recommendation

- Maintain a healthy body weight through a balanced diet and regular exercise.
- Manage stress through relaxation techniques like meditation or deep breathing.
- Regular health checkups and lipid profile tests.

References

- Raza ST, Abbas S, Siddiqi Z, Mahdi F. Association between *ACE* (rs4646994), *FABP2* (rs1799883), *MTHFR* (rs1801133), *FTO* (rs9939609) Genes Polymorphism and Type 2 Diabetes with Dyslipidemia. *Int J Mol Cell Med*. 2017;6(2):121-130. doi:10.22088/acadpub.BUMS.6.2.6

Susceptibility to Diabetes



Diabetes is a complex disease influenced by both genetic and lifestyle factors. Numerous genetic variants have been associated with an increased risk of developing diabetes. Diabetes is a disease in which one's blood sugar levels are too high. In our body, a hormone, Insulin, regulates the glucose levels to effectively provide energy to the body cells. Type 2 diabetes, is the common form of diabetes seen in adults, where one's body does not make or use insulin well thereby causing a rise in blood sugar levels. The greater the number of family members who have type 2 diabetes, the higher the risk of having the disease. Shared lifestyle impacts (such as diet and exercise habits) within a family also contribute to the higher risk. These factors are probably partly to blame. According to several meta-analyses, diabetes is linked to a 25%–41% higher chance of dying from any type of cancer. Diabetes mellitus appears to be associated with an elevated risk of certain malignancies. However, some cancers and cancer treatments may result in diabetes mellitus. Diabetes mellitus and cancer seem to interact through genetic variables, obesity, inflammation, oxidative stress, hyperglycemia, hyperinsulinemia, insulin, and certain oral hypoglycemic medications. By analyzing your genetic profile, we can assess your predisposition to type 2 diabetes and provide personalized dietary advice to help prevent or manage the condition.



Fat Mass And Insulin Sensitivity

Markers Detected

Genes	rsID	Genotype
FTO	rs9939609	TT



Fat Mass And Insulin Sensitivity

Your Results

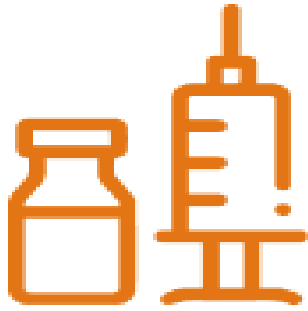
Low effect



Your genetic test results suggest you may have a low risk of having Type-2 Diabetes. Due to insulin resistance and type 2 diabetes are prone to overweight and blood lipid regulation disorders. Although type 1 and type 2 diabetes can start in infancy or maturity, type 2 diabetes was once referred to as adult-onset diabetes. Older persons are more likely to have type 2. However, a greater percentage of younger people are developing type 2 diabetes as a result of the rise in obese children. Exercise, a healthy diet, and weight loss can all aid in illness management.

Points to ponder

Carrying extra fat, especially around your belly, is linked to insulin resistance. It's like your body's cells are ignoring insulin's knocks on the door to let glucose in.



Fat Mass And Insulin Sensitivity

What to Do

01 Dietary recommendation

- Focus on a balanced diet rich in essential nutrients like vitamins, minerals, and antioxidants.

02 Exercise recommendation

- Regular physical activity, such as 30 minutes of moderate-intensity exercise per day.

03 Lifestyle recommendation

- Schedule occasional health checkups with your healthcare provider to monitor blood sugar levels and insulin sensitivity.

References

- Raza ST, Abbas S, Siddiqi Z, Mahdi F. Association between *ACE* (rs4646994), *FABP2* (rs1799883), *MTHFR* (rs1801133), *FTO* (rs9939609) Genes Polymorphism and Type 2 Diabetes with Dyslipidemia. *Int J Mol Cell Med*. 2017;6(2):121-130. doi:10.22088/acadpub.BUMS.6.2.6



Linked To Type-2 Diabetes And Cancer

Markers Detected

Genes	rsID	Genotype
TCF7L2	rs12255372	GG



Linked To Type-2 Diabetes And Cancer

Your Results

Low effect



Your genetic test results suggest you may have a low risk of having Type-2 Diabetes and they are less prone to cancer. Although type 1 and type 2 diabetes can start in infancy or maturity, type 2 diabetes was once referred to as adult-onset diabetes. Older persons are more likely to have type 2. However, a greater percentage of younger people are developing type 2 diabetes as a result of the rise in obese children. Exercise, a healthy diet, and weight loss can all aid in illness management. Numerous important organs, including the heart, blood arteries, nerves, eyes, and kidneys are impacted by type 2 diabetes. If you may have diabetes, you're more at risk of developing certain cancers. And some cancer treatments can affect your diabetes and make it harder to control your blood sugar.

Points to ponder

Having insulin resistance is dangerous as it increases your risk of developing type 2 diabetes and certain cancers. It's like your body is a ticking time bomb of metabolic problems.



Linked To Type-2 Diabetes And Cancer

What to Do

01 Dietary recommendation

- Focus on a balanced diet rich in essential nutrients like vitamins, minerals, and antioxidants.

02 Exercise recommendation

- Regular physical activity, such as 30 minutes of moderate-intensity exercise per day.

03 Lifestyle recommendation

- Get adequate sleep (7-9 hours per night) and manage stress levels.

References

- Grant SF, Thorleifsson G, Reynisdottir I, et al. Variant of transcription factor 7-like 2 (TCF7L2) gene confers risk of type 2 diabetes. *Nat Genet.* 2006;38(3):320-323. doi:10.1038/ng1732



Risk Of Diabetes Complications

Markers Detected

Genes	rsID	Genotype
AGER	rs184003	GT



Risk Of Diabetes Complications

Your Results

Medium effect



Your genetic test results suggest you may have a moderate risk of having Type 2 Diabetes. Although type 1 and type 2 diabetes can start in infancy or maturity, type 2 diabetes was once referred to as adult-onset diabetes. Older persons are more likely to have type 2. However, a greater percentage of younger people are developing type 2 diabetes as a result of the rise in obese children. Exercise, a healthy diet, and weight loss can all aid in illness management. Numerous important organs, including the heart, blood arteries, nerves, eyes, and kidneys, are impacted by type 2 diabetes. Moreover, there are risk factors for other severe diseases that are associated with an increased risk of diabetes. Controlling blood sugar and managing diabetes can reduce the chance of developing these issues as well as other illnesses.

Points to ponder

If you already have type 2 diabetes, having high triglycerides and insulin resistance can worsen complications like nerve damage, kidney disease, and vision loss. It's like pouring salt in the wounds.



Risk Of Type II Diabetes

Markers Detected

Genes	rsID	Genotype
SLC2A2	rs5400	CC
TCF7L2	rs7903146	CC



Risk Of Type II Diabetes

Your Results

Low effect



Your genetic test results suggest you may have a low risk of having Type-2 Diabetes. Although type 1 and type 2 diabetes can start in infancy or maturity, type 2 diabetes was once referred to as adult-onset diabetes. Older persons are more likely to have type 2. However, a greater percentage of younger people are developing type 2 diabetes as a result of the rise in obese children. Exercise, a healthy diet, and weight loss can all aid in illness management. Numerous important organs, including the heart, blood arteries, nerves, eyes, and kidneys are impacted by type 2 diabetes. Moreover, there are risk factors for other severe diseases that are associated with an increased risk of diabetes. Controlling blood sugar and managing diabetes can reduce the chance of developing these issues as well as other illnesses. If you may have diabetes, you're more at risk of developing certain cancers. And some cancer treatments can affect your diabetes and make it harder to control your blood sugar.

Points to ponder

Carrying genetic variants that raise triglycerides and fat mass can increase your risk of developing type 2 diabetes by up to 40%. It's like your genes are stacking the deck against you.



Risk Of Type II Diabetes

What to Do

01 Dietary recommendation

- Focus on a balanced diet rich in essential nutrients like vitamins, minerals, and antioxidants.

02 Exercise recommendation

- Regular physical activity, such as 30 minutes of moderate-intensity exercise per day.

03 Lifestyle recommendation

- Annual health checks to rule out complications.
- Regular follow-up with physicians or diabetologists, dieticians, and diabetes educators.

References

- Lyssenko V, Lupi R, Marchetti P, et al. Mechanisms by which common variants in the TCF7L2 gene increase risk of type 2 diabetes. *J Clin Invest*. 2007;117(8):2155-2163. doi:10.1172/JCI30706
- Borglykke A, Grarup N, SparsÅ, T, et al. Genetic variant SLC2A2 [corrected] is associated with risk of cardiovascular disease ÅcÅ assessing the individual and cumulative effect of 46 type 2 diabetes related genetic variants [published correction appears in PLoS One. 2013;8(5). doi:10.1371/annotation/77e1d9b0-2b94-4a1b-95d5-4336258cecef]. *PLoS One*. 2012;7(11):e50418. doi:10.1371/journal.pone.0050418
- Shi Y, Li Y, Wang J, et al. Meta-analyses of the association of G6PC2 allele variants with elevated fasting glucose and type 2 diabetes. *PLoS One*. 2017;12(7):e0181232. Published 2017 Jul 13. doi:10.1371/journal.pone.0181232

Women/Men Health

This **Reports** Covers

Metabolism Of Hormones And Xenobiotics



Metabolism Of Hormones And Xenobiotics



Your genes play a major role in how your body metabolizes hormones like estrogen, testosterone, and thyroid hormones, as well as foreign compounds called xenobiotics (e.g. drugs, toxins, pollutants). Genetic variants can impact the enzymes responsible for metabolizing these substances, leading to imbalances that contribute to conditions like hormone-related cancers, infertility, and chronic fatigue. By analyzing your genetic profile, we can provide personalized recommendations on dietary changes and targeted supplements to support healthy hormone and xenobiotic metabolism.



Estrogen And Xenobiotics Metabolism

Markers Detected

Genes	rsID	Genotype
COMT	rs4680	AA
NQO1	rs1800566	TT
CYP1B1	rs1056827	GG



Estrogen And Xenobiotics Metabolism

Your Results

High effect



Your genetic test results suggest you may have a negative effect of Estrogen And Xenobiotics Metabolism. Estrogen metabolism and detoxification is the process by which the body breaks down estrogens to prevent leftover estrogen metabolites causing problematic side effects and increasing the risk for breast cancer for postmenopausal women. Drug metabolism, sometimes called xenobiotic metabolism, is the process of biotransforming less polar compounds into more polar compounds that can be excreted more easily. Biotransformation typically occurs through a series of enzymatic reactions involving the cytochrome P450 system.

Points to ponder

Variants that slow down xenobiotic metabolism could make your bones more vulnerable to these toxins and lead to faster bone loss.



Estrogen And Xenobiotics Metabolism

What to Do

01 Dietary recommendation

- Include food that supports estrogen metabolism like cruciferous vegetables (for sulforaphane content), omega-3 fatty acids, and fibers.
- Avoid food that may interfere with estrogen metabolism.
- Include estrogen-boosting food: flaxseeds, peach, garlic, alfalfa sprouts, tofu.

02 Exercise recommendation

- Engage in regular physical activity to support overall health and hormone regulation.
- Incorporate exercises that promote detoxification, such as yoga and high-intensity interval training (HIIT).

03 Lifestyle recommendation

- Ensure adequate sleep (7-8 hours) to support hormone regulation and detoxification.
- Manage stress through relaxation techniques like meditation and deep breathing.
- Avoid caffeine intake and quit smoking.

References

- Louis E, Vermeire S, Rutgeerts P, et al. A positive response to infliximab in Crohn disease: association with a higher systemic inflammation before treatment but not with -308 TNF gene polymorphism. *Scand J Gastroenterol*. 2002;37(7):818-824.
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- Akhtari FS, Green AJ, Small GW, et al. High-throughput screening and genome-wide analyses of 44 anticancer drugs in the 1000 Genomes cell lines reveals an association of the NQO1 gene with the response of multiple anticancer drugs. *PLoS Genet*. 2021;17(8):e1009732. Published 2021 Aug 26. doi:10.1371/journal.pgen.1009732

Physical and Behavioural Traits

This **Reports** Covers

Addiction

Cognitive Behaviour

Physical Traits



Addiction

Addiction is a complex condition influenced by genetic, environmental, and psychological factors. Genetic variants can influence an individual's susceptibility to addiction. While nutrigenomics cannot directly treat addiction, analyzing your genetic profile can provide insights into your predisposition and help guide you toward healthier coping mechanisms and lifestyle choices.



Alcohol Addiction

Markers Detected

Genes	rsID	Genotype
GCKR	rs1260326	TC
OPRM1	rs1799971	AG
ADH1B	rs1229984	GG
ADH1C	rs2241894	AG



Alcohol Addiction

Your Results

High effect



Your genetic test results suggest you may have a high alcohol dependence. Most definitions of alcohol dependence include the following descriptors: a compulsion to seek and consume alcohol, a loss of control over consumption after beginning a drinking session, and a strong likelihood of relapse during or after withdrawal. Alcohol dependence, or alcoholism or alcohol addiction, is a strong and uncontrollable desire to drink which is often at a level of health risk. An alcohol dependent feels that they're not able to function or survive without it and there is a constant urge to reach out to satisfy the need to have more alcohol. At times this leads to an unbalanced lifestyle and disruption of social and family life. The most harmful consequence of alcohol dependence is its associated health risk most commonly liver disease and psychiatric depression.

Points to ponder

Genetics can account for up to 60% of a person's risk of developing alcohol dependence. That's a huge genetic influence on something that can ruin lives.



Alcohol Addiction

What to Do

01 Hydration Level

- Drink plenty of water throughout the day to help flush out toxins from the body. Aim for at least 8-10 glasses of water per day.
- Avoid caffeine and sugary drinks as these can exacerbate dehydration and worsen the effects of alcohol dependence.
- To maintain a healthy balance, include electrolyte-rich foods like bananas, avocados, and leafy greens.

02 Healthcare Help

- Undergo medical supervision during detoxification to ensure a safe and controlled process.
- Monitor your liver function and mental health to prevent and manage potential complications.
- Engage in individual or group therapy sessions to address underlying issues contributing to your addiction and develop coping strategies.

03 Mental Health

- Identify and avoid situations that may trigger your desire to drink.
- Engage in healthy activities like hobbies, sports, or creative pursuits to fill the void left by drinking.
- Prioritize self-care by getting enough sleep, practicing good hygiene, and taking breaks to relax and recharge.

References

- Kranzler HR, Zhou H, Kember RL, et al. Genome-wide association study of alcohol consumption and use disorder in 274,424 individuals from multiple populations [published correction appears in Nat Commun. 2019 May 17;10(1):2275. doi: 10.1038/s41467-019-10254-5.] [published correction appears in Nat Commun. 2019 Sep 3;10(1):4050. doi: 10.1038/s41467-019-11916-0.]. *Nat Commun.* 2019;10(1):1499. Published 2019 Apr 2. doi:10.1038/s41467-019-09480-8
- Gelernter J, Kranzler HR, Sherva R, et al. Genome-wide association study of alcohol dependence: significant findings in African- and European-Americans including novel risk loci. *Mol Psychiatry.* 2014;19(1):41-49. doi:10.1038/mp.2013.145



Nicotine Dependence

Markers Detected

Genes	rsID	Genotype
CHRNA3	rs1051730	CC



Nicotine Dependence

Your Results

Low effect



The result of your genetic test suggests you may have a low nicotine dependence. A particular type of stimulant that can be found in tobacco products is nicotine. When your body becomes habituated to having some amount of nicotine in it, it can lead to nicotine dependence. Your body becomes physically and psychologically dependent on the drug. Due to low effect, it would be easy for a person to quit smoking or any nicotine substance. They may come across withdrawal symptoms but it will be easy for them to overcome with help of medication.

Points to ponder

Genetics play a major role in nicotine addiction, with over 30 different genetic regions linked to the risk of becoming a smoker and struggling to quit.



Nicotine Dependence

What to Do

01 Dietary recommendation

- Maintain a balanced diet to ensure adequate intake of vitamins and minerals.

02 Exercise recommendation

- Engage in regular physical activity, such as cardio exercises, strength training, and flexibility exercises.

03 Lifestyle recommendation

- Stay away from situations or environments that tempt nicotine use.

References

- Pérez-Morales R, González-Zamora A, González-Delgado MF, et al. *CHRNA3* rs1051730 and *CHRNA5* rs16969968 polymorphisms are associated with heavy smoking, lung cancer, and chronic obstructive pulmonary disease in a Mexican population. *Ann Hum Genet.* 2018;82(6):415–424. doi:10.1111/ahg.12264
- Chmielowiec K, Chmielowiec J, Stroska-Pluta A, et al. Association of Polymorphism *CHRNA5* and *CHRNA3* Gene in People Addicted to Nicotine. *Int J Environ Res Public Health.* 2022;19(17):10478. Published 2022 Aug 23. doi:10.3390/ijerph191710478

Cognitive Behaviour

Your genes play a significant role in cognitive abilities like memory, focus, and processing speed. By examining genetic variants associated with neurotransmitter metabolism, brain-derived neurotrophic factor (BDNF), and inflammation, we can identify areas of potential concern and suggest targeted dietary interventions to support optimal brain function.





Anxiety Response

Markers Detected

Genes	rsID	Genotype
COMT	rs4680	AA



Anxiety Response

Your Results

Low effect



Your genetic test results suggest you may have low Anxiety Response. Anxiety is a normal emotion that causes increased alertness, fear, and physical signs, such as a rapid heart rate. If you're experiencing symptoms of anxiety over a long period, you may have an anxiety disorder. Some symptoms of it are your worrying is uncontrollable and causes distress, and your worrying affects your daily life, including school, your job and your social life. You are irritable, muscles are tense, struggle with concentrating on a task or trouble sleeping. Note: This result is not the singular determinant for anxiety response. Many factors influence anxiety response such as environment and other genetic markers.

Points to ponder

Certain genetic variants can make your body more prone to an exaggerated stress response, leading to higher levels of anxiety and panic.



Anxiety Response

What to Do

01 Dietary recommendation

- Calcium-rich foods like dairy, leafy greens, and fortified plant-based milk to help regulate neurotransmitters and reduce anxiety.
- Aim for 2-3 cups of green tea per day. Green tea contains L-theanine, which promotes relaxation and reduces anxiety symptoms.
- Drink chamomile tea 30 minutes before bedtime to improve sleep quality and reduce anxiety symptoms.
- Consume 2-3 eggs per week, eggs are a rich source of tryptophan, a neurotransmitter that helps regulate mood and anxiety. They also contain vitamin D, which has been linked to reduced symptoms of depression and anxiety.

02 Exercise and lifestyle recommendation

- Engage in regular aerobic exercise, such as brisk walking, cycling, or swimming.

03 Mental health recommendation

- Practice mindfulness and relaxation techniques, such as deep breathing, progressive muscle relaxation, and visualization.
- Establish a consistent sleep schedule and maintain a sleep-conducive environment.

References

- Nkam I, Ramoz N, Breton F, Mallet J, Gorwood P, Dubertret C. Impact of DRD2/ANKK1 and COMT Polymorphisms on Attention and Cognitive Functions in Schizophrenia. *PLoS One*. 2017;12(1):e0170147. Published 2017 Jan 13. doi:10.1371/journal.pone.0170147

Physical Traits

Your physical traits, such as muscle composition, bone density, and athletic performance, are influenced by your genetic makeup. By analyzing genetic markers related to muscle growth, bone metabolism, and energy production, we can guide exercise regimens and nutrient intake to help you achieve your fitness goals and maintain overall physical health.



Earwax Type And Body Odor

Markers Detected

Genes	rsID	Genotype
ABCC11	rs17822931	AG



Earwax Type And Body Odor

Your Results

Low effect



Your genetic test results suggest that you have a dry earwax and lower body odour. Although it may seem contradictory, earwax keeps your ears clean. It gathers debris and microorganisms and gently extracts them from the ear canal. The same gene is responsible for body odor and perspiration production. lower body order is correlated with an individual's perspiration containing low-fat molecules.

Points to ponder

Certain genetic variants can influence the production of body odor-causing compounds. It's like your genes are secretly programming you to be a walking fragrance factory.



Earwax Type And Body Odor

What to Do

01 Ear Health

- Refrain from attempting to remove ear wax and instead leave their ears alone as long as they are healthy.

02 Ear Care

- Taking care of your ears involves cleaning the outer ear after each night's bath with a warm, moist towel to facilitate the earwax's natural migration out of the ear.

03 Manitaning Hygine

- Take a regular bath or shower using antibacterial soap to keep your skin clean.
- Pay particular attention to the regions in your groin and armpits where you perspire the most.
- Regularly eliminating some of the microorganisms on your skin can help avoid offensive body odor.

References

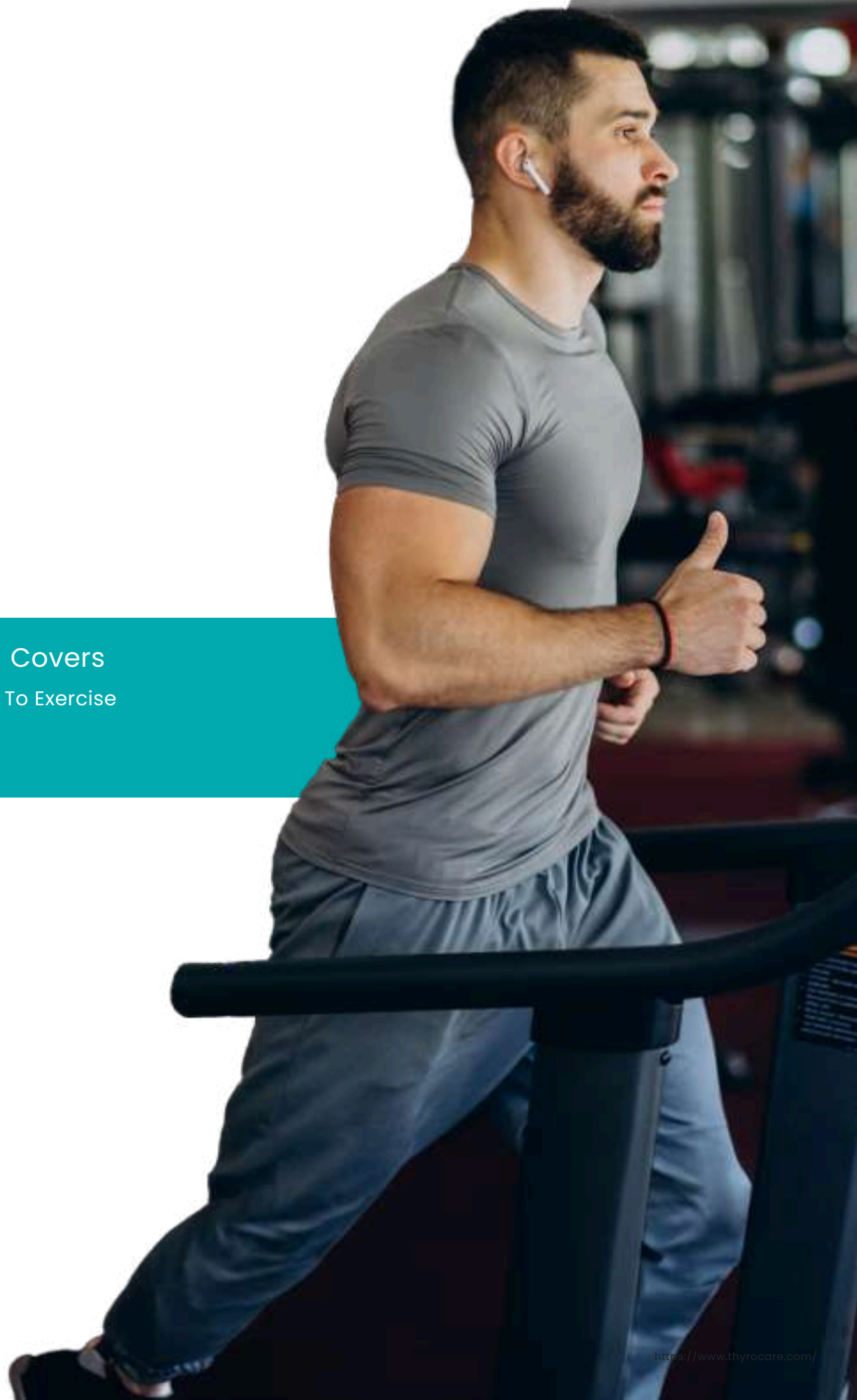
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Fitness

This **Reports** Covers

Body Response To Exercise

Exercise Ability



Body Response To Exercise

Your body responds to exercise training is heavily influenced by your genes. Certain variants are linked to greater improvements in cardiovascular fitness, muscle strength, and body composition with training. Nutrigenomic analysis can reveal your genetic potential for different exercise adaptations. We can then design a training program that plays to your genetic strengths, optimising your exercise response for enhanced health and performance.



Tissue Injury

Markers Detected

Genes	rsID	Genotype
COL1A1	rs1800012	GG



Tissue Injury

Your Results

Low effect



Your genetic test results suggest you may have a low risk of tissue injury. Damage to the soft tissues of muscles, ligaments, and tendons can result from a variety of activities. Damage, bruising, discomfort, and edema may follow. A contusion, often known as a bruise, is a soft tissue injury that is frequently caused by a blunt force, like a hit, fall, or kick. Rest, ice, compression, and elevation are all part of the treatment for contusions.

Points to ponder

Certain variants of the Tenascin C gene are associated with increased risk of Achilles tendinopathy and knee ligament injuries. Tenascin C is abundant in developing tendons, bone and cartilage.



Tissue Injury

What to Do

01 Dietary recommendation

- Drink plenty of water (8–10 glasses) to maintain proper hydration levels.
- Focus on a balanced diet rich in essential nutrients like vitamins, minerals, and antioxidants.

02 Exercise recommendation

- Always warm up before physical activity and cool down afterwards to prevent sudden muscle strains.
- Engage in regular stretching and flexibility exercises to maintain muscle flexibility and reduce the risk of injury.

03 Lifestyle recommendation

- Practice stress management techniques like meditation, deep breathing, or yoga to reduce stress and prevent muscle tension.
- Establish a consistent sleep schedule

References

- Wang C, Li H, Chen K, Wu B, Liu H. Association of polymorphisms rs1800012 in COL1A1 with sports-related tendon and ligament injuries: a meta-analysis. *Oncotarget*. 2017;8(16):27627–27634. doi:10.18632/oncotarget.15271
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Exercise Ability

Genes impact various aspects of exercise performance, including muscle fiber composition, oxygen uptake, and fatigue resistance. Knowing your genetic predispositions can guide the type, duration, and intensity of exercise that will yield the best results. We can customize a personalized exercise plan based on your genetic profile that maximizes your natural abilities and minimizes your weaknesses, helping you achieve your fitness goals more efficiently.



Endurance

Markers Detected

Genes	rsID	Genotype
GNB3	rs5443	CT
NOS3	rs1799983	GG
NOS3	rs2070744	TT
MYBPC3	rs1052373	GA
HIF1A	rs11549465	CC
NFATC4	rs2229309	GG
VEGFA	rs2010963	CC
PPARGC1A	rs8192678	GG
SLC16A1	rs1049434	TT
AMPD1	rs17602729	CC
AQP1	rs1049305	GG
TFAM	rs1937	GG



Endurance

Your Results

Low effect



Your genetic test results suggest you may have high endurance. Increased endurance is directly proportional to aerobic capacity and is necessary for certain sports. One can develop their endurance levels by exercising for a long time, eating a healthy diet, and taking adequate rest.

Points to ponder

Your genes play a big role in determining your endurance capacity. People with variants that promote efficient oxygen use and fat burning tend to excel at endurance sports.



Endurance

What to Do

01 Exercise and lifestyle recommendation

- Start with low-intensity aerobic exercises and gradually increase intensity and duration.
- Incorporate strength training exercises to improve overall muscle endurance.
- Prioritize proper warm-up and cool-down routines to prevent injury.

02 Dietary recommendation

- Focus on a balanced diet rich in complex carbohydrates, lean proteins, and healthy fats.
- Include foods high in iron, such as red meat, spinach, and beans, to support oxygen delivery to muscles.
- Incorporate foods rich in antioxidants, such as berries, leafy greens, and nuts, to reduce oxidative stress.

03 Hydration Level

- Consider having 7-8 glasses of water per day

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Hand Grip Strength

Markers Detected

Genes	rsID	Genotype
SLC39A8	rs13107325	GA



Hand Grip Strength

Your Results

Medium effect



Your genetic test results suggest you may have low hand grip strength. Power or physical capacity of the hand to exert force, carry heavy objects or withstand pressure. Grip strength is a generic term that is also used to describe an athlete's physical strength, namely the force and power that can be produced with the hands. In sports, grip strength is crucial for rock climbers and a key component in strongman and weightlifting events. In addition to being a significant component of martial arts, grip strength training is also beneficial in a variety of occupations requiring manual dexterity. There has been extensive medical and ergonomic research looking at grip strength, which has found that 95% of men have a grip strength greater than 90% of women. Hand grip strength is very important when it comes to sports. Before a player begins playing, a hand grip strength test is important for determining a player's workout.

Points to ponder

Grip strength is a good indicator of overall muscle power and health. It's influenced by many genes that regulate muscle mass, structure, and function.



Hand Grip Strength

What to Do

01 Dietary recommendation

- Increase calcium intake to support bone health and potentially improve grip strength.
- Include omega-3-rich foods to reduce inflammation and promote overall health.
- Include protein-rich Foods to support muscle mass and strength.

02 Exercise recommendation

- Engage in resistance exercises like weightlifting, bodyweight exercises, or resistance band exercises to strengthen muscles and improve grip strength.
- Incorporate exercises that challenge balance and coordination, such as tai chi or balance exercises, to improve overall physical fitness.

03 Lifestyle recommendation

- Maintain proper posture to reduce strain on muscles and joints, which can contribute to lower grip strength.

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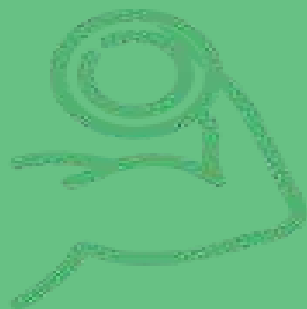
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Power/Strength

Markers Detected

Genes	rsID	Genotype
ACTN3	rs1815739	TC
NOS3	rs2070744	TT
AGT	rs699	TC



Power/Strength

Your Results

Low effect



Your genetic test results suggest you may have increased power/strength. Power is the ability to overcome resistance in the shortest period of time, leading to the ability to produce higher velocities against a given load.

Points to ponder

Genetic testing can help identify your natural strengths and weaknesses when it comes to power and strength. But hard work and proper training are still essential to reaching your full potential.



Power/Strength

What to Do

01 Dietary recommendation

- Consume a diet slightly higher in protein to support increased muscle growth and recovery.
- Aim for 1.6–2.2 grams of protein per kilogram of body weight.
- Ensure adequate carbohydrate intake to fuel your workouts and replenish glycogen stores.

02 Exercise recommendation

- Focus on power-based exercises like Olympic lifts, plyometrics, and sprints to maximize your genetic potential.
- Incorporate heavy resistance training to continually challenge your muscles and promote further strength gains.

03 Lifestyle recommendation

- Prioritize recovery with adequate sleep, hydration, and stress management.
- Consider incorporating active recovery activities like light cardio or mobility work on non-training days.

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