



DNA Wellness Report:

Nutrition and Absorption Insights

For:

Alex Morgan

KIT ID: SAMPLE-DNA-0001

Report type: Wellness

Genetic variations: 25 SNPs

Date: 2026-10-01

Dear Alex Morgan

Thank you for choosing our genetic analysis service.

We are pleased to provide you with personalized genetic insights based on selected variants identified in your DNA. This report is designed to provide educational and general wellness information about genetic variants and associations reported in scientific literature.

Our goal is to present your results in a clear and informative format to help you better understand selected genetic characteristics related to general wellness.

This report is intended for educational and general wellness purposes only. It is not intended to diagnose, treat, cure, mitigate, or prevent any disease or medical condition, and it should not be used as a substitute for professional medical advice.

We hope your experience with our service has been clear, informative, and valuable. If you have any questions or need additional assistance, our team is available to help.

Thank you again for placing your trust in us.

Sincerely,
MAGISNAT OMICS LLC Team

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Introduction

GENETICS is important

DNA Wellness Report: Nutrition and Absorption Insights

Nutrition- and absorption related biological processes include mechanisms involved in the metabolism, absorption, transport, and use of nutrients in the body. This DNA report analyzes **25 selected genetic variants (SNPs)** that have been studied in relation to biological pathways associated with the metabolism of vitamins, minerals, carbohydrates, and lipids, as well as certain food preference traits and responses to dietary intake. Scientific literature suggests that genetic variation may contribute to differences in some nutrient-related processes among individuals. The information in this report is provided for educational and general wellness purposes and is intended to offer context about genetic variation and nutrition-related biological pathways. **This report is not intended to diagnose, treat, cure, mitigate, or prevent any disease or medical condition.**

Traits



**Vitamin
Metabolism**



Mineral Metabolism



**Carbohydrate
Metabolism**



Lipid Metabolism



Food Preferences



Diet Response

Understanding the Report

How to Read Your Genetic Results

This report presents information about selected genetic variants, specifically single nucleotide polymorphisms (SNPs), analyzed within or in relation to specific genes.

Each result includes the gene name, gene function, SNP ID, genotype, represented by the combination of alleles detected at that genetic position, outcome, and recommendation.

The outcome summarizes the reported scientific association between the identified genotype and a general wellness-related trait or biological process.

The recommendation provides general wellness information based on this association and is not intended as medical advice.

The information provided in this report is based on published scientific research describing associations between selected genetic variants and biological traits or processes related to general wellness.

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Report summary

Vitamin Metabolism

Gene	SNP ID	Genotype	Page
BCO1	rs6564851	G/G	8
BCO1	rs12934922	A/A	8
BCO1	rs7501331	C/T	9
MTHFR	rs1801133	G/A	10
FUT2	rs602662	G/G	11
SLC23A1	rs33972313	T/T	12
GC	rs4588	T/T	13
GC	rs2282679	G/G	14
CYP2R1	rs10741657	A/G	14
CD36	rs1527479	C/C	15
PEMT	rs7946	T/T	16

Mineral Metabolism

Gene	SNP ID	Genotype	Page
TMPRSS6	rs855791	A/A	19
TF	rs3811647	G/A	19

Carbohydrate Metabolism

Gene	SNP ID	Genotype	Page
SLC30A8	rs13266634	T/T	21
ADIPOQ	rs266729	C/C	22

Lipid Metabolism

Gene	SNP ID	Genotype	Page
FADS1	rs174547	T/T	23
APOA5	rs662799	A/G	24
LIPC	rs2070895	A/A	25
LPL	rs328	C/C	25

Food Preferences

Gene	SNP ID	Genotype	Page
MCM6/LCT regulatory region	rs4988235	A/G	27
ALDH2	rs671	A/G	28
TAS2R38	rs10246939	C/C	29
TAS1R2	rs35874116	T/C	29

Diet Response

Gene	SNP ID	Genotype	Page
PPARG	rs1801282	C/G	31
FTO	rs8050136	C/C	32

Genetic Data Results

Vitamin Metabolism

Vitamin metabolism includes the biological processes involved in the absorption, transport, activation, storage, and breakdown of vitamins in the body. This section presents information about selected genetic variants that have been studied in relation to biological pathways associated with vitamin metabolism. Scientific literature suggests that genetic variation may be associated with differences in certain vitamin-related processes among individuals.

This report is provided for educational and general wellness purposes only. It is not intended to diagnose, treat, cure, mitigate, or prevent any disease or medical condition. The reported genetic associations do not determine an individual's vitamin status or indicate the presence of a vitamin deficiency and are not intended to diagnose or assess any disease or medical condition.

Reference:

"Vitamin Metabolism." ScienceDirect Topics, Elsevier, n.d.,
<https://www.sciencedirect.com/topics/medicine-and-dentistry/vitamin-metabolism>

Vitamin A

Vitamin A is a fat-soluble vitamin that supports normal vision, immune function, and growth and development. Animal-based foods provide preformed vitamin A, while many plant foods provide beta-carotene, which the body can convert into vitamin A compounds. Genetic variation may be associated with differences in how beta-carotene is converted and how the body uses vitamin A.

Reference:

"Vitamin and Mineral Supplement Fact Sheets", National Institutes of Health, Office of Dietary Supplements.
<https://ods.od.nih.gov/factsheets/VitaminA-Consumer>

Results

Scientific Details

Gene:

BCO1

Gene function:

Beta-Carotene Oxygenase 1.

Key enzyme in the conversion of beta-carotene to vitamin A.

SNP:

rs6564851

Genotype and Outcome

Genotype:

G/G

Associated outcome:

Relatively lower beta-carotene conversion efficiency. [1]

Recommendation

The BCO1 gene encodes beta-carotene oxygenase 1, an enzyme involved in converting beta-carotene into retinal, a biologically active form of vitamin A. An observational study explored whether rs6564851 is associated with differences in beta-carotene conversion. Having two copies (homozygosity) of the rs6564851 G allele, corresponding to the G/G genotype, was associated with relatively lower beta-carotene conversion efficiency compared with the T/T genotype.[1] This genetic result does not determine individual vitamin A status or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Scientific Details

Gene:

BCO1

Gene function:

Beta-Carotene Oxygenase 1.

Key enzyme in the conversion of beta-carotene to vitamin A.

SNP:

rs12934922

Genotype and Outcome

Genotype:

A/A

Associated outcome:

No specific reduction in beta-carotene conversion established for this genotype. [2]

Recommendation

The BCO1 gene encodes beta-carotene oxygenase 1, an enzyme involved in converting beta-carotene into retinal, a vitamin A-related compound. A human study explored whether rs12934922 is associated with differences in beta-carotene conversion, particularly in combination with other BCO1 variants. Having two copies (homozygosity) of the rs12934922 A allele, corresponding to the A/A genotype, does not carry the T allele, and available evidence does not establish a specific reduction in beta-carotene conversion for this genotype.^[2] This genetic result does not determine individual vitamin A status or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Scientific Details

Gene:

BCO1

Gene function:

Beta-Carotene Oxygenase 1.

Key enzyme in the conversion of beta-carotene to vitamin A.

SNP:

rs7501331

Genotype and Outcome

Genotype:

C/T

Associated outcome:

Possible reduced beta-carotene conversion efficiency. ^[2]

Recommendation

The BCO1 gene encodes beta-carotene oxygenase 1, an enzyme involved in converting beta-carotene into retinal, a vitamin A-related compound. A human study explored whether rs7501331 is associated with differences in beta-carotene conversion. Having one copy (heterozygosity) of the rs7501331 T allele, corresponding to the C/T genotype, has been associated with possible reduced beta-carotene conversion efficiency.^[2] This genetic result does not determine individual vitamin A status or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Vitamin B9

Vitamin B9, also known as folate, is a water-soluble B vitamin involved in DNA synthesis and normal cell division. Folate occurs naturally in foods such as leafy greens, vegetables, legumes, and citrus fruits, while folic acid is the form commonly added to fortified foods and used in dietary supplements. Genetic variation may be associated with differences in how folate is metabolized and used in the body.

Reference:

"Vitamin and Mineral Supplement Fact Sheets", National Institutes of Health, Office of Dietary Supplements.
<https://ods.od.nih.gov/factsheets/Folate-Consumer>

Results

Scientific Details

Gene:

MTHFR

Gene function:

Methylenetetrahydrofolate reductase.

Enzyme involved in folate metabolism that converts 5,10-methylenetetrahydrofolate to 5-methyltetrahydrofolate and contributes to homocysteine remethylation.

SNP:

rs1801133

Genotype and Outcome

Genotype:

G/A

Associated outcome:

Possible modest tendency toward higher homocysteine levels, depending on folate status. [3][4]

Recommendation

The MTHFR gene encodes methylenetetrahydrofolate reductase, an enzyme involved in folate and homocysteine metabolism. Some studies have explored whether rs1801133 is associated with differences in MTHFR activity and homocysteine-related measures. Having one copy (heterozygosity) of the rs1801133 A allele, corresponding to the G/A genotype, may be associated with a more modest reduction in MTHFR activity and differences in homocysteine levels, depending on folate status.[3][4] This genetic result does not determine individual folate or homocysteine levels or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Vitamin B12

Results

Scientific Details

Gene:

FUT2

Gene function:

Fucosyltransferase 2.

Enzyme involved in the fucosylation of glycoproteins and glycolipids, contributing to secretor status and the composition of glycans on mucosal surfaces.

SNP:

rs602662

Genotype and Outcome

Genotype:

G/G

Associated outcome:

Possible lower circulating vitamin B12 levels. [5]

Recommendation

The FUT2 gene encodes fucosyltransferase 2, an enzyme involved in glycan fucosylation and secretor status. Some observational studies have explored whether rs602662 is associated with differences in circulating vitamin B12 levels. Having two copies (homozygosity) of the rs602662 G allele, corresponding to the G/G genotype, may be associated with lower circulating vitamin B12 levels compared with the A/A genotype.[5] This genetic result does not determine individual vitamin B12 levels or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Vitamin C

Vitamin C, also known as ascorbic acid, is a water-soluble vitamin involved in several normal biological processes. It acts as an antioxidant, helps regenerate other antioxidants in the body, and supports the absorption of nonheme iron from plant-based foods. Genetic variation may be associated with differences in how vitamin C is absorbed, transported, and used in the body.

Reference:

"Vitamin and Mineral Supplement Fact Sheets", National Institutes of Health, Office of Dietary Supplements.
<https://ods.od.nih.gov/factsheets/VitaminC-Consumer>

Results

Scientific Details

Gene:

SLC23A1

Gene function:

Sodium-dependent vitamin C transporter 1.

Sodium/ascorbate cotransporter. Mediates electrogenic uptake of vitamin C.

SNP:

rs33972313

Genotype and Outcome

Genotype:

T/T

Associated outcome:

Possible lower circulating vitamin C levels. [\[6\]](#)

Recommendation

The SLC23A1 gene encodes sodium-dependent vitamin C transporter 1 (SVCT1), a transport protein involved in vitamin C uptake and homeostasis. Some observational studies have explored whether rs33972313 is associated with differences in circulating vitamin C levels. Having two copies (homozygosity) of the rs33972313 T allele, corresponding to the T/T genotype, may be associated with lower circulating vitamin C levels.[\[6\]](#) This genetic result does not determine individual vitamin C levels or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Vitamin D

Vitamin D is a fat-soluble vitamin that supports normal bone, muscle, and immune function and helps the body absorb calcium. The body can produce vitamin D in the skin in response to sunlight exposure, and vitamin D is also found in certain foods, including fatty fish and fortified foods. Genetic variation may be associated with differences in how vitamin D is transported, metabolized, and used in the body.

Reference:

"Vitamin and Mineral Supplement Fact Sheets", National Institutes of Health, Office of Dietary Supplements.
<https://ods.od.nih.gov/factsheets/VitaminD-Consumer>

Results

Scientific Details

Gene:

GC

Gene function:

Vitamin D-binding protein.

Protein that binds vitamin D and its metabolites in plasma and transports them to target tissues.

SNP:

rs4588

Genotype and Outcome

Genotype:

T/T

Associated outcome:

Possible lower 25-hydroxyvitamin D levels. [\[7\]](#)[\[8\]](#)

Recommendation

The GC gene encodes vitamin D-binding protein, which binds and transports vitamin D and its metabolites in the bloodstream. Some observational studies have explored whether rs4588 is associated with differences in vitamin D-related measures. Having two copies (homozygosity) of the rs4588 T allele, corresponding to the T/T genotype, is associated with lower 25-hydroxyvitamin D levels and lower vitamin D-binding protein levels.[\[7\]](#)[\[8\]](#) This genetic result does not determine individual vitamin D levels or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Scientific Details

Gene:

GC

Gene function:

Vitamin D-binding protein.

Protein that binds vitamin D and its metabolites in plasma and transports them to target tissues.

SNP:

rs2282679

Genotype and Outcome

Genotype:

G/G

Associated outcome:

Possible lower circulating 25-hydroxyvitamin D levels. [\[9\]](#)

Recommendation

The GC gene encodes vitamin D-binding protein, which binds and transports vitamin D and its metabolites in the bloodstream. Some observational studies have explored whether rs2282679 is associated with differences in circulating 25-hydroxyvitamin D levels. Having two copies (homozygosity) of the rs2282679 G allele, corresponding to the G/G genotype, is associated with possible lower circulating 25-hydroxyvitamin D levels.[\[9\]](#) This genetic result does not determine individual vitamin D levels or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Scientific Details

Gene:

CYP2R1

Gene function:

Cytochrome P450 2R1.

Vitamin D 25-hydroxylase that converts vitamin D to 25-hydroxyvitamin D, the main circulating form.

SNP:

rs10741657

Genotype and Outcome

Genotype:

A/G

Associated outcome:

Possible somewhat lower circulating 25-hydroxyvitamin D levels. [\[9\]](#)[\[10\]](#)

Recommendation

The CYP2R1 gene encodes vitamin D 25-hydroxylase, an enzyme involved in the conversion of vitamin D to 25-hydroxyvitamin D, the main circulating form of vitamin D. Some studies have explored whether rs10741657 is associated with differences in circulating 25-hydroxyvitamin D levels. Having one copy (heterozygosity) of the rs10741657 G allele, corresponding to the A/G genotype, may be associated with somewhat lower circulating 25-hydroxyvitamin D levels, although associations may vary across populations.^{[9][10]} This genetic result does not determine individual vitamin D levels or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Vitamin E

Vitamin E is a fat-soluble vitamin that acts as an antioxidant and helps protect cells from oxidative damage caused by free radicals. It also plays a role in normal immune function. Vitamin E is found in foods such as nuts, seeds, and vegetable oils. Genetic variation may be associated with differences in how vitamin E is absorbed, transported, and used in the body.

Reference:

"Vitamin and Mineral Supplement Fact Sheets", National Institutes of Health, Office of Dietary Supplements.
<https://ods.od.nih.gov/factsheets/VitaminE-Consumer>

Results

Scientific Details

Gene:

CD36

Gene function:

Platelet glycoprotein 4.

Membrane transporter of fatty acids.

SNP:

rs1527479

Genotype and Outcome

Genotype:

C/C

Associated outcome:

No specific association with lower plasma vitamin E concentrations established for this genotype. ^[11]

Recommendation

The CD36 gene encodes a membrane protein involved in fatty-acid transport and nutrient-related uptake processes. Studies have explored whether rs1527479 is associated with differences in plasma vitamin E-related measures. Having two copies (homozygosity) of the rs1527479 C allele, corresponding to the C/C genotype, does not carry the T allele, and available evidence does not establish the same association with lower plasma vitamin E concentrations reported for T-allele carriers.^[11] This genetic result does not determine individual vitamin E status or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Choline

Choline is an essential nutrient involved in the structure of cell membranes and in the production of acetylcholine, a neurotransmitter that plays a role in memory, mood, muscle control, and other nervous system functions. Choline is found in foods such as eggs, meat, fish, dairy products, legumes, nuts, and seeds. The body can produce some choline in the liver, but dietary sources are also needed to meet physiological requirements. Genetic variation may be associated with differences in how choline is produced, metabolized, and used in the body.

Reference:

"Vitamin and Mineral Supplement Fact Sheets", National Institutes of Health, Office of Dietary Supplements.
<https://ods.od.nih.gov/factsheets/Choline-Consumer/>

Results

Scientific Details

Gene:

PEMT

Gene function:

Phosphatidylethanolamine N-methyltransferase.

Enzyme playing a crucial role in the biosynthesis of phosphatidylcholine, a critical component for membrane structure.

SNP:

rs7946

Genotype and Outcome

Genotype:

T/T

Associated outcome:

Possible reduced PEMT enzyme activity. ^{[12][13]}

Recommendation

The PEMT gene encodes phosphatidylethanolamine N-methyltransferase, an enzyme involved in the synthesis of phosphatidylcholine, an important component of cell membranes. Some studies have explored whether rs7946 is associated with differences in PEMT activity and choline-related metabolism. Having two copies (homozygosity) of the rs7946 T allele, corresponding to the T/T genotype, is associated with reduced PEMT enzyme activity and differences in choline and phosphatidylcholine metabolism.[\[12\]](#)[\[13\]](#) This genetic result does not determine individual choline status or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Mineral Metabolism

Mineral metabolism includes the biological processes involved in the absorption, transport, utilization, storage, and regulation of essential minerals in the body. This section presents information about selected genetic variants that have been studied in relation to biological pathways associated with mineral metabolism. Scientific literature suggests that genetic variation may be associated with differences in certain mineral-related processes among individuals.

This report is provided for educational and general wellness purposes only. It is not intended to diagnose, treat, cure, mitigate, or prevent any disease or medical condition. The reported genetic associations do not determine an individual's mineral status or indicate the presence of a mineral deficiency or excess and are not intended to diagnose or assess any disease or medical condition.

Reference:

"Mineral Metabolism." ScienceDirect Topics

<https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/mineral-metabolism>

Iron

Iron is an essential mineral that plays a key role in oxygen transport through hemoglobin and myoglobin and is also involved in the production of certain hormones and other normal biological processes. Iron is found in foods such as meat, seafood, legumes, and fortified grains. Genetic variation may be associated with differences in how iron is absorbed, transported, regulated, and stored in the body.

Reference:

"Vitamin and Mineral Supplement Fact Sheets", National Institutes of Health, Office of Dietary Supplements.

<https://ods.od.nih.gov/factsheets/Iron-Consumer>

Results

Scientific Details

Gene:

TMPRSS6

Gene function:

Transmembrane protease serine 6 or Matriptase-2.

Protein playing a critical role in the regulation of iron homeostasis in the body.

SNP:

rs855791

Genotype and Outcome

Genotype:

A/A

Associated outcome:

Associated with lower iron-related measures, particularly hemoglobin, serum iron and transferrin saturation. [\[14\]](#)[\[15\]](#)

Recommendation

The TMPRSS6 gene encodes matriptase-2, a protein involved in the regulation of iron homeostasis through pathways related to hepcidin. Some observational studies have explored whether rs855791 is associated with differences in iron-related measures. Having two copies (homozygosity) of the rs855791 A allele, corresponding to the A/A genotype, has been associated with lower hemoglobin, serum iron and transferrin saturation; lower ferritin concentrations have also been reported.[\[14\]](#)[\[15\]](#) This genetic result does not determine individual iron status or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Scientific Details

Gene:

TF

Gene function:

Transferrin.

Transferrin, the main iron transport protein in the blood.

SNP:

rs3811647

Genotype and Outcome

Genotype:

G/A

Associated outcome:

Possible somewhat higher transferrin levels and lower transferrin saturation. [\[16\]](#)[\[17\]](#)

Recommendation

The TF gene encodes transferrin, the main iron transport protein in the blood. Some observational and functional studies have explored whether rs3811647 is associated with differences in transferrin expression and iron-related measures. Having one copy (heterozygosity) of the rs3811647 A allele, corresponding to the G/A genotype, has been associated with higher transferrin levels and lower transferrin saturation compared with the G/G genotype.[\[16\]](#)[\[17\]](#) This genetic result does not determine individual iron status or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Carbohydrate Metabolism

Carbohydrate metabolism includes the biological processes involved in the digestion, breakdown, storage, and use of carbohydrates and sugars in the body. This section presents information about selected genetic variants that have been studied in relation to biological pathways associated with carbohydrate metabolism. Scientific literature suggests that genetic variation may be associated with differences in certain carbohydrate-related processes among individuals.

This report is provided for educational and general wellness purposes only. It is not intended to diagnose, treat, cure, mitigate, or prevent any disease or medical condition. The reported genetic associations do not determine an individual's glucose regulation, insulin response, body weight, or health outcomes and are not intended to diagnose or assess any metabolic disease or medical condition.

Reference:

"Carbohydrate Metabolism." ScienceDirect Topics, Elsevier, n.d.,
<https://www.sciencedirect.com/topics/medicine-and-dentistry/carbohydrate-metabolism>

Results

Scientific Details

Gene:

SLC30A8

Gene function:

Zinc transporter 8.

Protein playing a crucial role in the regulation of zinc homeostasis within insulin-secreting pancreatic cells.

SNP:

rs13266634

Genotype and Outcome

Genotype:

T/T

Associated outcome:

Possible association with relatively lower fasting glucose levels. [\[18\]](#)[\[19\]](#)

Recommendation

The SLC30A8 gene encodes zinc transporter 8, a protein expressed in pancreatic beta cells and involved in physiological processes related to insulin storage and secretion. Genetic association studies have explored whether rs13266634 is associated with fasting glucose levels. Having two copies (homozygosity) of the rs13266634 T allele, corresponding to the T/T genotype, may be associated with a relatively lower fasting-glucose-related profile compared with genotypes carrying the C allele, with an additive effect reported across genotypes.^{[18][19]} This genetic result does not determine an individual's glucose level or metabolic health. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Scientific Details

Gene:

ADIPOQ

Gene function:

Adiponectin.

Hormone produced mainly by adipose tissue that contributes to the regulation of glucose and lipid metabolism, insulin sensitivity, and energy balance.

SNP:

rs266729

Genotype and Outcome

Genotype:

C/C

Associated outcome:

No specific association with lower adiponectin levels established for this genotype. ^[20]

Recommendation

The ADIPOQ gene encodes adiponectin, a hormone involved in metabolic processes related to insulin sensitivity and glucose and lipid metabolism. Studies have explored whether rs266729 is associated with differences in circulating adiponectin levels. Having two copies (homozygosity) of the rs266729 C allele, corresponding to the C/C genotype, does not carry the G allele, and available evidence does not establish the same association with lower adiponectin levels reported for G-allele carriers.^[20] This genetic result does not determine individual metabolic health or body weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Lipid Metabolism

Lipid metabolism includes the biological processes involved in the absorption, transport, synthesis, storage, and breakdown of dietary fats and other lipid compounds in the body. These processes are influenced by genetic variation together with diet, physical activity, lifestyle, environmental, and other biological factors. This section presents information about selected genetic variants that have been studied in relation to biological pathways associated with lipid metabolism. Scientific literature suggests that genetic variation may be associated with differences in certain lipid-related processes among individuals.

This report is provided for educational and general wellness purposes only. It is not intended to diagnose, treat, cure, mitigate, or prevent any disease or medical condition. The reported genetic associations do not determine an individual's lipid status, blood lipid levels, or health outcomes and are not intended to diagnose or assess any metabolic, cardiovascular, or other medical condition.

Reference:

Chandel, Navdeep S. "Lipid Metabolism." Cold Spring Harbor Perspectives in Biology vol. 13,9 a040576. 2021. doi:10.1101/cshperspect.a040576

Results

Scientific Details

Gene:

FADS1

Gene function:

Fatty acid desaturase 1.

Enzyme involved in the desaturation of polyunsaturated fats.

SNP:

rs174547

Genotype and Outcome

Genotype:

T/T

Associated outcome:

Relatively higher long-chain polyunsaturated fatty acid biosynthetic capacity compared with C-allele carriers. [\[28-30\]](#)

Recommendation

The FADS1 gene encodes fatty acid desaturase 1, an enzyme involved in the conversion of essential fatty acids into long-chain polyunsaturated fatty acids. Some clinical studies have explored whether rs174547 is associated with differences in fatty acid conversion. Having two copies (homozygosity) of the rs174547 T allele, corresponding to the T/T genotype, has been associated with relatively higher long-chain PUFA biosynthetic capacity compared with T/C and C/C genotypes.[\[28-30\]](#) This genetic result does not determine individual fatty-acid status or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Scientific Details

Gene:

APOA5

Gene function:

Apolipoprotein A-V.

A component of circulating lipoproteins that plays a crucial role in lipid transport.

SNP:

rs662799

Genotype and Outcome

Genotype:

A/G

Associated outcome:

Possible moderately higher triglyceride levels and possible differences in triglyceride response to dietary interventions. [\[31-35\]](#)

Recommendation

The APOA5 gene encodes apolipoprotein A-V, a protein involved in the regulation of triglyceride metabolism. Some genetic and observational studies have explored whether rs662799 is associated with differences in triglyceride levels and dietary response. Having one copy (heterozygosity) of the rs662799 G allele, corresponding to the A/G genotype, has been associated with moderately higher triglyceride levels compared with A/A, with levels generally lower than those observed in G/G individuals.[\[31\]\[32\]](#) G-allele carriers have also shown differences in triglyceride response to dietary composition and hypocaloric Mediterranean dietary interventions.[\[33-35\]](#) This genetic result does not determine individual triglyceride levels or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Scientific Details

Gene:

LIPC

Gene function:

Hepatic lipase.

Enzyme breaking down triglycerides and phospholipids present in high-density lipoproteins (HDL).

SNP:

rs2070895

Genotype and Outcome

Genotype:

A/A

Associated outcome:

Associated with higher HDL-C levels. [\[36\]](#)

Recommendation

The LIPC gene encodes hepatic lipase, an enzyme involved in the metabolism and remodeling of circulating lipoproteins. Some observational studies have explored whether rs2070895 is associated with differences in HDL-C levels. Having two copies (homozygosity) of the rs2070895 A allele, corresponding to the A/A genotype, has been associated with higher fasting HDL-C levels, with a more pronounced association observed among vigorously physically active individuals in the population studied.[\[36\]](#) This genetic result does not determine individual lipid levels or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Scientific Details

Gene:

LPL

Gene function:

Lipoprotein lipase.

Enzyme playing a crucial role in the breakdown of triglycerides present in circulating lipoproteins.

SNP:

rs328

Genotype and Outcome

Genotype:

C/C

Associated outcome:

No specific association with lower triglyceride or higher HDL-C levels established for this genotype. [\[37\]](#)

Recommendation

The LPL gene encodes lipoprotein lipase, an enzyme involved in the breakdown of circulating triglycerides. Some observational studies have explored whether rs328 is associated with differences in triglyceride and HDL-C levels. Having two copies (homozygosity) of the rs328 C allele, corresponding to the C/C genotype, does not carry the G allele, and available evidence does not establish the same association with lower triglyceride levels and higher HDL-C levels reported for G-allele carriers.[\[37\]](#) This genetic result does not determine individual lipid levels or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Food Preferences

Food preferences are influenced by genetic variation together with sensory perception, lifestyle, cultural, environmental, and other individual factors. This section presents information about selected genetic variants that have been studied in relation to biological pathways and traits associated with taste perception, food preference, and responses to certain food components. Scientific literature suggests that genetic variation may be associated with differences in certain taste- and food-related characteristics among individuals.

This report is provided for educational and general wellness purposes only. It is not intended to diagnose, treat, cure, mitigate, or prevent any disease or medical condition. The reported genetic associations do not determine an individual's food preferences, dietary behavior, food tolerance, or health outcomes and are not intended to diagnose or assess any food intolerance, allergy, or other medical condition.

Reference:

Drewnowski, A. "Taste preferences and food intake." Annual Review of Nutrition vol. 17 (1997): 237-53.
doi:10.1146/annurev.nutr.17.1.237

Results

Scientific Details

Gene:

**MCM6/LCT
regulatory
region**

Gene function:

MCM6/LCT regulatory region.

Regulatory region within MCM6 that influences expression of the LCT gene and persistence of lactase activity into adulthood.

SNP:

rs4988235

Genotype and Outcome

Genotype:

A/G

Associated outcome:

Lactase persistence; possible intermediate physiological response to a lactose load. [38]

Recommendation

The rs4988235 variant is located in a regulatory region within MCM6 that influences expression of LCT, the gene encoding lactase. Genetic and lactose-load studies have explored whether rs4988235 is associated with lactase persistence and physiological response to lactose. Having one copy (heterozygosity) of the rs4988235 A allele, corresponding to the A/G genotype, is associated with lactase persistence. In one lactose-load study, heterozygous individuals showed higher breath hydrogen levels than homozygous lactase-persistent individuals, while differences in blood glucose and gastrointestinal symptoms were less clear.[\[38\]](#) This genetic result does not determine individual tolerance to lactose-containing foods. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Scientific Details

Gene:

ALDH2

Gene function:

Aldehyde dehydrogenase 2.

Mitochondrial enzyme involved in the breakdown of acetaldehyde produced during alcohol metabolism and other reactive aldehydes.

SNP:

rs671

Genotype and Outcome

Genotype:

A/G

Associated outcome:

Reduced ALDH2 activity and acetaldehyde metabolism; increased susceptibility to alcohol flushing. [\[39\]](#)[\[40\]](#)

Recommendation

The ALDH2 gene encodes aldehyde dehydrogenase 2, an enzyme involved in the metabolism of acetaldehyde produced during alcohol metabolism. Some studies have explored whether rs671 is associated with differences in ALDH2 activity and acetaldehyde metabolism. Having one copy (heterozygosity) of the rs671 A allele, corresponding to the A/G genotype, has been associated with reduced ALDH2 activity and impaired acetaldehyde metabolism, as well as increased susceptibility to an alcohol flushing response.[\[39\]](#)[\[40\]](#) This genetic result does not determine an individual's response to alcohol. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Scientific Details

Gene:

TAS2R38

Gene function:

Taste receptor type 2 member 38.

Receptor involved in the perception of a wide range of bitter compounds.

SNP:

rs10246939

Genotype and Outcome

Genotype:

C/C

Associated outcome:

Possible higher sensitivity to some bitter compounds. [\[41\]](#)

Recommendation

The TAS2R38 gene encodes a taste receptor involved in the detection of certain bitter compounds. Some studies have explored whether rs10246939 is associated with differences in bitter taste sensitivity. Having two copies (homozygosity) of the rs10246939 C allele, corresponding to the C/C genotype, has been associated with relatively higher sensitivity to some bitter compounds.[\[41\]](#) This genetic result does not determine individual food preferences or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Scientific Details

Gene:

TAS1R2

Gene function:

Taste receptor type 1 member 2.

Receptor involved in sweet taste perception and nutrient sensing.

SNP:

rs35874116

Genotype and Outcome

Genotype:

T/C

Associated outcome:

Possible intermediate sweet taste intensity and liking. [\[42\]](#)

Recommendation

The TAS1R2 gene encodes a receptor involved in sweet taste perception. Some observational studies have explored whether rs35874116 is associated with differences in sweet taste intensity and liking. Having one copy (heterozygosity) of the rs35874116 T allele, corresponding to the T/C genotype, has been associated with intermediate sweet taste intensity and liking compared with the two homozygous genotypes, although associations with rs35874116 have varied across studies and may be influenced by BMI.[\[42\]](#) This genetic result does not determine individual food preferences or dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Diet Response

Diet response–related biological processes include mechanisms associated with how the body responds to dietary intake, including pathways involved in nutrient metabolism, glucose and lipid metabolism, and energy balance. This section presents information about selected genetic variants that have been studied in relation to biological pathways associated with responses to dietary intake and dietary interventions. Scientific literature suggests that genetic variation may be associated with differences in certain diet-related characteristics and biological processes among individuals.

The information presented in this section is provided for educational and general wellness purposes and is intended to offer context about genetic variation and diet-related biological pathways. The reported genetic associations do not determine an individual's response to a particular diet, nutritional needs, body weight, metabolic status, or health outcomes and are not intended to diagnose or assess any disease or medical condition.

Reference:

Singar, Saiful, et al. "Personalized Nutrition: Tailoring Dietary Recommendations through Genetic Insights." *Nutrients*, vol. 16, no. 16, 2024, article 2673. doi:10.3390/nu16162673.

Results

Scientific Details

Gene:

PPARG

Gene function:

Peroxisome proliferator-activated receptor gamma.

Nuclear receptor and transcription factor involved in adipocyte differentiation, lipid storage and glucose metabolism.

SNP:

rs1801282

Genotype and Outcome

Genotype:

C/G

Associated outcome:

Possible differences in metabolic response to dietary fat composition.
[21-24]

Recommendation

The PPARG gene encodes peroxisome proliferator-activated receptor gamma, a nuclear receptor involved in lipid and glucose metabolism and insulin sensitivity. Some studies have explored whether rs1801282 is associated with differences in metabolic response to the amount and type of dietary fat consumed. Having one copy (heterozygosity) of the rs1801282 G allele, corresponding to the C/G genotype, has been associated with differences in insulin-, body-composition- and triglyceride-related responses depending on the amount and type of dietary fat consumed, including polyunsaturated, saturated, monounsaturated and n-3 fatty acids.[\[21-24\]](#) This genetic result does not determine individual metabolic response to dietary fat, body weight, or specific dietary requirements. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Scientific Details

Gene:

FTO

Gene function:

FTO alpha-ketoglutarate dependent dioxygenase.

Enzyme involved in RNA modification and cellular processes related to energy balance and metabolism.

SNP:

rs8050136

Genotype and Outcome

Genotype:

C/C

Associated outcome:

No specific association with dietary intake established for this genotype.
[\[25-27\]](#)

Recommendation

The FTO gene encodes a protein involved in RNA modification and processes related to energy balance and metabolism. Studies have explored whether rs8050136 is associated with differences in food and macronutrient intake. Having two copies (homozygosity) of the rs8050136 C allele, corresponding to the C/C genotype, does not carry the A allele associated with differences in energy intake and dietary macronutrient patterns in some studies.[\[25-27\]](#) This genetic result does not determine individual energy intake, food choices or body weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Scientific Glossary

Genetics uses specialized terminology. This glossary explains key terms used in your DNA Wellness Report in clear, accessible language. It is intended for educational purposes and is not exhaustive.

This report provides general wellness information and is not intended to diagnose, treat, cure, mitigate, or prevent any disease or medical condition. Genetic results represent only one of many factors that may influence wellness-related traits and should not be used to make medical decisions or as a substitute for professional medical advice. If you have questions about your health or the interpretation of genetic information, please consult a qualified healthcare professional.

Allele

An allele is one of the different versions of a DNA sequence found at a specific location in the genome. At most autosomal locations, an individual inherits one allele from each biological parent.

Chromosome

Chromosomes are structures made of DNA and proteins that organize and carry our genetic information. Humans typically have 23 pairs of chromosomes, for a total of 46.

DNA

DNA, or deoxyribonucleic acid, contains the genetic information used by our body to develop and function. It is made from four different nucleotides, represented by the letters A, C, G, and T.

Gene

A gene is a region of DNA containing information used to produce a functional product, such as a protein or functional RNA. Genes contribute to many biological processes, and their activity can also be influenced by regulatory DNA sequences and environmental factors.

Genome

The genome is the complete set of an individual's DNA, including genes as well as DNA sequences located outside genes.

Genetic Variant

A genetic variant is a difference in DNA sequence at a particular genomic location. Genetic variants can involve a single DNA base, a small insertion or deletion, or a larger segment of DNA. Most genetic variants are part of normal human genetic diversity.

Genotype

A genotype describes the allele or combination of alleles present at a particular genetic location. For example, at a variant with A and G alleles, possible diploid genotypes may include A/A, A/G, and G/G.

Heterozygous / Heterozygosity

Heterozygous means having two different alleles at a particular diploid genetic location. For example, an A/G genotype is heterozygous.

Homozygous / Homozygosity

Homozygous means having two identical alleles at a particular diploid genetic location. For example, A/A and G/G are homozygous genotypes.

Hemizygous / Hemizygosity

Hemizygous means having only one copy of a gene or genetic locus instead of the usual two copies found at most autosomal locations. This commonly occurs for genes located on the X chromosome in individuals who have only one X chromosome. In these cases, a single allele is present at that location rather than a pair of alleles.

Locus

A locus is a specific position or region in the genome where a gene or genetic variant is located.

Phenotype

A phenotype is an observable or measurable characteristic of an individual. Phenotypes can be influenced by genetic factors as well as diet, lifestyle, environment, age, and other biological factors.

Trait

A trait is a measurable or observable characteristic, such as height, nutrient-related measures, physical-performance characteristics, or sleep-related characteristics. Most wellness-related traits are influenced by multiple genetic and non-genetic factors.

Genetic Association

A genetic association is a statistical relationship observed between a genetic variant and a trait in a study population. An association does not necessarily mean that the genetic variant directly causes the trait, and associations may differ among populations or under different environmental conditions.

rsID

An rsID is a reference identifier beginning with "rs" assigned to a Reference SNP (RefSNP) record in the National Center for Biotechnology Information (NCBI) dbSNP database. For example, rs1801133 is an rsID.

SNP (Single-Nucleotide Polymorphism)

A SNP is a genetic variant involving a difference at a single DNA base position that occurs within a population. SNPs occur throughout the human genome. Many have no known functional effect, while others have been studied for possible associations with biological characteristics or traits.

Loss-of-Function Variant

A loss-of-function variant is a genetic variant that reduces or eliminates the expected function of a gene product. Its biological significance depends on the specific gene and variant, the number of copies present, and other genetic and environmental factors. A loss-of-function classification does not by itself indicate disease or disease risk.

Macronutrient

Macronutrients are nutrients used by the body in relatively large amounts. The primary macronutrients are carbohydrates, fats, and proteins, which provide energy and/or structural components needed for normal biological functions.

Micronutrient

Micronutrients are nutrients required by the body in relatively small amounts. They primarily include vitamins and minerals and contribute to many normal physiological processes.

Dietary Supplement

A dietary supplement is a product intended to supplement the diet and containing one or more dietary ingredients, such as vitamins, minerals, herbs or other botanicals, amino acids, or other dietary substances.

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Disclaimers

This DNA Wellness Report is intended only for general wellness, educational, and informational purposes. It provides information about selected genetic variants that may be associated with non-diagnostic wellness traits, such as general nutrition, fitness, lifestyle, and other wellness-related characteristics, based on scientific literature and internal interpretation methods available at the time the report is prepared.

This DNA Wellness Test and the wellness interpretations contained in this report have not been reviewed, cleared, approved, or authorized by the U.S. Food and Drug Administration (FDA). This report is not intended to diagnose, treat, cure, mitigate, or prevent any disease or medical condition, and it should not be used as a substitute for professional medical advice, diagnosis, treatment, screening, or care.

This report does not provide medical genetic testing, clinical diagnosis, disease-risk assessment, carrier-status testing, pharmacogenetic or medication-response guidance, ancestry analysis, paternity or family-relationship testing, or interpretation of medically actionable variants. Do not use this report as the sole basis for starting, stopping, or changing any medication, medical treatment, supplement program, diet, or exercise program. Consult a qualified healthcare professional before making medical decisions based on genetic information.

The test analyzes selected genetic variants only. It does not analyze all variants in any gene and does not evaluate the entire genome. It therefore may not identify all genetic factors that could be relevant to a wellness trait. Wellness-related traits are influenced by many factors, including genetics, diet, physical activity, sleep, environment, age, sex, health history, and other individual circumstances. A reported genetic association does not guarantee a particular trait, outcome, benefit, or response.

Scientific understanding of genetics continues to evolve. The interpretation of a genetic variant may change as new research becomes available, and different studies, databases, laboratories, or interpretation methods may report or explain genetic associations differently.

If this report includes questionnaire-based or self-reported information, those results depend on the accuracy and completeness of the information provided by the user. Questionnaire-based results are not independently verified and are processed using internal analytical methods informed by published references.

If laboratory analysis is performed by a CLIA-certified and/or CAP-accredited laboratory, that certification or accreditation relates to laboratory quality standards and laboratory operations. It does not mean that the FDA has reviewed, cleared, approved, or authorized this DNA Wellness Report, the wellness interpretations contained in this report, or any related recommendations.

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