MAGISNAT®

DNA Wellness Report:

Weight Management Insights

For:

Alex Morgan

KIT ID: SAMPLE-DNA-0001

Report type: Wellness

Genetic variations: 41 SNPs

Date: 2026-09-24

Dear Alex Morgan

Thank you for choosing our genetic analysis service.

We are pleased to provide you with personalized information based on your genetic data. This report is designed to offer educational insights into selected genetic variants and their associations described in scientific literature.

Our goal is to present your results in a clear and informative format to support a better understanding of certain genetic characteristics related to general wellness. This information is intended for educational purposes only and is not intended to diagnose, treat, cure, or prevent any disease.

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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GENETICS is important

DNA Wellness Report: Weight Management Insights

Weight management–related pathways include biological processes influenced by both lifestyle factors and genetic variation. This DNA report analyzes **41 selected genetic variants (SNPs)** that have been studied in relation to biological pathways associated with nutrient metabolism, energy balance, fat distribution, diet response, and body composition–related traits. Scientific literature suggests that genetic variation may be associated with differences in certain weight-related and body composition–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 weight-related biological pathways. **This report is not intended to diagnose, treat, cure, or prevent any disease.**

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Understanding the report

How to read your genetic results

This report presents information about selected genetic variants identified through the analysis of specific genes and their variations, known as single nucleotide polymorphisms (SNPs).

Each result is displayed in a dedicated section that includes the gene name, a description of its biological role, the specific SNP analyzed, and the genotype identified (alleles).

The information provided in this report is based on findings from published scientific research describing associations between certain genetic variants and biological processes.

The content of this report is provided for educational and informational purposes only and is not intended to diagnose, treat, cure, or prevent any disease.

Report summary

Diet Response Insights

BMI-related traits

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Fat Distribution Insights

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Genetic Data Results

Diet Response Insights

Diet response–related pathways include biological processes associated with fat metabolism, carbohydrate metabolism, and other diet-related traits. This section presents information about selected genetic variants that have been studied in relation to biological pathways associated with diet response. Scientific literature suggests that genetic variation may be associated with differences in certain diet-related processes among individuals. The information 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.

Reference:

Singar, Saiful et al. "Personalized Nutrition: Tailoring Dietary Recommendations through Genetic Insights." Nutrients vol. 16,16 2673. 13 Aug.2024, doi:10.3390/nu16162673

Your results

Gene:	SNP:	Alleles:
MTHFR	**rs1801133**	**G/A**

Methylenetetrahydrofolate reductase.

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

Possible moderately reduced MTHFR activity. [1-3]

The MTHFR gene encodes methylenetetrahydrofolate reductase, an enzyme involved in folate metabolism. Functional and dietary-intervention studies have explored whether rs1801133 is associated with differences in MTHFR activity and folate-related response.[1-3] Having one copy (heterozygosity) of the A allele, corresponding to the G/A genotype, is associated with moderately reduced MTHFR activity compared with the G/G genotype.[1][2] In an 18-month dietary intervention, individuals with the G/G and G/A genotypes, considered together, showed greater increases in serum folate following a green-Mediterranean dietary intervention than individuals with the A/A genotype.[3] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
MTHFR	**rs1801131**	**T/G**

Methylenetetrahydrofolate reductase.

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

Possible modest reduction in MTHFR enzyme activity. [4-6]

The MTHFR gene encodes methylenetetrahydrofolate reductase, an enzyme involved in folate metabolism. Genetic and functional studies have explored whether rs1801131 is associated with differences in MTHFR activity and folate-related measures.[4-6] Having one copy (heterozygosity) of the G allele, corresponding to the T/G genotype, is associated with a possible modest reduction in MTHFR activity compared with the T/T genotype.[4-6] However, this variant alone has not been consistently associated with lower circulating folate or higher homocysteine levels.[4][6] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
FUT2	**rs602662**	**G/G**

Fucosyltransferase 2.

Enzyme that adds fucose to glycans on mucosal surfaces and contributes to secretor status.

Possible lower circulating vitamin B12 levels. [7][8]

The FUT2 gene encodes fucosyltransferase 2, an enzyme involved in glycan fucosylation and secretor status. Genetic association studies have explored whether rs602662 is associated with circulating vitamin B12 levels.[7][8] Having two copies (homozygosity) of the G allele, corresponding to the G/G genotype, is included within the G-allele-associated profile linked to relatively lower circulating vitamin B12 levels compared with the A/A genotype; however, available evidence does not establish a stronger effect for G/G compared with G/A.[7][8] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
GC	**rs2282679**	**G/G**

Vitamin D-binding protein.

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

Possible lower circulating 25-hydroxyvitamin D levels. [9][10]

The GC gene encodes vitamin D-binding protein, which binds and transports vitamin D and its metabolites in the bloodstream. Genome-wide genetic association studies have explored whether rs2282679 is associated with circulating 25-hydroxyvitamin D [25(OH)D] levels.[9][10] Having two copies (homozygosity) of the G allele, corresponding to the G/G genotype, is associated with relatively lower circulating 25(OH)D levels compared with the T/T genotype.[9][10] This genetic result does not determine individual vitamin D levels, body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
TMPRSS6	**rs855791**	**A/A**

Transmembrane protease serine 6 or Matriptase-2.

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

Possible lower iron-related measures and reduced iron absorption. [11-13]

The TMPRSS6 gene encodes transmembrane serine protease 6, also known as matriptase-2, a protein involved in the regulation of hepcidin and iron absorption. Genetic, functional, and oral iron-absorption studies have explored whether rs855791 is associated with differences in iron-related measures.[11-13] Having two copies (homozygosity) of the A allele, corresponding to the A/A genotype, is associated with relatively lower iron-related measures compared with the G/G genotype.[11-13] In a study measuring oral iron absorption, the A/A genotype,was associated with lower serum iron and transferrin saturation and, after accounting for iron status, with reduced fractional iron absorption compared with the G/G genotype.[13] This genetic result does not determine individual iron status, body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
ADIPOQ	**rs266729**	**C/C**

Adiponectin.

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

Possible more favorable improvements in adiponectin and insulin-related metabolic measures following a hypocaloric dietary intervention. [14-16]

The ADIPOQ gene encodes adiponectin, a hormone produced by adipose tissue that is involved in insulin sensitivity and metabolic regulation.[14][15] A hypocaloric Mediterranean-type dietary intervention study explored whether rs266729 is associated with differences in adiponectin and insulin-related metabolic response.[16] Having two copies (homozygosity) of the C allele, corresponding to the C/C genotype, was associated with more favorable improvements in adiponectin, insulin and insulin-resistance-related measures compared with genotypes carrying the G allele.[16] Reductions in body weight and other adiposity measures occurred in both genotype,groups.[16] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
LEP	**rs7799039**	**G/G**

Leptin.

The LEP gene encodes leptin, a hormone produced mainly by adipose tissue that helps regulate appetite, energy balance, and body weight.

Possible relatively lower insulin and insulin-resistance-related measures. [17]

The LEP gene encodes leptin, a hormone produced mainly by adipose tissue that helps regulate appetite and energy balance. A meta-analysis of multiple human studies explored whether rs7799039 is associated with circulating leptin and insulin-related measures.[17] Having two copies (homozygosity) of the G allele, corresponding to the G/G genotype, was associated with relatively lower insulin and insulin-resistance-related measures compared with carriers of the A allele, and differences in circulating leptin levels were also reported between genotype,groups.[17] This genetic result does not determine individual appetite, body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
UCP3	**rs1800849**	**A/A**

Uncoupling Protein 3.

Protein present in mitochondria and involved in energy balance.

Possible less favorable weight-loss and metabolic response to hypocaloric dietary interventions. [18]

The UCP3 gene encodes uncoupling protein 3, a mitochondrial protein expressed mainly in skeletal muscle and involved in energy metabolism. A hypocaloric dietary-intervention study explored whether rs1800849 is associated with differences in weight-loss and metabolic response.[18] Having two copies (homozygosity) of the A allele, corresponding to the A/A genotype, is included within the A-allele-carrier group that showed less weight improvement and less favorable changes in selected metabolic measures compared with G/G; however, the study does not establish a stronger effect for A/A compared with A/G.[18] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
PPARG	**rs1801282**	**C/G**

Peroxisome proliferator-activated receptor gamma.

Receptor that regulates fatty acid deposition and glucose metabolism.

Possible less favorable weight-loss and metabolic response to a hypocaloric dietary intervention. [19-21]

The PPARG gene encodes peroxisome proliferator-activated receptor gamma, a protein involved in adipocyte function, lipid metabolism, and glucose-related processes.[20-21] A hypocaloric dietary-intervention study explored whether rs1801282 is associated with differences in weight-loss and metabolic response.[19] Having one copy (heterozygosity) of the G allele, corresponding to the C/G genotype, is included within the G-allele-carrier group that showed less favorable reductions in body weight, fat mass, waist circumference and selected metabolic measures compared with C/C.[19-21] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
FTO	**rs1558902**	**A/A**

FTO alpha-ketoglutarate dependent dioxygenase.

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

Possible greater weight loss and reductions in several body-fat measures in response to a high-protein diet. [22]

The FTO gene encodes an enzyme involved in RNA modification and cellular processes related to energy balance and metabolism. A dietary-intervention study explored whether rs1558902 is associated with differences in response to weight-loss diets.[22] Having two copies (homozygosity) of the A allele, corresponding to the A/A genotype, was associated with greater weight loss and greater reductions in several body-fat measures among individuals following a high-protein weight-loss diet.[22] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
APOA2	**rs5082**	**G/A**

Apolipoprotein A-II.

Component of blood lipoproteins that plays a crucial role in lipid transport in the body.

No specific saturated-fat-related BMI association established for this genotype. [23-25]

The APOA2 gene encodes apolipoprotein A-II, a protein involved in lipid transport and metabolism. Observational studies across several populations have explored whether rs5082 interacts with saturated-fat intake in relation to BMI and body-weight-related measures.[23-25] Having one copy (heterozygosity) of the G allele, corresponding to the G/A genotype,does not have the G/G genotype, in which the higher-BMI association under relatively high saturated-fat intake was primarily observed, and available evidence does not establish the same saturated-fat-related BMI association for G/A.[23-25] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
APOA5	**rs662799**	**A/G**

Apolipoprotein A-V.

Component of blood lipoproteins that plays a crucial role in lipid transport in the body.

Possible intermediate fasting triglyceride levels. [26-28]

The APOA5 gene encodes apolipoprotein A-V, a protein involved in the regulation of triglyceride metabolism. Genetic association studies have explored whether rs662799 is associated with fasting triglyceride levels.[26-28] Having one copy (heterozygosity) of the G allele, corresponding to the A/G genotype, is associated with triglyceride levels that are generally intermediate between those observed in G/G and A/A individuals.[26][28] This genetic result does not determine individual triglyceride levels, body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
PPARGC1A	**rs8192678**	**T/T**

Peroxisome proliferator-activated receptor gamma coactivator 1 alpha.

Transcriptional coactivator regulating the expression of genes involved in energy metabolism, mitochondrial biogenesis, and adaptive thermogenesis.

Possible differences in metabolic response to energy-restricted dietary interventions. [31][32]

The PPARGC1A gene encodes a transcriptional coactivator involved in energy metabolism, mitochondrial function and adaptive thermogenesis. Dietary-intervention studies have explored whether rs8192678 is associated with metabolic response to energy-restricted diets.[31][32] Having two copies (homozygosity) of the T allele, corresponding to the T/T genotype, is included within the T-allele profile associated with greater reductions in total and LDL cholesterol than C/C during a low-fat energy-restricted diet, and T/T individuals also showed improvement in insulin and insulin-resistance-related measures in a separate low-calorie intervention.[31][32] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
GHSR	**rs490683**	**C/C**

Growth hormone secretagogue receptor.

Receptor that binds ghrelin, a hormone involved in the regulation of appetite, hunger, and growth hormone release.

Possible differences in weight-loss response during lifestyle and hypocaloric dietary interventions. [33][34]

The GHSR gene encodes the growth hormone secretagogue receptor, which mediates ghrelin signaling involved in appetite and energy balance. Lifestyle and hypocaloric dietary-intervention studies have explored whether rs490683 is associated with differences in weight-loss and metabolic response.[33][34] Having two copies (homozygosity) of the C allele, corresponding to the C/C genotype, was associated with a more favorable weight-loss response than G-allele carriers and, in a recent hypocaloric intervention, with greater improvements in fat mass, waist circumference and selected glucose- and lipid-related metabolic measures.[33][34] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
ADIPOQ	**rs17300539**	**A/A**

Adiponectin.

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

Possible association with an A-allele-related adiponectin and metabolic profile; an A/A-specific weight-loss response has not been established. [35-37]

The ADIPOQ gene encodes adiponectin, a hormone produced by adipose tissue that contributes to insulin sensitivity and glucose and lipid metabolism. Observational and lifestyle-intervention studies have explored whether rs17300539 is associated with adiponectin-related metabolic traits and weight-loss response.[35-37] Having two copies (homozygosity) of the A allele, corresponding to the A/A genotype, is included within the A-allele profile associated with higher adiponectin levels and differences in metabolic and body-weight-related measures.[35][36] In one hypocaloric diet and physical exercise intervention, a higher mean weight reduction was observed among only two A/A participants, so an A/A-specific association with weight-loss response has not been established.[37] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
ADIPOQ	**rs3774261**	**G/G**

Adiponectin.

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

Possible differences in metabolic response during hypocaloric Mediterranean-pattern dietary interventions. [38][39]

The ADIPOQ gene encodes adiponectin, a hormone produced by adipose tissue that contributes to insulin sensitivity and glucose and lipid metabolism. Hypocaloric Mediterranean-pattern dietary-intervention studies have explored whether rs3774261 is associated with metabolic response.[38][39] Having two copies (homozygosity) of the G allele, corresponding to the G/G genotype, is included within the G-allele-carrier group that showed less pronounced improvements in adiponectin, lipid profile, and CRP compared with A/A; however, available evidence does not establish a progressively less favorable response for G/G compared with A/G, and weight loss itself was similar across genotype,groups.[38][39] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Carbohydrate Metabolism

Gene:	SNP:	Alleles:
AMY1-AMY2	**rs11185098**	**G/G**

Alpha-Amylase.

Proteins involved in the first steps of digestion of carbohydrates in saliva.

No specific A-allele-associated weight-loss advantage established for this genotype. [61]

The AMY1-AMY2 gene region includes genes involved in starch digestion. A 2-year calorie-restricted dietary-intervention study explored whether rs11185098 is associated with differences in weight-management response.[61] Having two copies (homozygosity) of the G allele, corresponding to the G/G genotype,does not carry the A allele associated with greater reductions in body weight and waist circumference, and no specific A-allele-associated weight-loss advantage was established for this genotype.[61] This genetic result does not does not determine an individual's response, which is influenced by multiple genetic, dietary, lifestyle, and environmental factors. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Your notes

BMI-related traits

Diet Response

Your results

Gene:	SNP:	Alleles:
TFAP2B	**rs987237**	**A/A**

Transcription factor AP-2 beta.

Transcription factor regulating genes that control cell growth, differentiation, and apoptosis (programmed cell death).

Possible more favorable weight-maintenance response to a high-protein diet. [15][29]

The TFAP2B gene encodes transcription factor AP-2 beta, a protein involved in the regulation of gene expression and pathways related to adipocyte function and energy balance.[15] A dietary-intervention trial explored whether rs987237 is associated with weight maintenance after initial weight loss.[29] Having two copies (homozygosity) of the A allele, corresponding to the A/A genotype, was associated with more favorable weight maintenance when following a high-protein diet, whereas this benefit was not established in individuals carrying the G allele.[29] This genetic result does not determine individual body weight or the ability to maintain weight loss. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
TFAP2B	**rs2272903**	**G/A**

Transcription factor AP-2 beta.

Transcription factor regulating genes that control cell growth, differentiation, and apoptosis (programmed cell death).

Possible modest genetic tendency toward higher BMI. [30]

The TFAP2B gene encodes transcription factor AP-2 beta, a protein involved in the regulation of gene expression and pathways related to adipocyte function and energy balance. A large genetic association study explored whether rs2272903 is associated with BMI and reported a small increase in BMI for each copy of the G allele.[30] Having one copy (heterozygosity) of the G allele, corresponding to the G/A genotype, is consistent with carrying one copy of the BMI-associated allele and a possible modest BMI-related genetic tendency for this variant.[30] This genetic result does not determine individual body weight or the ability to maintain weight loss. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Fat Distribution Insights

Fat distribution–related pathways include biological processes associated with body fat distribution and body composition. This section presents information about selected genetic variants that have been studied in relation to biological pathways associated with fat distribution. Scientific literature suggests that genetic variation may be associated with differences in certain body composition–related processes among individuals. The information in this section is provided for educational and general wellness purposes and is intended to offer context about genetic variation and fat distribution–related biological pathways.

Reference:

Agrawal, Saaket, et al. "Inherited Basis of Visceral, Abdominal Subcutaneous and Gluteofemoral Fat Depots." Nature Communications, vol. 13, article no. 3771, 30 June 2022, https://doi.org/10.1038/s41467-022-30931

Your results

Gene:	SNP:	Alleles:
MAP2K5	**rs2241423**	**A/G**

Mitogen-activated protein kinase kinase 5.

Enzyme involved in the response of the cell to external stimuli.

Possible small BMI-associated genetic tendency for this variant. [40][41]

The MAP2K5 gene encodes a kinase involved in intracellular signaling pathways that contribute to the regulation of cellular responses to external signals. Large genetic association studies have explored whether rs2241423 is associated with BMI and identified the G allele as being associated with slightly higher BMI, with an additive or per-allele pattern across genotypes.[40][41] Having one copy (heterozygosity) of the G allele, corresponding to the A/G genotype,is consistent with a possible modest BMI-related genetic tendency for this variant.[40][41] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
MAP2K5	**rs997295**	**G/T**

Mitogen-activated protein kinase kinase 5.

Enzyme involved in the response of the cell to external stimuli.

Possible modest genetic tendency toward higher BMI. [30][42]

The MAP2K5 gene encodes a kinase involved in intracellular signaling pathways that contribute to cellular responses and processes related to energy balance. Large genetic association studies have explored whether rs997295 is associated with BMI and identified the T allele as being associated with slightly higher BMI, with an additive or per-allele pattern across genotypes.[30] Having one copy (heterozygosity) of the T allele, corresponding to the G/T genotype,is consistent with a possible modest BMI-related genetic tendency for this variant.[30] Additional research suggests that the association of rs997295 may become more pronounced at higher levels of BMI.[42] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
FTO	**rs8050136**	**C/C**

FTO alpha-ketoglutarate dependent dioxygenase.

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

Possible relatively lower BMI and body-fat-related genetic tendency. [43][44]

The FTO gene encodes an enzyme involved in RNA modification and cellular processes related to energy balance and metabolism. Genetic association studies have explored whether rs8050136 is associated with BMI and body-fat-related measures and identified the A allele as the higher-BMI-associated allele.[43][44] Having two copies (homozygosity) of the C allele, corresponding to the C/C genotype,does not carry the BMI-associated A allele and is consistent with a possible relatively lower BMI- and body-fat-related genetic tendency for this variant.[43][44] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
FTO	**rs3751812**	**T/T**

FTO alpha-ketoglutarate dependent dioxygenase.

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

Possible greater genetic tendency toward higher BMI. [45][46]

The FTO gene encodes an enzyme involved in RNA modification and cellular processes related to energy balance and metabolism. Large genetic association studies have explored whether rs3751812 is associated with BMI and identified the T allele as being associated with slightly higher BMI, with an additive or per-allele pattern across genotypes.[45][46] Having two copies (homozygosity) of the T allele, corresponding to the T/T genotype,is consistent with a possible greater BMI-related genetic tendency for this variant.[45][46] Physical activity has been reported to attenuate the BMI-related association of this variant.[46] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
ADIPOQ	**rs182052**	**A/A**

Adiponectin.

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

Possible waist-circumference-associated difference for this variant. [47]

The ADIPOQ gene encodes adiponectin, a hormone produced by adipose tissue that contributes to insulin sensitivity and glucose and lipid metabolism. An observational study explored whether rs182052 is associated with body-size measures and reported progressively higher waist circumference, body weight, and BMI with increasing numbers of the A allele.[47] Having two copies (homozygosity) of the A allele, corresponding to the A/A genotype,is associated with the higher waist-circumference, body-weight, and BMI profile reported with increasing numbers of the A allele.[47] This genetic result does not determine individual body weight or fat distribution. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
Intergenic (near TFAP2B)	**rs734597**	**G/G**

Intergenic region near TFAP2B.

Intergenic region near TFAP2B; rs734597 has been associated with BMI, but a direct functional effect has not been established.

Possible relatively lower BMI-related genetic tendency. [40][48]

The rs734597 variant is located in an intergenic region near TFAP2B, a genomic region that has been associated with BMI in large genetic studies.[40][48] Large genetic association studies have explored whether this region is associated with BMI and identified the rs734597 A allele as the BMI-increasing allele.[40][48] Having two copies (homozygosity) of the G allele, corresponding to the G/G genotype,does not carry the BMI-increasing A allele and is consistent with a possible relatively lower BMI-related genetic tendency for this variant.[48] A direct functional effect of rs734597 has not been established. This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
FTO	**rs62033400**	**G/G**

FTO alpha-ketoglutarate dependent dioxygenase.

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

Possible greater genetic tendency toward higher BMI. [49][50]

The FTO gene encodes an enzyme involved in RNA modification and cellular processes related to energy balance and metabolism. Large genetic association studies have explored whether rs62033400 is associated with BMI and identified the G allele as being associated with slightly higher BMI, with an additive or per-allele pattern across genotypes.[49][50] Having two copies (homozygosity) of the G allele, corresponding to the G/G genotype,is consistent with a possible greater BMI-related genetic tendency for this variant.[49][50] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
FTO	**rs17817449**	**T/G**

FTO alpha-ketoglutarate dependent dioxygenase.

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

Possible modest genetic tendency toward higher BMI. [51][52]

The FTO gene encodes an enzyme involved in RNA modification and cellular processes related to energy balance and metabolism. Large genetic association studies have explored whether rs17817449 is associated with BMI and identified the G allele as being associated with slightly higher BMI, with an additive or per-allele pattern across genotypes.[51][52] Having one copy (heterozygosity) of the G allele, corresponding to the T/G genotype,is consistent with a possible modest BMI-related genetic tendency for this variant.[51][52] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
FTO	**rs9936385**	**T/C**

FTO alpha-ketoglutarate dependent dioxygenase.

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

Possible modestly lower lean-mass-related measures. [53][54]

The FTO gene encodes an enzyme involved in RNA modification and cellular processes related to energy balance and metabolism. Large genetic and smaller population studies have explored whether rs9936385 is associated with lean-mass and skeletal-muscle-related measures.[53][54] Having one copy (heterozygosity) of the T allele, corresponding to the T/C genotype,is consistent with a possible modestly lower lean-mass-related profile based on a per-allele association, although the smaller study identified the clearer lower-limb skeletal-muscle association in women with T/T.[53][54] This genetic result does not determine individual muscle mass, body composition or body weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
FTO	**rs7202116**	**A/A**

FTO alpha-ketoglutarate dependent dioxygenase.

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

Possible relatively lower BMI-related genetic tendency. [40][55]

The FTO gene encodes an enzyme involved in RNA modification and cellular processes related to energy balance and metabolism. Large genetic association studies at the FTO locus have explored whether rs7202116 is associated with BMI and identified the G allele as being associated with slightly higher BMI, with an additive or per-allele pattern across genotypes.[40][55] Having two copies (homozygosity) of the A allele, corresponding to the A/A genotype,does not carry the BMI-associated G allele and is consistent with a possible relatively lower BMI-related genetic tendency for this variant.[40][55] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
FTO	**rs9930506**	**A/A**

FTO alpha-ketoglutarate dependent dioxygenase.

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

Possible relatively lower BMI-, body-weight-, and hip-circumference-related genetic tendency. [45][56]

The FTO gene encodes an enzyme involved in RNA modification and cellular processes related to energy balance and metabolism. Genetic association studies have explored whether rs9930506 is associated with body-size measures and identified the G allele as being associated with higher BMI, body weight, and hip circumference in an additive pattern.[45][56] Having two copies (homozygosity) of the A allele, corresponding to the A/A genotype,does not carry the G allele associated with higher BMI, body weight, and hip circumference and is consistent with a possible relatively lower body-size-related genetic tendency for this variant.[45][56] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
FTO	**rs12149832**	**A/A**

FTO alpha-ketoglutarate dependent dioxygenase.

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

Possible greater genetic tendency toward higher BMI. [57][58]

The FTO gene encodes an enzyme involved in RNA modification and cellular processes related to energy balance and metabolism. Large genetic association studies have explored whether rs12149832 is associated with BMI and identified the A allele as being associated with slightly higher BMI, with an additive or per-allele pattern across genotypes.[57][58] Having two copies (homozygosity) of the A allele, corresponding to the A/A genotype,is consistent with a possible greater BMI-related genetic tendency for this variant.[57][58] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Gene:	SNP:	Alleles:
FTO	**rs1121980**	**G/G**

FTO alpha-ketoglutarate dependent dioxygenase.

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

Possible relatively lower BMI- and waist-circumference-related genetic tendency. [45][59][60]

The FTO gene encodes an enzyme involved in RNA modification and cellular processes related to energy balance and metabolism. Genetic association studies have explored whether rs1121980 is associated with BMI and waist circumference and identified the A allele used in this report as the higher-BMI-associated allele.[45][59][60] Having two copies (homozygosity) of the G allele, corresponding to the G/G genotype,does not carry the A allele associated with higher BMI and waist circumference and is consistent with a possible relatively lower BMI- and waist-related genetic tendency for this variant.[45][59][60] Physical activity has been reported to attenuate the BMI- and waist-related association of this variant.[60] This genetic result does not determine individual body weight or the ability to lose weight. A qualified healthcare professional can help assess whether your overall diet and lifestyle are appropriate for your individual needs.

Your notes

Scientific Glossary

When discussing genetics, it's often necessary to use many technical terms, and there's no way to avoid it if we want to maintain accuracy in explanations. That's why we have compiled a scientific glossary - to enable everyone to understand without getting overwhelmed.

Anyway, it is important to emphasize that our scientific glossary does not aim to be exhaustive and is not intended to replace the advice provided by your healthcare provider. Professional medical support is essential for a proper interpretation of genetic data and for developing a personalized health and wellness plan.

Allele

An allele is one of the different forms of a specific gene. The differences among alleles arise from small changes in the DNA sequence and can lead to changes in the characteristic controlled by the gene itself.

Chromosome

An allele is one of the different forms of a specific gene. The differences among alleles arise from small changes in the DNA sequence and can lead to changes in the characteristic controlled by the gene itself.

Dietary supplement

A dietary supplement is a product that contains one or more dietary ingredients, such as vitamins, minerals, herbs, amino acids, enzymes, or other substances, intended to supplement the diet. These supplements are available in various forms, including pills, capsules, tablets, powders, or liquids.

DNA

DNA stands for Deoxyribonucleic Acid. It is the macromolecule containing the information to build the organism. It is made up of 4 different nucleotides (Adenine, Cytosine, Guanine and Thymine). The human DNA have 3 billion nucleotide basepairs.

Gene

A gene is a segment of a chromosome that occupies a given locus on it and codes for a protein, each one with a specific function: some build the structure of our cells, some respond to signaling molecules, some catalyze reactions (these are called enzymes), and so on.

Genetic Variant

A genetic variant is a change or alteration in the DNA sequence of a gene. The main genetic variant types include base substitutions, deletions, or insertions.

Genomics

Genomics is a field of biology that focuses on the study of an organism's entire genome, which is the complete set of its genetic material. It involves the comprehensive analysis of genes, their functions, interactions, and variations within and between populations.

Genotype

The genotype is the genetic makeup of an organism, then the combination of alleles presents in an individual's DNA at a particular locus on a chromosome. The genotype represents the specific genetic information that an organism inherits from its parents.

Heterozygosity

Heterozygosity refers to having two different alleles at a specific genetic locus. If an individual has one copy of the "A" allele and one copy of the "B" allele for a certain gene (AB genotype), they are said to be heterozygous for that gene.

Homozygosity

Homozygosity refers to having two identical alleles at a specific genetic locus. If an individual has two copies of the "A" allele for a certain gene (AA genotype), they are said to be homozygous for that gene.

Macronutrient

Macronutrients are essential nutrients that are required by the body in large quantities to maintain proper functioning, growth, and overall health. These nutrients provide the necessary energy and building blocks needed for various physiological processes. The three primary macronutrients are: carbohydrates, lipids (fat), and proteins.

Micronutrient

Micronutrients are essential nutrients required by the body in smaller quantities but are equally important for maintaining overall health and supporting various physiological functions. Micronutrients include two main groups: vitamins and minerals.

Nutritional deficiency

Nutritional deficiency, also known as malnutrition, refers to a condition in which the body does not receive enough macronutrients or micronutrients, which are needed to support proper growth, development, and overall wellness.

Phenotype

The phenotype is any observable trait arising from a complex interplay between a given genotype and environmental factors. Examples of phenotypes are height, eye color and blood type.

rsID number

rsID numbers are identifiers used by researchers to name different SNPs.

SNPs (Single Nucleotide Polymorphism)

A SNP, or single nucleotide polymorphism, is a genetic variant in one of the nucleotide bases composing DNA and found in more than 1% of the population.

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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 test and report have not been reviewed, cleared, approved, or authorized by the U.S. Food and Drug Administration, unless expressly
stated otherwise in writing. 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 to start, stop, or change any medication, medical treatment, supplement program, diet, or exercise program without
consulting a qualified healthcare professional.

The test analyzes selected genetic variants only. It does not analyze all variants in any gene, does not evaluate the entire genome, and may
not detect genetic factors that are relevant to a trait or condition. Wellness traits are influenced by many factors, including genetics, diet,
physical activity, sleep, environment, age, sex, health history, and other personal circumstances. A 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 over time as new research
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While reasonable efforts are made to provide accurate and current information, no test, analysis, database, or interpretation is error-free.

If this report includes questionnaire- based or self- reported information, those results depend on the accuracy and completeness of the
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