ULTAGENOMICS

DECODE YOUR DNA. GUIDE YOUR HEALTH.

Allergic Reactivity and Histamine

GENETICS REPORT

1	6	73
Report	Report Panels	Gene Variants

Example Client
Prepared for

September 19, 2026
Report Date

Our genetic test provides insights into how your unique genetic profile influences health areas. By understanding these genetic tendencies, you and your healthcare provider can make more informed lifestyle and wellness choices to support long-term health goals.

THESE GENE RESULTS MIGHT TELL YOU

- ✓ How your body may respond to certain nutrients
- ✓ Dietary patterns and environmental factors
- ✓ Potential predispositions in detoxification, metabolism, and physical performance
- ✓ Why some wellness strategies may work differently for you

THESE GENE RESULTS WILL NOT TELL YOU

- ✕ Any medical diagnoses
- ✕ Cancer diagnoses or clinical cancer risk assessments
- ✕ Predictions about future health conditions
- ✕ How lifestyle factors outside of genetics impact health outcomes

This report is intended for informational purposes only and does not constitute medical advice. Results reflect genetic predispositions, not guarantees of health outcomes. Always consult a qualified healthcare practitioner before making changes to your health regimen.

A typical or decreased result does not mean there is no risk, and an increased result does not mean a condition will develop. Environment, lifestyle and family history also play a role. Any result that mentions cancer reflects a genetic tendency only. It is not a clinical cancer risk assessment and does not replace recommended cancer screening.

Talk with a healthcare provider before starting any supplement, especially if pregnant or breastfeeding, taking prescription medications, or managing a medical condition. Do not start, stop or change any medication based on these results without first talking with the prescribing provider.

Statements about supplements in this report have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

Research on how genes relate to health is still developing. Some recommendations are based on limited evidence and may be updated as new research becomes available.

Testing is performed by a CLIA-certified, CAP-accredited laboratory. Genotyping is highly accurate, but no laboratory test is completely error-free. Results that will change clinical decisions may warrant confirmatory testing.

OVERVIEW

Results at a Glance

This report covers 6 panels and 7 individual results. The summary below shows where the genetic profile indicates areas worth focusing on, areas to monitor, and areas where results are favorable. The Moderate results are where targeted support may have the most impact.

1

NEEDS ATTENTION

- IL-10 Inflammation Risk

4

MODERATE

- General Histamine Sensitivity
- Food-based Histamine Sensitivity
- Asthma Propensity
- Allergy Migraine Propensity

2

OPTIMAL

- IgE Levels
- CRP Inflammation

1 Mast Cell / IgE

9 variants analyzed

In plain terms: Mast cells play a pivotal role in the body's immune response, particularly in allergic reactions, where they release histamine and other mediators in response to allergen exposure. Immunoglobulin E (IgE) is a type of antibody that binds to allergens and triggers mast cell activation. Variations in the genetic regulation of mast cells and IgE can significantly influence the severity of allergic responses and susceptibility to related conditions, such as asthma, eczema, and anaphylaxis. This section explores the genetic factors contributing to mast cell activation and IgE production, providing insights into personalized approaches for managing allergies and related disorders.

The regulation of mast cell activation involves numerous genes, including those coding for mast cell receptors, signaling molecules, and the enzymes involved in mediator synthesis. Genetic variations in these components can alter mast cell reactivity and the subsequent release of histamine and other substances, affecting the severity and threshold of allergic reactions. For example, mutations in the KIT gene, which encodes a receptor tyrosine kinase essential for mast cell development and function, have been associated with increased mast cell proliferation and activity.

The production of IgE is tightly regulated by both genetic and environmental factors. Variations in genes involved in the immune response, such as those encoding cytokines and their receptors (e.g., IL-4, IL-13, and their receptors), can influence IgE levels and the propensity for allergic sensitization. Furthermore, polymorphisms in the FCER1A gene, encoding the high-affinity IgE receptor, can affect IgE binding to mast cells and basophils, modulating the allergic response.

While genetic predispositions play a crucial role in mast cell activation and IgE-mediated responses, environmental exposures, diet, and lifestyle factors also significantly impact allergy development and management. A holistic approach that combines genetic insights with environmental and lifestyle modifications can offer comprehensive management strategies to improve quality of life for individuals with allergic and mast cell-related disorders.

YOUR RESULTS

IgE Levels



TYPICAL

UNDERSTANDING WHAT THIS MAY MEAN

Individuals with typical risk for elevated IgE levels and mast cell activation genetic results have a genetic profile that reflects the average population risk. This indicates a typical likelihood of experiencing conditions associated with high IgE levels and mast cell activation. Awareness and early identification of symptoms related to allergies and atopic conditions can aid in managing potential issues through lifestyle adjustments and medical interventions if necessary.

GENETIC SUMMARY

GENE	RS ID	YOUR GENOTYPE	GENE	RS ID	YOUR GENOTYPE
IL-13 C-220T	rs1800925	**CC**	**FCER1A T-59-285C**	rs2427827	**CC**
IL-13 A431G	rs20541	**GG**	**FCER1A T-59-36C**	rs2251746	**CC**
IL-33 G3239A	rs928413	**AG**	**FCER1A G302A**	rs2298805	**GG**
IL-33 (T>C)	rs3939286	**TC**	**IL-13 A*471G**	rs1295685	**GG**
IL-33 (A>C)	rs1342326	**AC**			

2 Histamine

11 variants analyzed

In plain terms: Histamine, a biogenic amine involved in local immune responses, also plays a crucial role in regulating physiological functions, including digestion, sleep, and neural communication. However, variations in histamine metabolism and sensitivity can lead to a range of health issues, such as allergies, histamine intolerance, and conditions affecting the gut and central nervous system. This section examines the genetic underpinnings that influence histamine levels and sensitivity, shedding light on personalized approaches to managing related health conditions.

The body's ability to metabolize histamine is primarily governed by enzymes such as diamine oxidase (DAO) and histamine N-methyltransferase (HNMT). Genetic variations in the genes encoding these enzymes, such as polymorphisms in the AOC1 gene (which codes for DAO) and the HNMT gene, can significantly affect histamine breakdown. Individuals with reduced activity of these enzymes may experience an accumulation of histamine, leading to symptoms associated with histamine intolerance, including headaches, skin rashes, digestive issues, and in severe cases, anaphylaxis.

Understanding genetic predispositions related to histamine metabolism and receptor sensitivity can guide personalized dietary and other lifestyle interventions. For individuals with histamine intolerance, dietary modifications to limit histamine-rich foods and the use of supplements to support histamine breakdown can be beneficial. Furthermore, knowledge of receptor sensitivity can inform the selection of antihistamine medications, optimizing therapeutic outcomes for allergic and other histamine-related conditions.

Besides genetic factors, lifestyle and environmental factors also play a role in managing histamine-related issues. Stress reduction, gut health optimization, and avoiding histamine triggers can complement genetic insights, offering a holistic approach to managing histamine intolerance and enhancing overall well-being.

YOUR RESULTS

General Histamine Sensitivity



INCREASED

UNDERSTANDING WHAT THIS MAY MEAN

Individuals with increased histamine sensitivity genetic results carry genetic markers that heighten their reaction to histamine, affecting their response not just to foods but also to environmental factors. This increased sensitivity can exacerbate symptoms related to asthma, sinusitis, and allergies, such as more frequent or severe nasal congestion, skin reactions, and respiratory distress. For those with an increased sensitivity, managing environmental exposures, consulting with healthcare professionals for appropriate treatments, and possibly following a low-histamine diet can be key strategies in reducing symptoms and improving quality of life.

RECOMMENDATIONS

SUPPLEMENT

Quercetin

500 to 1,000 mg daily, before meals

A plant flavonoid that may help stabilize mast cells and reduce the release of histamine.

SUPPLEMENT

Vitamin C

1,000 to 2,000 mg daily in divided doses

Vitamin C supports DAO activity and helps the body break down histamine.

DIET

Low-Histamine Diet Trial

4 to 6 weeks: limit aged cheese, cured meats, wine, fermented foods

Reducing dietary histamine for a few weeks can show whether food is adding to symptoms.

DIET

Fresh-Cooked Protein

Cook and eat within 2 hours; freeze leftovers promptly

Histamine builds up in protein foods during storage, so fresher food means a lower histamine load.

LIFESTYLE

Air Quality Control

HEPA air purifier in the bedroom; fragrance-free household products

Airborne allergens, mold spores and synthetic fragrances can trigger histamine release, so cleaner indoor air may lower the overall histamine load.

LIFESTYLE

Identify Non-Food Triggers

Symptom diary: heat, stress, fragrance, infection, chemical exposure

Histamine release can be triggered by more than food; tracking other triggers helps reduce the overall load.

FURTHER TESTING

Serum Tryptase and Plasma Histamine

Collect at peak symptoms if possible

Shows whether mast cells are actively releasing histamine, beyond a genetic tendency.

FURTHER TESTING

Serum DAO Activity

Shows whether the enzyme that breaks down food histamine is low.

YOUR RESULTS

Food-based Histamine Sensitivity



INCREASED

UNDERSTANDING WHAT THIS MAY MEAN

Individuals with increased sensitivity to histamine genetic results have genetic markers that may predispose them to more pronounced reactions to histamine, making them more susceptible to symptoms like hives, digestive issues, and nasal congestion upon consuming histamine-rich foods. Managing an increased histamine sensitivity involves being mindful of one's diet, possibly reducing intake of known histamine triggers. Some supplementation such as vitamin C and B6 can be beneficial to support DAO activity.

RECOMMENDATIONS

SUPPLEMENT

DAO (Diamine Oxidase) Enzyme

1-2 caps with high-histamine meals

DAO is the primary enzyme that breaks down dietary histamine in the gut.

SUPPLEMENT

Vitamin B6

25 mg daily

Vitamin B6 is a cofactor for the DAO enzyme that breaks down histamine.

DIET

Vitamin C-Rich Foods

Citrus, peppers, kiwi, berries daily

Vitamin C supports the breakdown of histamine.

DIET

Limit Alcohol, Especially Wine and Beer

Alcohol is high in histamine and blocks the DAO enzyme.

LIFESTYLE

Keep a Symptom and Food Diary

2 to 4 weeks

Tracking symptoms alongside foods and other exposures helps identify personal histamine triggers.

LIFESTYLE

Review Medications That Block DAO

With a pharmacist

Some medications reduce DAO activity and raise histamine levels.

FURTHER TESTING

IgE Food Allergy Panel

Identifies immediate food allergies that can add to the body's histamine load.

FURTHER TESTING

Celiac and Gut Health Screen

With a provider

Gut lining problems lower DAO, so a gut workup can help.

GENETIC SUMMARY

GENE	RS ID	YOUR GENOTYPE	GENE	RS ID	YOUR GENOTYPE
MTHFR G677A	rs1801133	**GA**	**AOC1 C995T**	rs1049742	**TT**
MTHFR T1298G	rs1801131	**TT**	**AOC1 G-92-231T**	rs2052129	**TT**
HNMT C314T	rs11558538	**CC**	**AOC1 C47T**	rs10156191	**TT**
HDC T1932G	rs2073440	**TT**	**HNMT A*60G**	rs1050891	**AG**
AOC1 C1990G	rs1049793	**CC**	**MAO-A T891G**	rs6323	**TG**
AOC1 G1329A	rs2071514	**GG**			

3 Asthma

8 variants analyzed

In plain terms: Asthma, a chronic inflammatory disease of the airways, manifests through symptoms like wheezing, shortness of breath, chest tightness, and coughing. Its development and severity are influenced by a combination of genetic predispositions and environmental factors. This section provides an in-depth look at the genetic underpinnings of asthma, offering insights into how genetic variability impacts susceptibility, severity, and treatment responses in asthma patients.

Asthma is a highly heritable condition, with numerous genes associated with its risk and manifestation. Genetic studies have identified variations in genes involved in the immune response, airway hyperresponsiveness, and mucus production as contributing to asthma susceptibility. Key among these are genes associated with the regulation of IgE levels, eosinophil activation, and cytokine production, such as IL4, IL13, and IL33, and their receptors.

The expression of genetic predispositions to asthma is profoundly influenced by environmental factors, such as allergen exposure, air pollution, and viral respiratory infections. These interactions between genes and the environment are crucial in determining the onset and progression of asthma. Understanding these dynamics can help identify individuals at higher risk and inform strategies for prevention and early intervention.

YOUR RESULTS

Asthma Propensity



INCREASED

UNDERSTANDING WHAT THIS MAY MEAN

Individuals with increased propensity for asthma genetic results carry genetic variants that elevate their risk of developing asthma beyond the average population level. While genetics play a crucial role, environmental factors such as allergens, air pollution, and tobacco smoke also significantly impact asthma risk. Individuals with an increased genetic propensity should be proactive in managing environmental exposures, engaging in regular health check-ups, and consulting healthcare providers for strategies to minimize asthma risk and manage symptoms effectively.

RECOMMENDATIONS

SUPPLEMENT

Vitamin D3

2,000 to 4,000 IU daily

Modulates immune function and reduces airway inflammation, decreasing asthma severity and attack frequency.

SUPPLEMENT

Omega-3 Fatty Acids (EPA/DHA)

1,000 to 3,000 mg daily

Potent anti-inflammatory effects that reduce airway inflammation and improve lung function in asthmatics.

DIET

Anti-Inflammatory Diet

Asthma is driven by airway inflammation; anti-inflammatory eating reduces trigger sensitivity and severity.

DIET

Omega-3 Rich Foods

Fatty fish 2 to 3x/week reduces the leukotriene-driven airway inflammation central to asthma.

LIFESTYLE

Adequate Sleep

7 to 8 hours/night

Asthma symptoms worsen overnight; sleep quality directly impacts asthma control.

LIFESTYLE

Reduce Sedentary Behavior

Regular, appropriate exercise improves lung function and reduces asthma severity when managed correctly.

FURTHER TESTING

Vitamin D Level

Deficiency is highly prevalent in asthma and directly worsens immune regulation of airway inflammation.

FURTHER TESTING

IgE and Allergen Panel

Identifies specific allergen triggers driving asthmatic episodes; guides avoidance and immunotherapy.

GENETIC SUMMARY

GENE	RS ID	YOUR GENOTYPE	GENE	RS ID	YOUR GENOTYPE
IL-13 C-220T	rs1800925	**CC**	**IL-33 (A>C)**	rs1342326	**AC**
IL4R A1199C	rs1805011	**AA**	**IL-13 A431G**	rs20541	**GG**
FCER1A T-59-285C	rs2427827	**CC**	**IL-13 A*471G**	rs1295685	**GG**
IL-33 (T>C)	rs3939286	**TC**	**IL-33 G3239A**	rs928413	**AG**

4 Allergy Migraine

13 variants analyzed

In plain terms: Migraines are a common neurological condition characterized by intense, throbbing headaches often accompanied by nausea, vomiting, and sensitivity to light and sound. They can significantly impact daily life and productivity. Migraines are influenced by a combination of genetic and environmental factors. Understanding the genetic basis of migraines can help identify individuals at higher risk and guide personalized treatment and prevention strategies.

Genetic factors play a crucial role in the susceptibility to migraines. Several genes have been linked to an increased risk of developing migraines. These genes are involved in regulating neuronal excitability and neurotransmitter release. Variations in these genes can lead to abnormal neuronal activity, which can trigger migraines. By studying these genetic variations, it is possible to better understand an individual's propensity for migraines and tailor preventive measures accordingly.

Some migraines are triggered or worsened by histamine and allergic reactions. The AOC1 gene (Formerly known as DAO), which encodes the enzyme diamine oxidase, plays a significant role in histamine metabolism. Variations in the AOC1 gene can result in reduced enzyme activity, leading to higher levels of histamine in the body. This can trigger migraines, especially in individuals sensitive to histamine-rich foods or with allergies. Additionally, genetic variations in the HNMT gene, responsible for another enzyme that breaks down histamine, can also influence histamine-related migraine susceptibility. Understanding these genetic factors can help identify individuals who may benefit from dietary modifications and allergy management to reduce migraine frequency and severity.

Knowledge of genetic predispositions to migraines can guide personalized health strategies. For individuals with a genetic propensity for migraines, lifestyle adjustments such as regular sleep patterns, stress management, and avoiding known triggers can be beneficial. For those with histamine-related migraines, dietary changes to reduce histamine intake and managing allergies can help. Supplements like vitamin B6, which supports DAO enzyme activity, may also be recommended. By leveraging genetic information, healthcare providers can develop tailored approaches to prevent and manage migraines, improving overall quality of life.

YOUR RESULTS

Allergy Migraine Propensity



INCREASED

UNDERSTANDING WHAT THIS MAY MEAN

Individuals with increased allergy migraine propensity genetic results show a higher than average likelihood of experiencing migraines triggered by histamine. Monitoring and potentially reducing the intake of histamine-rich foods, such as aged cheeses, fermented foods, and certain alcoholic beverages, can help manage migraine symptoms.

RECOMMENDATIONS

SUPPLEMENT

Magnesium Glycinate

400 to 600 mg daily, with food

Magnesium may help reduce how often migraines occur, including those triggered during allergy flares.

SUPPLEMENT

Riboflavin (Vitamin B2)

400 mg daily for at least 3 months

High-dose riboflavin may help lower migraine frequency over several months of use.

DIET

Regular Meals and Hydration

3 meals daily; about 2 liters of fluid

Skipped meals and dehydration are common migraine triggers that can add to allergy-related headaches.

DIET

Magnesium-Rich Foods

Leafy greens, pumpkin seeds, legumes daily

Foods rich in magnesium may support the same pathways as a magnesium supplement.

LIFESTYLE

Reduce Allergen Exposure

HEPA filter, track high-pollen days, fragrance-free products

Lowering exposure to airborne allergens may reduce allergy-linked headaches.

LIFESTYLE

Saline Nasal Rinse During Allergy Season

Once or twice daily when symptoms flare

Rinsing allergens from the nasal passages may ease sinus pressure that can set off allergy-related headaches.

FURTHER TESTING

Skin Prick Allergy Test

Through an allergist

Identifies specific environmental allergens that may be driving headaches.

FURTHER TESTING

Headache Diary Review With a Provider

After 1 to 2 months of tracking

Patterns in the diary help a provider link headaches to allergy seasons or exposures.

GENETIC SUMMARY

GENE	RS ID	YOUR GENOTYPE	GENE	RS ID	YOUR GENOTYPE
GABRQ A1432T	rs3810651	**AA**	**ACE G2328A**	rs4343	**AA**
GABRA3 C551+9951T	rs2131190	**CC**	**HNMT C314T**	rs11558538	**CC**
IL-9 G350A	rs2069885	**GG**	**AOC1 G-92-231T**	rs2052129	**TT**
NOS3 C-51-665T	rs3918226	**CC**	**AOC1 C47T**	rs10156191	**TT**
TNF g.G4614A	rs1800750	**GG**	**AOC1 C1990G**	rs1049793	**CC**
TNF G-308A	rs1800629	**GG**	**AOC1 C995T**	rs1049742	**TT**
TGFB1 g.A4536G	rs1800469	**AA**			

5 CRP Inflammation

27 variants analyzed

In plain terms: Inflammation, a fundamental physiological response to injury or infection, can vary significantly among individuals, influenced by genetic predispositions that affect inflammatory pathways and the immune system's reaction to external stimuli. While acute inflammation is protective and necessary for healing, chronic inflammation is implicated in a wide array of diseases, including cardiovascular disorders, diabetes, and autoimmune diseases. This section delves into the genetic underpinnings of inflammation, shedding light on how genetic variability influences susceptibility to inflammatory conditions and informing personalized approaches to managing inflammation.

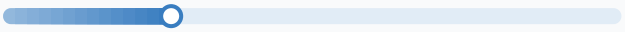
Specific genetic variants can modulate the activity of cytokines, chemokines, and other mediators of inflammation, influencing the intensity and duration of the inflammatory response. Polymorphisms in genes encoding pro-inflammatory cytokines (e.g., TNF-alpha, IL-6, IL-1beta) and anti-inflammatory cytokines (e.g., IL-10) can lead to an imbalance in pro- and anti-inflammatory signals, predisposing individuals to chronic inflammation and related diseases.

Understanding an individual's genetic predispositions can guide personalized strategies for managing inflammation and reducing the risk of associated diseases. This may include targeted dietary interventions rich in anti-inflammatory foods, personalized exercise programs, stress reduction techniques, and pharmacogenomics to tailor anti-inflammatory and immunomodulatory medications.

Combining genetic insights with lifestyle and environmental factors offers a holistic approach to managing inflammation. For individuals with a genetic predisposition to heightened inflammatory responses, incorporating lifestyle modifications that are known to reduce inflammation, such as avoiding pro-inflammatory foods, engaging in regular physical activity, and managing stress, can be particularly beneficial.

YOUR RESULTS

CRP Inflammation



DECREASED

UNDERSTANDING WHAT THIS MAY MEAN

Individuals with decreased predisposition for CRP inflammation genetic results have genetic markers associated with lower baseline levels of C-reactive protein, indicating a decreased inflammatory response. This favorable genetic trait suggests a lower risk of conditions associated with chronic inflammation, such as cardiovascular disease and certain autoimmune disorders. To maintain this advantageous low inflammation status, adopting a lifestyle that includes a balanced diet rich in anti-inflammatory foods, regular physical activity, and stress reduction techniques is recommended.

GENETIC SUMMARY

GENE	RS ID	YOUR GENOTYPE	GENE	RS ID	YOUR GENOTYPE
NQO1 G559A	rs1800566	**AG**	**PON1 T575C**	rs662	**TT**
TNF G-308A	rs1800629	**GG**	**TNF G-238A**	rs361525	**GG**
ERCC1 A354G	rs11615	**AA**	**IL-10 T-149+1984G**	rs1800872	**GG**
XRCC1 T1196C	rs25487	**TC**	**IL-10 T-149+2474C**	rs1800896	**TC**
NRF2 G45+2714C	rs2364723	**GG**	**IL-10 (G>A)**	rs3024505	**AG**
NRF2 C45+11108T	rs1806649	**CC**	**IL4R A1727G**	rs1801275	**AA**
NRF2 A45+10270G	rs13001694	**AA**	**IL-1B A4490G**	rs16944	**AG**
NRF2 A46-4230G	rs6726395	**GG**	**IL-1B G315A**	rs1143634	**GG**
CRP (A>G)	rs3093059	**AA**	**IL6/IL6-AS1 (G>C)**	rs1800795	**CG**
CRP C*374T	rs1205	**TT**	**IL4R A1199C**	rs1805011	**AA**

GENETIC SUMMARY

GENE	RS ID	YOUR GENOTYPE	GENE	RS ID	YOUR GENOTYPE
CRP (G>A)	rs3091244	**GG**	**XRCC1 C839T**	rs25489	**CC**
CAT (C>T)	rs1001179	**CC**	**CYP2E1 C-1055T**	rs2031920	**CC**
CAT C1167T	rs769217	**CC**	**CYP2E1 g.G3739C**	rs3813867	**GG**
NQO1 G415A	rs1131341	**GG**			

6 IL-10 Inflammation

5 variants analyzed

In plain terms: Interleukin-10 (IL-10) is a known pathway in the gut that acts to reduce inflammatory, specifically cytokine, responses, ultimately maintaining healthy gut homeostasis. During the day, the body is in constant “defense mode” regarding the environment, taxing the immune system. The gut not only processes nutrients but also acts as a barrier that helps reduce inflammation with healthy levels of IL-10. At the cellular level, metabolism can be affected during a gut-immune challenge.

Additionally, food sensitivities, even though they are not directly related to IL-10, can affect overall immunity and may trigger IL-10 dysregulation. Gluten, dairy, or sugar sensitivity can alter the immune response, ultimately affecting gut homeostasis and overall gut metabolism.

There is a well-documented link between gut inflammation and IL-10, which may affect mood and neurological state.

YOUR RESULTS

IL-10 Inflammation Risk



INCREASED

UNDERSTANDING WHAT THIS MAY MEAN

Individuals with increased risk of IL-10 related inflammation genetic results have a genetic predisposition that may lead to lower production or effectiveness of IL-10, increasing the potential for chronic inflammation. This heightened risk suggests a greater susceptibility to inflammatory conditions, which could contribute to the development of related diseases. Focusing on anti-inflammatory lifestyle modifications, such as incorporating anti-inflammatory foods into the diet, engaging in stress reduction techniques, and maintaining regular physical activity, is crucial for managing and potentially mitigating this increased inflammation risk.

RECOMMENDATIONS

SUPPLEMENT

Curcumin

500 to 1,500 mg daily with piperine

Inhibits NF-kB and reduces pro-inflammatory cytokines TNF-alpha and IL-6, the master regulators of inflammation.

SUPPLEMENT

Ginger

1 to 2 g dried root or 250 to 1,000 mg extract daily

Inhibits TNF-alpha, IL-1beta, COX-2, and prostaglandins; particularly beneficial for arthritis and digestive inflammation.

DIET

Limit Refined Sugars

Refined sugar is the most pro-inflammatory dietary component; limiting it reduces CRP significantly.

DIET

Turmeric and Spices

Adding turmeric, ginger, rosemary, and fenugreek daily provides culinary anti-inflammatory compounds.

LIFESTYLE

Reduce Stress

Chronic stress activates NF-kB and raises CRP; stress management directly reduces inflammatory burden.

LIFESTYLE

Meditation

10 to 20 min, 2+x/week

Mindfulness practice reduces CRP and inflammatory gene expression through epigenetic mechanisms.

FURTHER TESTING

hsCRP

High-sensitivity CRP is the most accessible and actionable systemic inflammation marker.

FURTHER TESTING

Omega-3 Index

Low omega-3 index predicts high inflammatory state; directly guides fish oil dosing.

GENETIC SUMMARY

GENE	RS ID	YOUR GENOTYPE	GENE	RS ID	YOUR GENOTYPE
IL-10 T225+56C	rs1518111	**CC**	**IL-10 T-149+2474C**	rs1800896	**TC**
IL-10 g.A4206G	rs1800871	**GG**	**IL-10 T-149+1984G**	rs1800872	**GG**
IL-10 (G>A)	rs3024505	**AG**			

APPENDIX A

Supplement Recommendations

Based on your results

Supplements listed below are recommended for panels where at least one result was outside the typical range.

SUPPLEMENT	RATIONALE	PANEL
Quercetin 500 to 1,000 mg daily, before meals	A plant flavonoid that may help stabilize mast cells and reduce the release of histamine.	Histamine
Vitamin C 1,000 to 2,000 mg daily in divided doses	Vitamin C supports DAO activity and helps the body break down histamine.	Histamine
DAO (Diamine Oxidase) Enzyme 1-2 caps with high-histamine meals	DAO is the primary enzyme that breaks down dietary histamine in the gut.	Histamine
Vitamin B6 25 mg daily	Vitamin B6 is a cofactor for the DAO enzyme that breaks down histamine.	Histamine
Vitamin D3 2,000 to 4,000 IU daily	Modulates immune function and reduces airway inflammation, decreasing asthma severity and attack frequency.	Asthma
Omega-3 Fatty Acids (EPA/DHA) 1,000 to 3,000 mg daily	Potent anti-inflammatory effects that reduce airway inflammation and improve lung function in asthmatics.	Asthma
Magnesium Glycinate 300 to 400 mg elemental magnesium/day	The best-tolerated form for long-term supplementation with minimal laxative effect. Glycinate chelation improves absorption and bioavailability over oxide, sulfate, or citrate.	Allergy Migraine
Riboflavin (Vitamin B2) 400 mg daily	High-dose riboflavin supports mitochondrial energy production in the brain and may reduce migraine frequency after about 3 months.	Allergy Migraine
Curcumin 500 to 1,500 mg daily with piperine	Inhibits NF-kB and reduces pro-inflammatory cytokines TNF-alpha and IL-6, the master regulators of inflammation.	IL-10 Inflammation
Ginger 1 to 2 g dried root or 250 to 1,000 mg extract daily	Inhibits TNF-alpha, IL-1beta, COX-2, and prostaglandins; particularly beneficial for arthritis and digestive inflammation.	IL-10 Inflammation

APPENDIX B

Further Testing Recommendations

Based on your results

Lab tests and assessments recommended for panels where at least one result was outside the typical range.

TEST / ASSESSMENT	CLINICAL RATIONALE	PANEL
Serum Tryptase and Plasma Histamine Collect at peak symptoms if possible	Shows whether mast cells are actively releasing histamine, beyond a genetic tendency.	Histamine
Serum DAO Activity	Shows whether the enzyme that breaks down food histamine is low.	Histamine
IgE Food Allergy Panel	Identifies immediate food allergies that can add to the body's histamine load.	Histamine
Celiac and Gut Health Screen With a provider	Gut lining problems lower DAO, so a gut workup can help.	Histamine
Vitamin D Level	Deficiency is highly prevalent in asthma and directly worsens immune regulation of airway inflammation.	Asthma
IgE and Allergen Panel	Identifies specific allergen triggers driving asthmatic episodes; guides avoidance and immunotherapy.	Asthma
Skin Prick Allergy Test Through an allergist	Identifies specific environmental allergens that may be driving headaches.	Allergy Migraine
Headache Diary Review With a Provider After 1 to 2 months of tracking	Patterns in the diary help a provider choose prevention options.	Allergy Migraine
hsCRP	High-sensitivity CRP is the most accessible and actionable systemic inflammation marker.	IL-10 Inflammation
Omega-3 Index	Low omega-3 index predicts high inflammatory state; directly guides fish oil dosing.	IL-10 Inflammation