

Eosinophils

Biohacker Report

REPORT CATEGORIES —



INFLAMMATION &
AUTOIMMUNITY



ALLERGIES

Sample Client

Report date: 15 January 2026

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DISCLAIMER

This report does not diagnose this or any other health conditions. Please talk to a healthcare professional if this condition runs in your family, you think you might have this condition, or you have any concerns about your results.

Personal information

NAME

Sample Client

SEX AT BIRTH

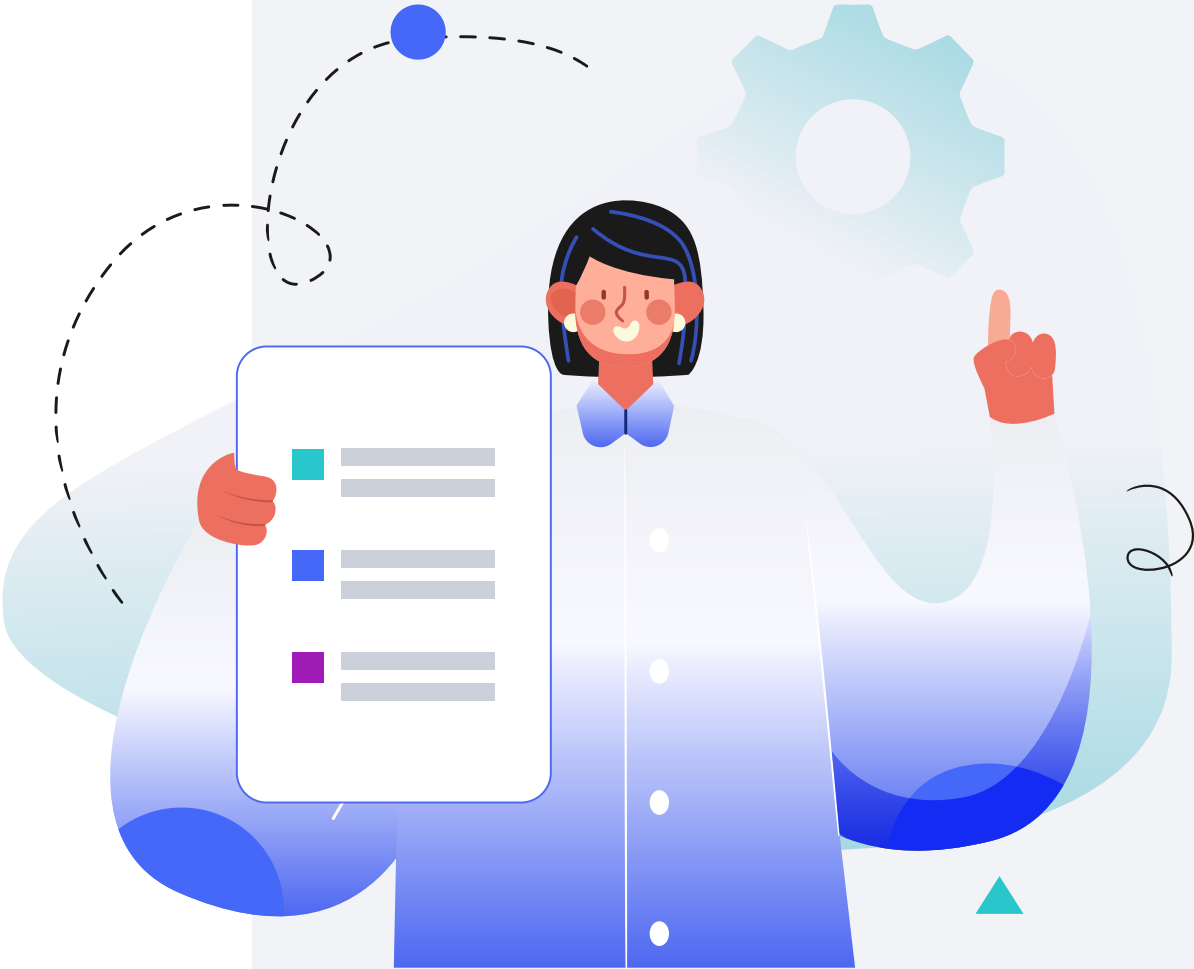
Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg



How this works

Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.



Similarly, our Trait Reports look at how your DNA influences your traits.



Your DNA is like an instruction manual — it contains a lot of information.
You can think of it as a blueprint for your body.

Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



We use artificial intelligence and machine learning to analyze all this information.
We then summarize your results as a risk score or display it on a gauge.

In total, we analyze up to 83 million genetic variants.

When we give a risk score, the risk icon tells you if you are at a higher or lower risk compared to other people:



Genotype color info:

AA

You don't have any risk alleles

AA

You have 1 risk allele

AA

You have 2 risk alleles

Your risk is also displayed as a percentile. This will tell you how your risks compare to our sample population. The lower your percentile number, the lower your risk. The "50th percentile" would be an average risk.

Similarly, the gauge tells you your relative risk score compared to our sample population, or it indicates a specific trait or haplotype you are more likely to have based on your genetic variants.

When applicable, we also list top evidence-based recommendations that may help lower your risk. The focus is on recommendations that may be of benefit to you, based on your genetics.

Our recommendations come in four categories: lifestyle, diet, supplements and drugs.
The following icons tell you which category a recommendation falls into:



Our team of scientists also ranks each recommendation.
We rank based on impact and the strength of evidence in the medical literature.

Impact shows how strongly a recommendation will affect your health in a certain area.
Evidence is how much scientific support there is for the recommendation. Rankings are from 1 to 5 (low to high):



Impact

Impact scores range from 1-5. These scores reflect how much of an effect each recommendation can have. An impact score of 5 predicts the biggest effect.

When a recommendation affects something we can measure, we use those measurements to assign the impact score. For example, a recommendation that decreases cholesterol by 20% will have a higher impact score than one that decreases it by 5%.

Some recommendations affect things that we cannot directly measure, like stress or mood. For these, the impact score is based on how well they work relative to other recommendations and standard treatments. The best ones get the highest scores.

If there is a lot of research that shows a recommendation works especially well for your genotype, the impact score gets increased.

Recommendation Evidence

- 5 / 5
- Recommendations that are considered effective and generally recommended by experts and medical bodies.
-
- 4 / 5
- Recommendations that are considered likely effective and that have multiple independent meta-analyses and a great many studies supporting them.
-
- 3 / 5
- Recommendations that are considered possibly effective and have many studies supporting them
-
- 2 / 5
- Recommendations that have insufficient evidence, with two or several clinical trials supporting them, or many studies but with ambiguous results.
-
- 1 / 5
- Recommendations that have insufficient evidence, with a single clinical trial, or with many studies most of which didn't find support for the recommendation.
-
- 0 / 5
- No evidence in humans.

Genotype-specific Evidence

- High-quality
- Direct evidence that a recommendation helps more in people with your gene variant (many clinical trials, a few large clinical trials, or a meta-analysis).
- Medium-quality
- Direct evidence that a recommendation helps more in people with your gene variant (a few clinical trials or one large clinical trial).
- Low-quality
- Direct evidence that a recommendation helps more in people with your gene variant (a single clinical trial or more trials with inconsistent results).
- Indirect
- A recommendation may help more in people with your gene variant because it targets a specific gene or protein affected by your variant (e.g., MTHFR, dopamine).
- In theory
- A recommendation may help more in people with your gene variant because it targets a specific mechanism affected by your variant (e.g., inflammation, oxidative stress).

Some things to keep in mind:

- Genetics doesn’t play a considerable role in a condition or a trait.
- There is not enough research available to estimate a genetic predisposition.
- There are technical limitations to estimating or presenting a genetic predisposition.
- The topic is sensitive, and a genetic predisposition should only be estimated and presented by a healthcare professional.

Introduction

Eosinophils are white blood cells that play a role in your immune response. They help fight infections caused by parasites and are involved in allergies and inflammation [\[R\]](#).

Normally, eosinophils constitute less than 5% of all your white blood cells [\[R\]](#).

Factors Influencing Eosinophil Levels

Eosinophils are white blood cells that help fight infections caused by parasites, but are also involved in allergies and inflammation [R].

Common causes of high eosinophil levels are:

- Allergic diseases such as asthma, eczema, or seasonal allergies [R, R, R, R]
- Parasitic infections, mainly due to worms [R, R]

Genetics may also affect eosinophil levels [R].



TYPICAL LEVELS

Predisposed to typical eosinophil levels based on 851,736 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
GATA2	rs6782812	AA
SH2B3	rs7310615	GG
SLC22A5	rs2706334	TT
HLA-DQA2	rs28383314	CC
LGALS14	rs412884	CC
HBS1L	rs9389268	GG
IL18R1	rs9807989	TC
KLF3	rs73232890	GA
IKZF2	rs2170572	GA
ITGB8	rs34030463	DEL(T)A
NCF4	rs117582568	GG
/	rs536070968	CC
CCR3	rs138346219	AA
SHC1	rs8191981	GG
GFI1B	rs150813342	CC
ALOX15	rs71368508	CC
S1PR4	rs3746072	GG
IL17RA	rs140221307	TT
GATA1	rs146587548	G
CCR7	rs112401631	TT
BCL2	rs17758695	CC
ADORA1	rs61025910	GG
RUNX1	rs2242886	CC
ERMP1	rs992969	AA
NAA38	rs74480102	GG
RBM17	rs12722547	GG
BCL2L1	rs80054178	TT
/	rs76574427	GG
SPIDR	rs45577137	AA
BCL2L11	rs72836346	GG
ACKR2	rs2228467	TT
ERG	rs80109907	CC

GENE	SNP	GENOTYPE
ASB2	rs11555542	TT
/	rs367705866	AA
CD300LG	rs72836561	CC
CDK6	rs445	CC
SHARPIN	rs34173062	GG
NFKB1	rs113473633	AA
TRIB1	rs16900706	AA

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

Your Recommendations

Your recommendations are prioritized according to the likelihood of it having an impact for you based on your genetics, along with the amount of scientific evidence supporting the recommendation.

You’ll likely find common healthy recommendations at the top of the list because they are often the most impactful and most researched.

DOSAGE		DOSAGE			
1	Astragalus	500 mg	2	Quercetin	250 mg
3	Lactobacillus Plantarum	10 billion CFU	4	Oyster Mushroom	600 mg
5	Avoid Lead Exposure		6	Maintain Optimal Vitamin D Levels	1000 iu
7	Air Purifier		8	Avoid Contact With Dust	
9	Avoid Exposure to Molds		10	Probiotics	30 billion CFU
11	Avoid Exposure to Solvents		12	Dietary Omega-3 Fatty Acids	
13	Bromelain		14	Elimination Diet	

1



Astragalus

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take a 500 mg astragalus supplement once daily with a meal. Continue this regimen for at least 4 to 6 weeks to evaluate its effectiveness on your overall health.

TYPICAL STARTING DOSE

500 mg

Description

Astragalus is an herb used in traditional Chinese medicine. It is believed to have immune-boosting properties and may help reduce stress and support overall vitality.

[Astragalus](#) (*Astragalus membranaceus*) is an herb used in traditional Chinese medicine. It is commonly used for “tonifying Qi” or fatigue. It may help [\[R\]](#), [\[R\]](#):

- Reduce inflammation
- Fight [oxidative stress](#)

Astragalus root is a staple of traditional Chinese medicine, where it is also known as *Huang Qi*.

How it helps

Astragalus has anti-inflammatory properties which may help reduce eosinophils, cells that contribute to inflammation and allergic reactions. However, this supplement's effectiveness at specifically reducing eosinophils in the body is not well-studied or confirmed.

An [RCT with 120 asthmatic children](#) found that astragalus may help **prevent the recurrence of asthma** by increasing the total effective rate, especially when combined with hormonal treatment, and the levels of PEFR and IFN-gamma and decreasing IL-4 [\[R\]](#).

A [randomized controlled trial with 150 children with cough variant asthma \(CVA\)](#) found that Astragalus Granule (AG), auricular point sticking combined with aerosol inhalation, and with Budesonide suspension and Terbutaline Sulphate Solution, **reduced TNF-α, IL-4, eosinophil cell count (EOS), and IgE levels while improving the level of IL-10**, especially when combined [\[R\]](#).

2



Quercetin

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

Take 250-1000 mg of quercetin supplement daily with a glass of water, preferably with a meal to aid in its absorption.

TYPICAL STARTING DOSE

250 mg

Description

Quercetin is a natural plant flavonoid found in various foods, particularly in fruits and vegetables like apples, onions, and broccoli. It is used as a dietary supplement and is valued for its potential antioxidant and anti-inflammatory properties.

[Quercetin](#) is a **plant-based antioxidant**. It supports the immune system and helps lower inflammation [\[R\]](#), [\[R\]](#).

Good sources of quercetin include [\[R\]](#):

- Apples
- Onions
- Tea

People mainly use quercetin supplements to relieve allergies [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

Quercetin significantly reduces blood eosinophil levels in patients with asthma and other allergic conditions [\[R\]](#), [\[R\]](#).

Quercetin has demonstrated anti-eosinophilic activity in various experimental animal models [\[R\]](#).

Please note: *quercetin may inhibit the production of the thyroid hormone T4 (thyroxine). Individuals with thyroid disorders, particularly hypothyroidism or low T4 levels, should exercise caution when using quercetin and always consult with a healthcare provider before taking this supplement* [\[R\]](#).

Please note: *quercetin may interfere with iron absorption due to its iron-chelating properties, potentially exacerbating anemia or making it harder to manage. If you have anemia, consult your healthcare provider before using quercetin supplements* [\[R\]](#).

3



Lactobacillus Plantarum

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take a probiotic supplement containing *Lactobacillus plantarum* 299V daily. The typical dosage is 10 billion colony-forming units (CFUs). Continue for at least 4 weeks to assess benefits on digestive health.

TYPICAL STARTING DOSE
10 billion CFU

Description

Lactobacillus plantarum is a [probiotic](#) bacterium found in many fermented plant products such as sauerkraut, pickles, brined olives, and Korean kimchi [\[R\]](#).

People take *L. plantarum* supplements to improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Diarrhea
- Skin appearance
- IBD
- High cholesterol

How it helps

Lactobacillus Plantarum is a type of probiotic that can enhance your gut health and immune system. While there's no direct evidence it reduces Eosinophils, a healthy gut may overall contribute to a balanced immune response, including potentially moderating Eosinophil levels.

A strain of *L. plantarum* (CJLP133, 1010 cfu/day for 12 weeks) **decreased eosinophil count and the levels of IL-4 and IFN-gamma** in a [placebo-controlled trial of 83 children with atopic dermatitis](#) [\[R\]](#).

4



Oyster Mushroom

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Consume 600 mg to 1.2 grams of oyster mushroom extract in supplement form daily, ideally divided into two or three doses. Continue this routine for 1 to 2 months to evaluate its effects on your health.

TYPICAL STARTING DOSE

600 mg

Description

Oyster mushrooms (*pleurotus ostreatus*) are a popular and edible species of mushroom grown all over the world, rich in protein, fiber, B-vitamins, vitamin D, potassium, iron, and selenium. They have been used in Chinese medicine for their potential benefits toward immune function. They are eaten today for being nutritious and a source of antioxidants.

How it helps

In a placebo-controlled trial of 175 children with recurrent respiratory infections, taking oyster mushroom beta-glucans (10 mg of pleuran and 10 mg of vitamin C in 1 mL of syrup) for 6 months reduced peripheral blood eosinophilia [R, R].

Oyster mushrooms are known to contain compounds that could suppress inflammation and assist in regulating the immune response. This might help in controlling increased eosinophil levels.

5



Avoid Lead Exposure

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Prevent lead exposure by using cold water for drinking and cooking, regularly cleaning dust from windowsills and floors, and ensuring that your home's paint is not chipping if it was built before 1978. For occupations involving potential lead exposure, use protective gear and follow safety protocols. Test your home for lead if it's old or you're concerned about contamination.

Description

Lead is a heavy metal. It is naturally found in the environment in small amounts [\[R\]](#), [\[R\]](#).

Exposure to lead can cause it to build up in the body. A buildup of lead can contribute to oxidative stress and cell damage. This is called **lead poisoning** [\[R\]](#), [\[R\]](#).

Lead is no longer used in the manufacturing of some products like gasoline and paint. However, it can still be found in some pipes, batteries, and the wall paint of older homes [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

In a study of 2026 asthmatic individuals, high blood lead levels were linked to higher blood eosinophil counts [\[R\]](#).

Lead may contribute to high eosinophils by stimulating the immune system.

6



Maintain Optimal Vitamin D Levels

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Check your vitamin D levels, they should ideally be in the 30-66 ng/mL range. If your levels are lower than that, take a vitamin D supplement, 1000-4000 IU daily, to reach an optimal range.

TYPICAL STARTING DOSE

1000 iu

Description

Vitamin D, often referred to as the "sunshine vitamin," can be synthesized by the skin when exposed to sunlight, as well as being found in fish, eggs, and fortified milk. It helps regulate calcium absorption, promoting strong bones and a healthy immune system. Vitamin D deficiency can lead to conditions like rickets in children and osteoporosis in adults.

Your body needs [vitamin D](#) for strong bones. Vitamin D also plays a role in [\[R\]](#):

- Mood
- Immunity
- Heart health
- Blood sugar control

[Sunlight](#) is our main source of vitamin D. Experts recommend getting at least **5-15 minutes of midday sun, 2-3 times per week**. People with darker skin and those living at high latitudes may need longer periods of sun exposure [\[R\]](#), [\[R\]](#).

Foods like fish, eggs, and fortified milk provide small amounts of vitamin D. **People lacking vitamin D should consider taking a supplement** [\[R\]](#).

How it helps

A clinical trial demonstrated that vitamin D supplementation reduced eosinophilic airway inflammation in patients with nonatopic asthma who had high baseline levels of sputum eosinophils [\[R\]](#).

Research also showed that vitamin D deficiency was associated with higher blood eosinophil counts, further supporting the role of vitamin D in modulating eosinophil levels [\[R\]](#).

Additionally, vitamin D was found to upregulate the expression of C-X-C chemokine receptor type 4 on eosinophils, which could help in recruiting these cells to noninflammatory sites [\[R\]](#).

7



Air Purifier

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Install an air purifier in your home, ideally in the rooms you spend the most time in, such as your bedroom and living room. Keep the air purifier on for at least 12 hours each day, or continuously if possible, to effectively reduce airborne contaminants. Regularly clean or replace the filters according to the manufacturer's instructions to maintain its efficiency.

Description

Air purification is the process of cleaning the air around us. Using a high-quality air purifier with a HEPA filter helps remove harmful particles like dust, smoke, and bacteria. Having clean air to breathe can help boost your health by reducing allergies, asthma problems, and even certain infections.

How it helps

Air purification can help reduce airborne allergens and pollutants that may trigger an increase in eosinophils, particularly in individuals with allergic conditions or asthma.

8



Avoid Contact With Dust

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

To avoid contact with dust, clean surfaces with a damp cloth at least twice a week, use a vacuum cleaner with a HEPA filter regularly on carpets and upholstery, and avoid using feather dusters that disperse dust into the air. Additionally, consider using air purifiers in rooms where you spend the most time and keep windows closed on windy days to prevent outdoor dust from coming in.

Description

Avoiding exposure to dust can help alleviate allergy symptoms such as sneezing, runny nose, and itchy eyes, promoting respiratory comfort and overall well-being, particularly for individuals with allergies or allergic conditions.

How it helps

Dust can contain allergens such as dust mites, which can trigger an eosinophilic response when inhaled.

9



Avoid Exposure to Molds

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Keep indoor humidity levels below 50% by using dehumidifiers or air conditioners, ensure proper ventilation in areas like bathrooms and kitchens, fix leaks promptly, and clean up any water damage within 24-48 hours to prevent mold growth. Regularly check and clean places where mold tends to accumulate, such as shower curtains, window sills, and refrigerator drip pans.

Description

[Molds](#) are tiny fungi that live all around us: in the soil and air, on food crops, and even on our skin. Some of them are beneficial while others can wreak havoc on our health. Inhaled mold may cause a range of respiratory symptoms, like infections, asthma, and coughing.

[Molds](#) are tiny fungi that live all around us: in the soil and air, on food crops, and even on our skin. Some of them are beneficial while others can wreak havoc on our health [\[R\]](#).

Inhaled mold may cause a range of respiratory symptoms, including [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Respiratory infections
- Reduced lung function
- Caugh
- Asthma worsening

Mycotoxins are the most dangerous aspect of **foodborne mold**. Exposure to higher amounts of these toxins can damage the organs and promote cancer growth [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

Exposure to molds can trigger allergic reactions and increase eosinophils. Avoidance helps reduce contact with these allergens.

10



Probiotics

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take a probiotic supplement containing 10 billion or more live cultures once daily, preferably with a meal or as directed by the packaging or a healthcare provider.

TYPICAL STARTING DOSE
30 billion CFU

Description

Probiotics are live beneficial bacteria and yeasts that can support gut health and digestive function when consumed as supplements or found in fermented foods like yogurt and sauerkraut. They may be beneficial to gut health, immune function, blood sugar, and mood.

[Probiotic bacteria](#) are “good” bacteria found mainly in the large intestine. They support your body and mind by [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Maintaining gut health
- Supporting a healthy immune system
- Improving your mood
- Helping to maintain healthy blood sugar

Prebiotics are certain types of fiber and other complex carbs that serve as food for gut bacteria. **They support gut health by helping boost the activity and growth of “good” bacteria** [\[R\]](#), [\[R\]](#).

Prebiotics are also added to foods and supplements. Common prebiotic ingredients are [\[R\]](#), [\[R\]](#):

- Oligo-fructose
- Oligo-galactose
- [Inulin](#)

Mixtures of probiotics and prebiotics are known as **synbiotics** [\[R\]](#).

How it helps

Probiotics may help balance the immune system and reduce inflammation in the body, which can play a role in the regulation of eosinophil levels.

11



Avoid Exposure to Solvents

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Wear protective gloves and masks when using solvent-based products such as paint thinners, degreasers, or nail polish removers. Ensure adequate ventilation by working outdoors or in well-ventilated areas whenever possible. Seek solvent-free or low-VOC (Volatile Organic Compounds) alternatives for household and professional use.

Description

Avoiding exposure to organic solvents, often found in cleaning products and industrial settings, can reduce the risk of potential health issues such as respiratory problems and skin irritation. Implementing safety measures and proper ventilation helps minimize contact with these chemicals.

How it helps

Solvents can be irritants or allergens that potentially escalate eosinophil levels, so reducing exposure limits these triggers.

12



Dietary Omega-3 Fatty Acids

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate foods high in omega-3 fatty acids into your diet daily. This includes eating fish such as salmon, mackerel, and sardines at least twice a week. Alternatively, include a tablespoon of flaxseed oil or chia seeds in your daily diet.

Description

[Omega-3 fatty acids](#) are some of the healthiest fats we can eat. They help lower inflammation and protect the heart, brain, and eyes. Our bodies produce less omega-3s than we need for optimal health, so it's important to get enough through food or supplements [\[R\]](#), [\[R\]](#), [\[R\]](#).

There are three major types of omega-3s: ALA, EPA, and DHA. **EPA and DHA are vital for mental and heart health** [\[R\]](#), [\[R\]](#), [\[R\]](#).

Fatty fish are rich in EPA and DHA. They include [\[R\]](#):

- Salmon
- Tuna
- Herring
- Sardines

For optimal health, try to get at least **two servings of fatty fish per week**. Fish oil supplements are available for those who don't eat fish regularly [\[R\]](#).

How it helps

Omega-3 fatty acids in the diet have anti-inflammatory properties that may be beneficial in managing the inflammatory reactions involving eosinophils.

13



Bromelain

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 500mg of bromelain supplement two to three times daily, preferably with food to reduce the risk of gastrointestinal discomfort. It is recommended to use for short-term relief, typically not exceeding several months, unless supervised by a healthcare provider.

Description

Bromelain is an enzyme found in pineapple that may have anti-inflammatory and digestive benefits. It's often used as a dietary supplement to aid digestion and reduce swelling associated with injuries or surgery.

[Bromelain](#) is an extract from pineapples. It’s rich in enzymes that break down proteins [\[R\]](#).

Bromelain may have some health benefits. People use it to [\[R\]](#):

- Maintain joint health
- Help with burns
- Support heart health

How it helps

Bromelain, an enzyme found in pineapple, can have anti-inflammatory effects and might influence the migration of eosinophils.

14



Elimination Diet

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Begin by removing foods you suspect might be causing adverse reactions for 2-3 weeks. These often include dairy, gluten, soy, nuts, eggs, corn, and processed sugars. After this period, reintroduce each food group one at a time every 3 days, while noting any symptoms that may reappear. This process helps identify food intolerances or sensitivities.

Description

An elimination diet involves removing specific foods or food groups from the diet to identify and address potential food sensitivities or allergies. It can help alleviate symptoms such as digestive issues, skin problems, and allergic reactions by pinpointing trigger foods.

An elimination diet omits foods that can cause your body to have a reaction. Foods are removed for a period of time and then added back in. This helps figure out what foods are causing symptoms or making them worse [\[R\]](#).

Salicylates are compounds naturally found in many foods and drinks. These include wine, tea, beans, and tomatoes [\[R\]](#), [\[R\]](#).

One form (*salicylic acid*) is found in aspirin. People who are sensitive to salicylates may have a reaction to aspirin and other NSAIDs [\[R\]](#), [\[R\]](#).

How it helps

An elimination diet can help determine food sensitivities that might be causing an increase in eosinophils and related inflammation.

Next Steps

Remember, your genes only tell one important part of your health story!

Now that you've seen your DNA-based results for this health topic, let's take a look at other contributing factors.

Your lab results

Your lab results are impacted by the combined effect of your genes, environment and lifestyle.

Lab tests will give you the best picture of your current health status, while your genes provide insight into your health predispositions and which recommendations are best for you.

