

Excessive Mast Cells

DNA Health Report

REPORT CATEGORIES —



IMMUNITY &
INFECTIONS



ALLERGIES

Sample Client

Report date: 15 January 2026

Table of Contents

03 How this works

- 04 Impact
- 05 Evidence
- 06 Some things to keep in mind

07 Introduction

08 Your genetics

09 Your recommendations

19 Next Steps

- 19 Your Lab Results

Personal information

NAME

Sample Client

SEX AT BIRTH

Male

HEIGHT

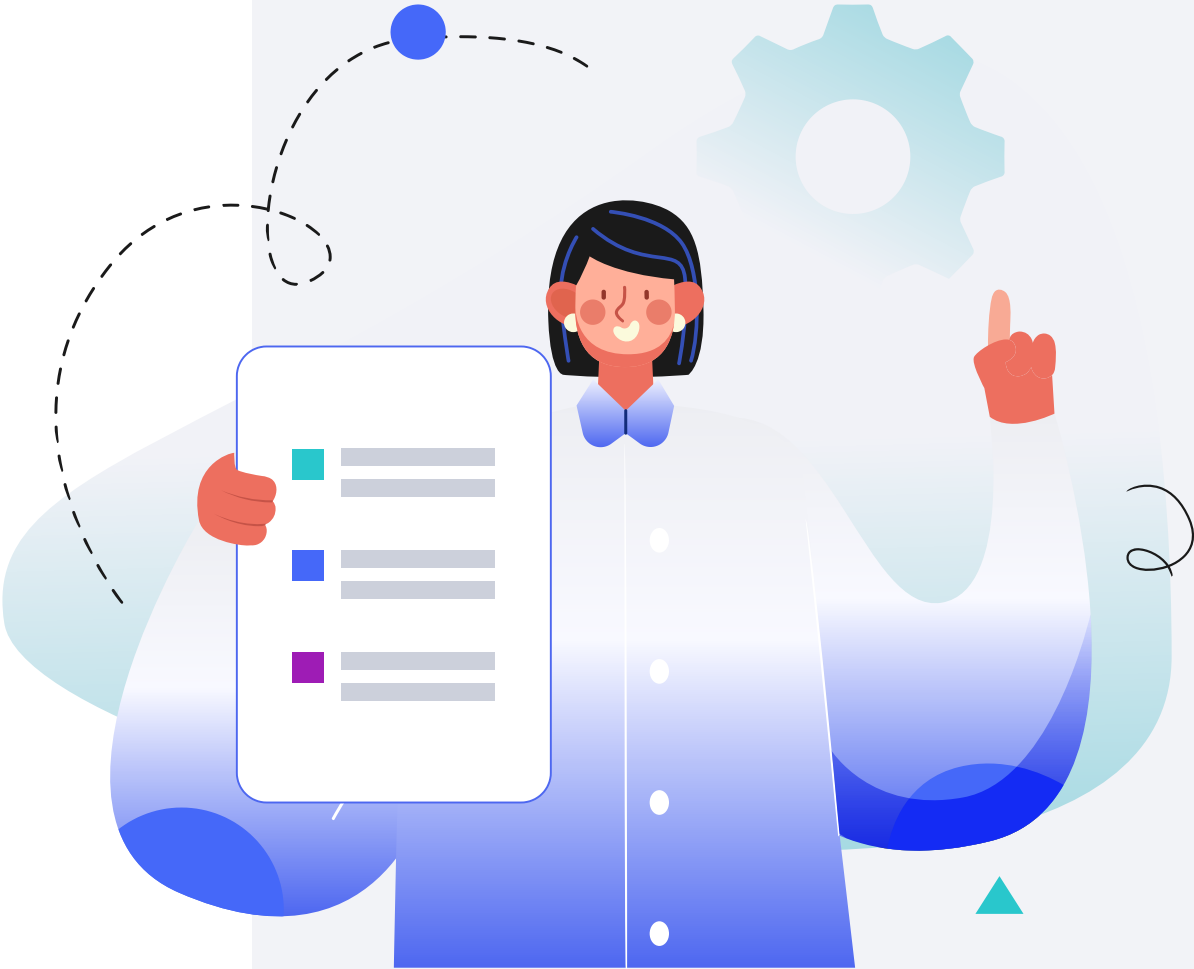
5ft 5" 165cm

WEIGHT

137lb 62kg

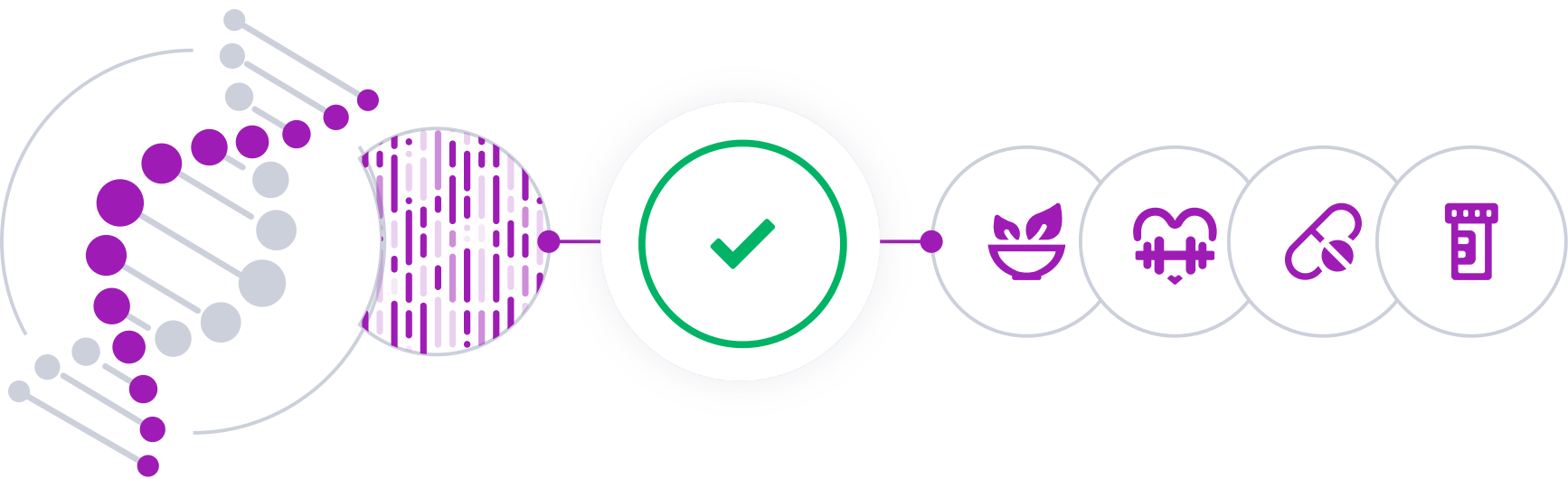
DISCLAIMER

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.



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

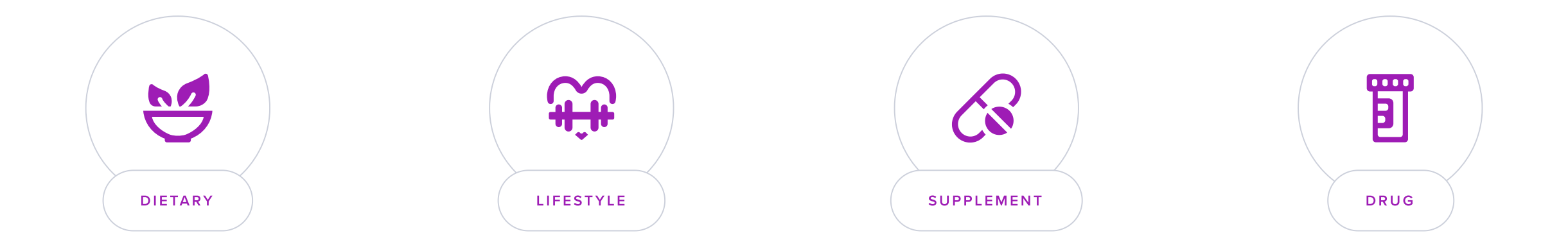
You have 2 risk alleles

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

Mast cells are a type of white blood cell that play a crucial role in allergic reactions and are found in connective tissue, especially in the skin, lungs, intestines, and lining of blood vessels. They help the immune system function properly and protect the body from disease.

In some people, excessive mast cells build up in your skin, bone marrow, digestive tract, or other body organs. This condition is called mastocytosis [\[R\]](#).

There are two main forms of mastocytosis:

- Cutaneous Mastocytosis: Presents as reddish-brown spots on the skin, often with itching, particularly when rubbed (Darier's sign).
- Systemic Mastocytosis: Can involve symptoms related to excessive histamine release, such as flushing, headache, diarrhea, nausea, vomiting, abdominal pain, and anaphylaxis-like symptoms.

The symptoms normally occur when the mast cells are triggered to produce substances that cause inflammation. People have different triggers, but the most common ones include [\[R\]](#):

- Alcohol
- Skin irritation
- Spicy foods
- Exercise
- Insect stings
- Certain medications

Complications of systemic mastocytosis can include:

- Blood disorders such as anemia or poor blood clotting.
- Peptic ulcer disease
- Reduced bone density
- Anaphylactic reactions
- Organ failure

Risk Factors and Management

Mastocytosis is often linked to mutations in the [KIT](#) gene, which plays a role in mast cell growth and development. These mutations are usually acquired during a person's life rather than being inherited.

Other, less important risk factors include:

- Family history: Rare cases may run in families, but most are sporadic.
- Age: Cutaneous mastocytosis is more common in children, while systemic mastocytosis typically affects adults.

Management of mastocytosis includes identifying and avoiding the triggers that can exacerbate the symptoms, such as alcohol, certain medications, and temperature extremes. The symptoms can be relieved with [\[R\]](#):

- Antihistamines and corticosteroids for inflammatory symptoms
- Medication to reduce stomach acid
- Epinephrine for severe allergic reactions
- Chemotherapy drugs in aggressive cases



MORE LIKELY

More likely to have excessive mast cells based on 14 genetic variants we looked at



Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
RMND1	rs111841153	GG
LRRN1	rs7641347	TT
GOSR2	rs149662397	TT
MRPL32	rs10486743	AA
GABRA1	rs6866984	GG
XYLT1	rs4300633	CC
SGF29	rs40836	AA
NPIPA8	rs9302534	TC
WAC	rs34127688	CC
HLA-DPA1	rs2213309	CC

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	Quercetin	250 mg	2	Rutin	
3	Avoid Refined Sugar		4	Avoid Exposure to Molds	
5	Turmeric		6	Dietary Omega-3 Fatty Acids	
7	Luteolin	100 mg	8	Low-Histamine Diet	
9	Maintain Optimal Vitamin D Levels	1000 iu	10	Avoid Exposure to Solvents	
11	Avoid Exposure to Heavy Metals		12	Vitamin C	2000 mg

1



Quercetin

IMPACT

2 / 5

EVIDENCE

2 / 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 may help relieve allergic reactions by stabilizing mast cells and reducing their production. This lowers the release of histamine and other inflammatory mediators [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

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* [\[R\]](#).

2



Rutin

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 500mg of rutin supplement daily, preferably with a meal to enhance absorption. Continue this supplementation regularly for at least 4 weeks to evaluate its benefits on your health, as effects may take some time to become noticeable.

Description

Rutin is a flavonoid found primarily in citrus fruits, buckwheat, and tea, and is known for its antioxidant and anti-inflammatory properties. It may support cardiovascular health and promote strong blood vessels.

How it helps

Rutin helps by inhibiting the release of histamines and other inflammatory mediators from mast cells, reducing allergic symptoms and inflammation.

3



Avoid Refined Sugar

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Eliminate foods and beverages high in refined sugars, such as sodas, candies, pastries, and white bread, from your diet. Replace them with natural sugars found in fruits and whole grains. Implement this change immediately and maintain it indefinitely for long-term health benefits.

Description

Reducing the consumption of refined sugar and high-sugar foods can help prevent dental problems, manage blood sugar levels, and support weight management.

How it helps

Refined sugars can lead to spikes in insulin and inflammation, potentially worsening mast cell-related symptoms.

4



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

Molds can release spores and toxins that potentially trigger mast cell activation and histamine release, leading to allergic-type responses.

5



Turmeric

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate 500-1000 mg of turmeric into your daily diet, either by adding ground turmeric spice to your food, such as in curries, soups, and smoothies, or by taking a dietary turmeric supplement. This should be done daily for at least 8 weeks to observe potential health benefits.

Description

Turmeric is a bright yellow spice derived from the root of the *Curcuma longa* plant. It contains curcumin, a potent antioxidant and anti-inflammatory compound. Turmeric is used for various health conditions, including reducing inflammation, alleviating joint pain, and supporting digestive health.

How it helps

Turmeric contains curcumin, known for its powerful anti-inflammatory properties. Curcumin can help stabilize mast cells, thereby reducing their excessive activation.

6



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 can help reduce inflammation, which may benefit those with excessive mast cells.

7



Luteolin

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take a luteolin supplement in the range of 100-200 mg per day, ideally with a meal to enhance absorption. It is recommended to continue this regimen daily for at least 8 to 12 weeks to evaluate its effectiveness.

TYPICAL STARTING DOSE

100 mg

Description

Luteolin is a flavonoid with potential anti-inflammatory and antioxidant properties, and it is found in various fruits and vegetables. Incorporating luteolin-rich foods into your diet may help reduce inflammation and support overall health.

How it helps

Luteolin has anti-inflammatory and antioxidant properties that can inhibit the activation and release of inflammatory mediators from mast cells.

8



Low-Histamine Diet

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Exclude high-histamine foods such as aged cheeses, smoked meats, fermented products like sauerkraut and kombucha, alcohol, and preserved foods. Instead, focus on fresh meats, freshly caught fish, eggs, gluten-free grains, and fresh fruits and vegetables. Implement this diet consistently on a daily basis for at least 4 weeks to observe any improvements in symptoms.

Description

A low-histamine diet can be helpful for individuals with histamine intolerance or allergies, reducing the consumption of high-histamine foods and alleviating symptoms like headaches, hives, and digestive issues.

Histamine is an important chemical. Among other roles, it helps your body [\[R\]](#) [\[R\]](#):

- Protect itself from foreign invaders, by activating parts of the immune system
- Stay awake, by signaling certain parts of the brain
- Digest food, by increasing stomach acid

Histamine can also enter the body through the foods that you eat. Histamine-rich foods include [\[R\]](#) [\[R\]](#):

- Some fish (e.g., mackerel, tuna)
- Fermented foods and drinks (e.g., alcohol, yogurt, sauerkraut, cheese)
- Processed meats (e.g., sausages)
- Some fruits and vegetables (e.g., avocados, tomatoes, eggplant, spinach)

The way the food gets prepared may also play a role. Frying and grilling food may increase histamine levels. Boiling may decrease them [\[R\]](#).

How it helps

A low-histamine diet can help manage symptoms as mast cells release histamine. This diet avoids high-histamine foods like aged cheeses, smoked meats, and fermented products.

9



Maintain Optimal Vitamin D Levels

IMPACT

0 / 5

EVIDENCE

0 / 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

Vitamin D can modulate the immune system, including the activity of mast cells, which can help in reducing inflammation and allergic responses.

10



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 contain volatile organic compounds that can act as irritants and trigger mast cell degranulation, potentially exacerbating symptoms.

11



Avoid Exposure to Heavy Metals

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

To avoid exposure to heavy metals, ensure you're not using cosmetic products with heavy metals, opt for organic foods to minimize pesticide exposure, and use filters for drinking water to remove possible contaminants. Check for lead-based paints in older homes and avoid cooking or storing food in uncoated metal containers. When possible, choose glass or BPA-free plastics instead.

Description

Heavy metals are elements naturally found in the environment. They are also used for agricultural, industrial, and medicinal purposes. Some can even be found in small amounts in your body [\[R, R\]](#).

Long-term exposure to high amounts of heavy metals can be harmful to your health [\[R, R\]](#).

Heavy metals that are most often linked to health problems include [\[R, R\]](#):

- Lead
- Cadmium
- Arsenic
- Chromium
- Mercury

How it helps

Heavy metals can activate mast cells, leading to their proliferation and triggering symptoms in conditions such as mastocytosis or mast cell activation syndrome.

12



Vitamin C

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 500-2000 mg of vitamin C supplement daily. It can be taken at any time of the day, with or without food, according to personal preference or tolerance.

TYPICAL STARTING DOSE

2000 mg

Description

[Vitamin C](#) is an essential nutrient. This means that our bodies can’t produce it on their own, so we have to get it from food or supplements [\[R\]](#).

Foods rich in Vitamin C include: [\[R\]](#)

- Citrus Fruits
- Peppers
- Brussel sprouts
- Kiwi
- Broccoli
- Tomato
- Cantaloupe
- Cauliflower
- Spinach

Vitamin C has antioxidant properties. It supports immunity, heart health, and wound healing [\[R\]](#), [\[R\]](#).

Vitamin C deficiency is called *scurvy*. In the past, many sailors suffered from it [\[R\]](#).

How it helps

Vitamin C stabilizes mast cells, which helps to prevent the release of histamines and alleviate allergy symptoms.

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.