

Hashimoto's Disease

Disease Report

REPORT CATEGORY —



Sample Client

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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

Hashimoto's disease is an autoimmune disorder that causes inflammation of the thyroid gland. The condition causes the immune system to mistakenly produce antibodies that attack the thyroid gland, causing inflammation and damage.

Hashimoto's disease is the most common cause of hypothyroidism, or an underactive thyroid. Symptoms may include [\[R\]](#):

- Fatigue/drowsiness
- Weight gain
- Cold intolerance
- Dry skin
- Constipation
- Altered menstruation
- Depression
- Problems with memory or concentration
- Swelling of the thyroid (goiter)
- A puffy face
- Brittle nails and hair loss

Risk Factors and Treatment

Key Takeaways:

- Up to **65%** of differences in people's chances of having Hashimoto's disease may be due to genetics.
- Risk factors include being female, middle age, pregnancy, other autoimmune diseases, and excessive iodine intake.
- It affects 1 to 2 percent of people in the U.S., occurring more often in women than men.
- Click the **Recommendations** tab for potential dietary and lifestyle changes, and **next steps** for relevant labs.

Risk factors for Hashimoto's disease include [\[R\]](#):

- Being female
- Middle age
- Pregnancy
- Excessive iodine intake
- Radiation exposure
- Having another autoimmune disease
- **Genetics**

Up to **65%** of differences in people's chances of having Hashimoto's disease may be due to genetics [\[R\]](#).

Hashimoto's disease is typically treated with medications to help normalize thyroid hormone levels. **It's important for people with Hashimoto's disease to work closely with their healthcare provider** to manage their condition and prevent complications.



TYPICAL LIKELIHOOD

Typical likelihood of Hashimoto's disease based on 85 genetic variants we looked at



Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
CTLA4	rs3087243	GG
HLA-DPA1	rs9277768	TC
IL6	rs1800795	GG
CTLA4	rs34636506	AA
/	rs9271365	GT
VAV3	rs7537605	AG
TRIB2	rs1534422	GG
PDE8B	rs1993945	TA
SH2B3	rs653178	CT
STAT4	rs11889341	CT
TPO	rs11675434	CT
CTLA4	rs231775	AG
CD69	rs2110451	AG
RPS26	rs11611029	CT
NIPSNAP1	rs757024	GC
SESN3	rs4409785	TC
ZNF668	rs57348955	AG
TNFRSF14	rs2843403	TC
PTPN22	rs2476601	GG
SLC25A27	rs2270450	CC
VAV3	rs17020139	GG
TRMO	rs7030280	CC
PTPN22	rs1230666	GG
BACH2	rs10944479	GG

GENE	SNP	GENOTYPE
TNF	rs1799964	TT
AP4B1	rs12730735	TT
TNF	rs1800629	GG
CTLA4	rs11571297	TT
BACH2	rs7754251	GG
BACH2	rs72928038	GG
LPP	rs13093110	CC
IL2RA	rs706779	TC
GXYLT1	rs4768412	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	Maintain Optimal Vitamin D Levels	1000 iu	2	Low-Level Laser Therapy (LLLT)	30 seconds
3	Dietary Iron	10 mg	4	Selenium Supplements	50 mcg
5	Balance Iodine Intake		6	Mediterranean Diet	
7	Inositol	2 g	8	Myo-inositol	4 g
9	Gluten-Free Diet		10	Aerobic Exercise (Cardio)	1 hour
11	Limit Dairy Intake		12	Cupping Therapy	15 minutes
13	Black Seed (Black Cumin)	1000 mg	14	Limit Soy Intake	
15	Autoimmune Protocol (AIP) Diet		16	Sleep for 7+ Hours	

1



Maintain Optimal Vitamin D Levels

IMPACT3 / 5

EVIDENCE3 / 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

People with Hashimoto’s disease tend to have lower vitamin D levels and a higher risk of vitamin D deficiency [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Vitamin D supplements may help balance their immune response. However, not all studies found this benefit [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Please note: *Experts recommend getting 600-800 IU of vitamin D per day. Medical bodies recommend against taking more than 4,000 IU per day. Vitamin D is not a replacement for thyroid medication. Talk to your doctor before using any supplements for thyroid issues* [\[R\]](#).



PERSONALIZED TO YOUR GENES

CTLA-4 codes for a protein that prevents autoimmunity by increasing Tregs [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Your rs3087243 genotype suppresses CTLA4 and correlates with Hashimoto's disease [\[R\]](#), [\[R\]](#).

Vitamin D and fish oil can boost CTLA4 expression and help with autoimmunity [\[R\]](#), [\[R\]](#).
TPO codes for thyroid peroxidase, a crucial enzyme for thyroid hormone production [\[R\]](#).

Your rs11675434 genotype correlates with anti-TPO antibodies and Hashimoto's [\[R\]](#), [\[R\]](#), [\[R\]](#).

Vitamin D may help reduce anti-TPO antibody levels in Hashimoto's patients [\[R\]](#), [\[R\]](#), [\[R\]](#).

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
CTLA4	rs3087243	GG	
GENE	SNP	GENOTYPE	EVIDENCE
TPO	rs11675434	CT	

2



Low-Level Laser Therapy (LLLT)

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Use a low-level laser therapy device, as directed by its manual or a healthcare professional, on the affected area. Generally, treatment involves applying the laser for a specified duration, often between 30 seconds to several minutes, per treatment area. Sessions can be conducted 2-3 times per week for a period of 4-12 weeks, depending on the condition being treated and the device used.

TYPICAL STARTING DOSE

30 seconds

Description

Low-level laser therapy (LLLT), also known as photobiomodulation, is a type of light therapy that uses low-intensity lasers to promote healing. It has been shown to be effective in treating a variety of conditions, including pain, inflammation, and wound healing.

How it helps

Studies suggest that low-level laser therapy is effective in improving thyroid function, reducing autoimmunity, and enhancing thyroid ultrasound features in patients with autoimmune thyroid disorders, particularly chronic autoimmune thyroiditis [\[R, R, R, R\]](#).

 PERSONALIZED TO YOUR GENES

CTLA-4 codes for a protein that prevents autoimmunity by increasing Tregs [\[R, R, R, R\]](#).

Your rs3087243 genotype suppresses CTLA4 and correlates with Hashimoto’s disease [\[R, R\]](#).

Sunlight exposure may increase Tregs and support the thyroid [\[R, R, R, R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
CTLA4	rs3087243	GG	

3



Dietary Iron

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Incorporate iron-rich foods into your daily meals, such as red meat, chicken, turkey, fish, beans, lentils, tofu, cooked spinach, and fortified cereals. Aim for at least 18 mg of iron per day for adult women and 8 mg per day for adult men. It's also beneficial to pair these foods with vitamin C-rich foods like oranges, strawberries, or bell peppers to enhance iron absorption.

TYPICAL STARTING DOSE

10 mg

Description

Iron (Fe) is an essential mineral. It helps make [hemoglobin](#), a protein that carries oxygen to cells. In this way, iron **increases energy** and supports **brain and immune system function** [\[R, R, R\]](#).

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

- Oysters
- White beans
- Beef
- Chocolate
- Spinach
- Fortified cereals

Women should be getting **8-18 mg** of iron per day, while **men** should be getting **8 mg** [\[R\]](#).

Groups at risk of iron deficiency include [\[R\]](#):

- Menstruating women
- Children
- Vegetarians
- Routine blood donors

How it helps

There is a two-way relationship between iron and thyroid hormones.

Iron plays a role in the metabolism of thyroid hormones and may help the body use iodine [\[R, R, R\]](#).

In turn, thyroid hormones help the body absorb iron [\[R, R\]](#).

Low iron levels are linked to lower thyroid hormone levels. However, one study didn't find this link [\[R, R, R\]](#).

Moreover, patients with Hashimoto's disease often suffer from **autoimmune stomach inflammation**. This may **reduce their ability to absorb iron** and further lower its levels [\[R, R, R\]](#).

In patients who lack iron, supplementation may help improve Hashimoto's symptoms and thyroid function [\[R, R\]](#).

Iron supplementation may also improve the body's response to iodine [\[R, R, R, R\]](#).

However, **iron may reduce your body's ability to absorb a drug for underactive thyroid (levothyroxine)**. For this reason, some experts recommend that Hashimoto's patients take the drug at least 4 hours before iron supplements [\[R\]](#).

Please note: *A high dose of iron can be toxic. If you are not deficient, it is best to get iron from food. Iron is not a replacement for thyroid medication. Talk to your doctor before taking iron or any supplements for thyroid issues* [\[R\]](#).

4



Selenium Supplements

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Take 50 mcg of selenium supplements once daily, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

50 mcg

Description

Selenium is a trace mineral found in Brazil nuts and many other foods as well as supplements. It is an essential nutrient that plays a crucial role in maintaining the body's antioxidant defenses and supporting thyroid function.

[Selenium](#) supports [\[R\]](#):

- Reproduction
- Thyroid function
- DNA production
- Immune response

Adults should be getting **55 micrograms** of selenium per day. Selenium supplements are available for people who can't meet their needs with a balanced diet [\[R\]](#).

How it helps

People with underactive thyroid may have lower selenium levels. Healthy levels may support normal thyroid function and reduce the risk of thyroid problems [\[R, R, R, R\]](#).

The following selenium supplements may help with Hashimoto’s disease [\[R, R, R, R, R\]](#):

- Selenomethionine (80-200 µg/day for 3-12 months)
- Sodium-selenite (200 µg/day for 3-12 months)

However, not all studies found a clear benefit [\[R, R, R, R\]](#).

Some experts recommend against supplementing with selenium [\[R\]](#).

Please note: *High intake and levels of selenium are linked to type 2 diabetes. Selenium is not a replacement for thyroid medication. Talk to your doctor before taking selenium or any supplements for thyroid issues* [\[R\]](#).

 PERSONALIZED TO YOUR GENES

TPO codes for thyroid peroxidase, a crucial enzyme for thyroid hormone production [\[R\]](#).

Your rs11675434 genotype correlates with anti-TPO antibodies and Hashimoto’s [\[R, R, R\]](#).

Selenium may reduce anti-TPO antibodies and help with Hashimoto’s disease [\[R, R, R, R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
TPO	rs11675434	CT	

5



Balance Iodine Intake

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

To balance iodine intake, consume foods rich in iodine such as fish, dairy, and eggs, aiming for about 150 micrograms per day for adults. Consider using iodized salt in cooking, but be mindful not to exceed the daily limit. Regularly assess iodine levels, especially if you are pregnant, lactating, or have thyroid issues.

Description

Iodine intake is essential for thyroid function and is obtained through iodized salt and foods like seafood and dairy products. Balanced iodine intake is necessary to prevent thyroid disorders.

[Iodine](#) is an element that helps make thyroid hormones. It’s important for [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Thyroid function
- Healthy pregnancy
- Cognitive function

Iodine can be found in foods like [\[R\]](#):

- Seaweed
- Enriched bread
- Fish (cod)
- Dairy
- Iodized salt

Adults should be getting **150 micrograms** of iodine per day. People who are deficient can take iodine as a supplement. However, most people in the US and other developed countries don’t need to take extra iodine. Excess iodine can be harmful [\[R\]](#), [\[R\]](#).

How it helps

Iodine helps make thyroid hormones [\[R\]](#).

Low iodine levels are linked to an underactive thyroid. Low iodine intake is the most common cause of thyroid deficiency worldwide, but it’s very rare in developed countries [\[R\]](#), [\[R\]](#), [\[R\]](#).

Getting enough iodine from food or supplements may support normal thyroid function. However, a sudden increase in iodine intake may be harmful to people who are iodine-deficient [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Too much iodine is also linked to an underactive thyroid. The human body can normally adapt to high levels of iodine. This adaptation prevents excess thyroid hormones from being made. In some people, the thyroid can remain underactive when iodine intake drops [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

In line with this, an iodine-restricted diet may improve thyroid function in some people with Hashimoto’s disease [\[R\]](#).

It is thus important to balance iodine intake [\[R\]](#), [\[R\]](#), [\[R\]](#).

Experts don’t recommend iodine supplements unless iodine deficiency is confirmed. Make sure to consult your doctor before supplementing [\[R\]](#), [\[R\]](#).

6



Mediterranean Diet

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Incorporate a variety of primarily plant-based foods, such as fruits, vegetables, whole grains, nuts, and legumes, into every meal. Choose healthy fats, like olive oil, over saturated fats and consume fish and poultry at least twice a week. Limit red meat to a few times a month and include a moderate amount of dairy products. Opt for water and red wine in moderation as your beverages.

Description

The [Mediterranean diet](#) is based on the traditional cuisine from the Mediterranean regions. It moderates the intake of red meat and dairy, while being rich in fruits and vegetables, whole grains, and healthy fats ([olive oil](#)).

The [Mediterranean diet](#) focuses on traditional cuisine from the Mediterranean regions. It’s rich in [\[R\]](#):

- [Olive oil](#)
- Fruits and vegetables
- Whole grains
- Nuts and seeds
- Fish

This type of diet may **reduce inflammation and protect the brain and heart** [\[R, R, R, R\]](#).

Limited intake of animal products, saturated fat, and refined sugar likely contribute to the health benefits of the Mediterranean diet [\[R\]](#).

How it helps

Eating a Mediterranean diet may reduce the risk of Hashimoto's disease [\[R\]](#).

In people with this condition adopting a Mediterranean diet may increase free T3 levels while decreasing anti-TPO and anti-Tg levels. A gluten-free, Mediterranean diet may be more effective. Combining this diet with increased physical activity may improve body composition [\[R, R\]](#).

The Mediterranean diet, high in fruits, vegetables, and healthy fats, can help manage inflammation and support overall health for those with Hashimoto's disease.

7



Inositol

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Take inositol as a daily supplement, usually available in powder or capsule form. The typical dosage ranges from 2 grams to 18 grams per day, divided into smaller doses taken with meals and water to aid absorption. It's important to start with a lower dose and gradually increase to avoid digestive side effects.

TYPICAL STARTING DOSE

2 g

Description

Inositol is a naturally occurring compound that plays a role in cell signaling and neurotransmitter function. It has been studied for its potential in promoting mental health and managing conditions like anxiety and depression when used as a supplement under the guidance of a healthcare professional.

Inositol is a type of sugar that our bodies need to function. It was considered a vitamin (vitamin B8) until it was discovered that our bodies can make it from another common sugar, glucose [\[R\]](#).

[Myo-inositol](#) is the most common form of inositol. It plays a role in [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Heart health
- Normal blood sugar levels
- Mental health
- Cognitive function
- Reproductive health

Myo-inositol can convert to [D-chiro-inositol](#) in the body. These two forms of inositol are often combined in supplements. People use them to improve blood sugar control and PCOS [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

Myo-inositol has been studied for its ability to improve the function of the thyroid gland, which can be beneficial for individuals with Hashimoto's disease.

Preliminary studies suggest that myo-inositol, especially when combined with selenium, may help restore normal thyroid function and prevent progression to hypothyroidism in patients with Hashimoto's disease [\[R\]](#), [\[R\]](#), [\[R\]](#).

8



Myo-inositol

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take 2 grams of myo-inositol supplement orally twice a day, preferably with meals to enhance absorption. This regimen should be followed daily for at least 6 months to observe significant benefits.

TYPICAL STARTING DOSE

4 g

Description

Myo-inositol is a naturally occurring compound that plays a role in various cellular functions. It is used in dietary supplements and is believed to have potential benefits for mental health, hormone regulation, and insulin sensitivity.

Inositol is a type of sugar that our bodies need to function. It was considered a vitamin (vitamin B8) until it was discovered that our bodies can make it from another common sugar, glucose [R].

[Myo-inositol](#) is the most common form of inositol. It plays a role in [R, R, R, R]:

- Heart health
- Normal blood sugar levels
- Mental health
- Cognitive function
- Reproductive health

Myo-inositol can convert to [D-chiro-inositol](#) in the body. These two forms of inositol are often combined in supplements. People use them to improve blood sugar control and PCOS [R, R, R].

How it helps

Myo-inositol has been studied for its ability to improve the function of the thyroid gland, which can be beneficial for individuals with Hashimoto's disease.

Preliminary studies suggest that myo-inositol, especially when combined with selenium, may help restore normal thyroid function and prevent progression to hypothyroidism in patients with Hashimoto's disease [R, R, R].

9



Gluten-Free Diet

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Remove all foods containing wheat, barley, and rye from your diet. This includes obvious sources like bread and pasta, as well as hidden sources in sauces, soups, and processed foods. Check labels for gluten-free certification, and aim to maintain this diet consistently, as even small amounts of gluten can cause symptoms to recur in sensitive individuals.

Description

A gluten-free diet is essential for individuals with celiac disease or gluten sensitivity. It helps prevent digestive issues and promotes overall health by avoiding foods containing gluten, a protein found in wheat, barley, and rye.

Gluten is a protein found in wheat and some other grains. **People with celiac disease have to follow a gluten-free diet to prevent gut damage.** A gluten-free diet eliminates all foods containing [\[R\]](#), [\[R\]](#):

- Wheat
- Barley
- Rye
- Malt
- [Brewer’s yeast](#)

How it helps

There seems to be a link between **celiac disease** and Hashimoto’s disease. People with one disorder may be at higher risk of the other [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

A gluten-free diet may improve thyroid function in some people with Hashimoto’s disease. However, some studies didn’t find these benefits. Following a gluten-free diet may even reduce the beneficial effects of vitamin D supplementation on thyroid function [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

 PERSONALIZED TO YOUR GENES

HLA-DRB1 codes for a receptor that stimulates antibody production [\[R\]](#), [\[R\]](#), [\[R\]](#).

Your rs2516049 genotype may increase gene expression, and has been correlated with Hashimoto’s disease [\[R\]](#), [\[R\]](#), [\[R\]](#).

In sensitive people, gluten may worsen the impact of HLA variants on autoimmunity [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Your [CTLA4](#) gene variant is linked to gluten intolerance and autoimmune thyroid disease [\[R\]](#), [\[R\]](#). If you are gluten intolerant, consider a gluten-free diet to potentially support thyroid health.

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
HLA-DRB1	rs2516049	CT	
CTLA4	rs3087243	GG	

10

Aerobic Exercise (Cardio)

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Engage in at least 150 minutes of moderate-intensity aerobic exercise or 75 minutes of vigorous-intensity activity each week. Distribute this time over at least 3 days per week, avoiding consecutive days of vigorous exercise to allow for recovery.

TYPICAL STARTING DOSE

1 hour

Description

Engaging in regular aerobic exercise, such as running, swimming, or cycling, offers numerous health benefits, including improved cardiovascular fitness, weight management, and mood enhancement. It supports overall physical and mental well-being while reducing the risk of chronic diseases.

Cardio, short for cardiovascular exercise, is any type of physical activity that temporarily increases your heart rate. Examples include **running, cycling, swimming, and brisk walking**.

Regular cardio exercise has many benefits for your overall health. It can help lower your risk of heart disease and diabetes, support weight loss, and improve your mood and energy levels. To get the most out of cardio, try to do it for at **least 30 minutes, 3-5 times a week**.

Interval training is a type of cardio that combines periods of high-intensity training with brief rest periods.

How it helps

Exercise may help increase levels of thyroid hormones. However, some studies didn’t note this effect [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Exercise may improve thyroid health by:

- Supporting a healthy weight [\[R\]](#), [\[R\]](#), [\[R\]](#)
- Reducing insulin resistance [\[R\]](#)

Please note: Exhaustive exercise may decrease thyroid hormone. If you have thyroid issues, take care not to over-exercise and always speak with your doctor before starting a new exercise program [\[R\]](#), [\[R\]](#)

11



Limit Dairy Intake

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Reduce your consumption of dairy products, such as milk, cheese, yogurt, and butter, to no more than one serving per day. A serving is equivalent to 1 cup (240 ml) of milk, 1 cup of yogurt, 1.5 ounces (42 grams) of natural cheese, or 2 ounces (56 grams) of processed cheese.

Description

Limiting dairy intake may benefit individuals who are lactose intolerant or have dairy allergies, as it helps prevent digestive discomfort and symptoms like bloating and diarrhea. Exploring dairy-free alternatives supports overall gastrointestinal comfort.

Dairy products are made from milk. They include [\[R\]](#):

- Cheese
- Yogurt
- Kefir
- Butter
- Cream

Dairy products contain high levels of [calcium](#). Calcium helps build strong bones. However, eating a lot of dairy products is linked to acne and certain health conditions like Parkinson's disease [\[R, R, R, R\]](#).

How it helps

Lactose intolerance is common in people with Hashimoto’s disease. However, not all studies found this association [\[R, R, R\]](#).

People with lactose intolerance may have trouble absorbing prescribed thyroid medication. This may impair their ability to achieve normal thyroid function [\[R\]](#).

Limiting dairy intake may help improve thyroid activity in these people. Some strategies that may help include [\[R, R\]](#):

- Buying lactose-reduced or lactose-free milk and dairy products
- Choosing dairy products with lower lactose content such as hard cheeses and fermented products
- Consuming smaller servings of milk and dairy products
- Consuming milk and dairy products with meals

12



Cupping Therapy

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

To practice cupping therapy as part of your lifestyle, schedule sessions with a qualified therapist once or twice a month to address specific concerns or for general wellness. Each session usually lasts between 5 to 15 minutes. Consistent treatment over several months may yield the best results.

TYPICAL STARTING DOSE

15 minutes

Description

Cupping therapy is an alternative therapy that involves placing cups on the skin to create suction. Some believe it may help with pain relief and muscle tension.

How it helps

Cupping therapy is unable to specifically treat Hashimoto's disease, because it doesn't address the underlying problem of the immune system attacking the thyroid. However, it may provide temporary relief from symptoms like pain and tension.

In a non-placebo-controlled trial of 26 patients with Hashimoto’s, receiving 3 wet cupping sessions at 3-week intervals decreased anti-TPO and anti-TG levels. When combined with thyroxine supplementation, cupping decreased anti-TPO, anti-TG, TSH, prolactin, and ESR [\[R\]](#).

13



Black Seed (Black Cumin)

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take 1000 mg of black seed (black cumin) supplement daily, preferably split into two doses of 500 mg each, one in the morning and one in the evening.

TYPICAL STARTING DOSE
1000 mg

Description

Black seed, also known as black cumin or *Nigella sativa*, has been used for its potential health benefits in traditional medicine. It is believed to have anti-inflammatory, antioxidant, and immune-boosting properties.

[Black seed](#) (black cumin) and its oil are used in cooking and traditional medicine [\[R\]](#).

People use black seed for [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Asthma
- Allergies
- High blood sugar
- High blood pressure
- Joint pain

How it helps

According to a single study, **powdered black seed (2 g/day for 8 weeks)** may help increase thyroid hormones in people with Hashimoto’s disease [\[R\]](#).

Black seed may support thyroid function by [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Reducing oxidative stress
- Supporting a healthy weight

Please note: *Black seed is not a replacement for thyroid medication. Talk to your doctor before using any supplements for thyroid issues.*

 PERSONALIZED TO YOUR GENES

HLA-DRB1 codes for a receptor that stimulates antibody production [\[R\]](#), [\[R\]](#), [\[R\]](#).

Your rs2516049 genotype may increase gene expression, and has been correlated with Hashimoto’s disease [\[R\]](#), [\[R\]](#), [\[R\]](#).

Black cumin may suppress HLA-DRB1 and help with Hashimoto’s disease [\[R\]](#), [\[R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
HLA-DRB1	rs2516049	CT	

14



Limit Soy Intake

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Reduce your consumption of soy and soy-based products to no more than 1-2 servings per week. This includes foods like tofu, soy milk, soy sauce, and edamame. Ensure to read labels on packaged foods to check for hidden soy ingredients.

Description

For individuals with specific allergies or sensitivities, limiting soy intake can help prevent uncomfortable symptoms and digestive issues.

Soy is a common food in many cuisines around the world, especially Asian cuisines [\[R\]](#).

It’s a great source of [\[R\]](#), [\[R\]](#):

- Plant-based protein
- Fiber
- Omega-3 fats
- Antioxidants (isoflavones)

However, eating too much soy over a long period of time is linked to uterine fibroids [\[R\]](#).

How it helps

Soy can interfere with thyroid hormone absorption and function, so limiting soy intake might be beneficial for Hashimoto's disease management.

15



Autoimmune Protocol (AIP) Diet

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Eliminate grains, legumes, nuts, seeds, nightshades, dairy, eggs, coffee, alcohol, refined sugars, refined oils, food additives, and processed foods from your diet for a minimum of 30 days. After this elimination period, gradually reintroduce foods one at a time, every 5-7 days, to identify any that trigger symptoms.

Description

The Autoimmune Protocol (AIP) diet is a dietary approach designed to help individuals with autoimmune diseases identify and eliminate foods that may trigger inflammation and autoimmune responses. It focuses on nutrient-dense, anti-inflammatory foods while avoiding potential allergens and irritants.

How it helps

A 10-week online health coaching program using an elimination diet (AIP) resulted in improved quality of life, reduced clinical symptoms, and decreased inflammation in an uncontrolled trial of 17 women with Hashimoto's thyroiditis. However, thyroid function remained unchanged [\[R\]](#).

The AIP diet removes foods that may cause inflammation in the body and supports gut health, potentially reducing Hashimoto's disease symptoms.

16



Sleep for 7+ Hours

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Ensure you allocate enough time in your schedule to achieve a minimum of 7 hours of sleep each night. This might involve going to bed earlier or adjusting your evening routine to promote relaxation and make it easier to fall asleep.

Description

Optimizing sleep involves adopting healthy sleep habits and creating a sleep-conducive environment to ensure restorative and sufficient sleep duration. It supports cognitive function, mood stability, and overall physical health. Most experts recommend getting **at least 7 hours of good-quality sleep each night**.

[Sleep](#) supports your body and mind [\[R, R\]](#). More precisely, sleep helps:

- Support brain health [\[R, R\]](#)
- Maintain a healthy weight and appetite [\[R, R, R\]](#)
- Regulate blood pressure [\[R, R\]](#)
- Balance blood sugar [\[R, R\]](#)

Ways to sleep better include [\[R\]](#):

- Reducing your bright light exposure (screen time) in the evenings
- Sticking to a regular sleep schedule
- Avoiding hunger or large meals before bed
- Avoiding nicotine, caffeine, and alcohol before bed
- Maintaining a sleep area that’s cool, dark, and quiet

How it helps

Good sleep quality can improve stress response and immune regulation, which are important for managing autoimmune conditions like Hashimoto's disease.

Next Steps

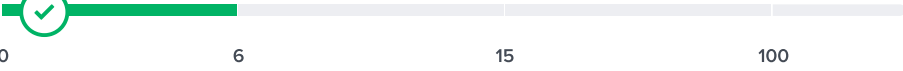
Remember, your genes only tell one important part of your health story!

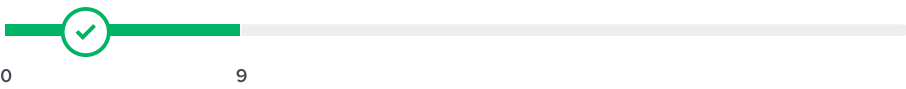
Now that you've seen your DNA-based results for this health topic, let's take a look at other contributing factors.

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.

	T4 Free (FT4)	1.26 ng/dL		9 Nov 2025
	TSH	2.76 mIU/mL		9 Nov 2025
	ESR	1 mm/hr		9 Nov 2025
	Zinc	17.12 umol/L		9 Nov 2025
	T4 (Thyroxine), Total	7.27 mcg/dL		9 Nov 2025
	Vitamin D, 25-Hydroxy, Total	58.59 ng/mL		9 Nov 2025
	T3, Free (FT3)	3.34 pg/mL		9 Nov 2025
	Thyroglobulin Antibodies	49 IU/mL		9 Nov 2025
	T3 Total	0.95 ng/mL		9 Nov 2025

	Thyroid Peroxidase Antibodies (TPO)	3.03 IU/mL		9 Nov 2025
	Iron	228 mcg/dL		9 Nov 2025

Your Lifestyle Assessments

Ever heard of the term Nature vs. Nurture?

The thing is, both DNA and environment play a role in determining your health risks. The following assessments shows how much of an impact your lifestyle, environment and medical history are having on your health risks.

✓

LIFESTYLE

You have a **reduced risk** of hashimoto's disease based on the answers you provided.

Your Lifestyle Risk

Low

Decreased

Average

Increased

High

Factors impacting your risk:

Have you ever been diagnosed with multiple sclerosis?	Decreasing Risk ✓
No	
Have you been diagnosed with psoriasis?	Decreasing Risk ✓
No	
Have you ever been diagnosed with rheumatoid arthritis (autoimmune joint inflammation)?	Decreasing Risk ✓
No	
Have you ever been diagnosed with lupus?	Decreasing Risk ✓
No	
Have you ever been diagnosed with type 1 diabetes?	Decreasing Risk ✓
No	
Do you have a parent or sibling who has been diagnosed with Hashimoto's disease (autoimmune underactive thyroid)?	Decreasing Risk ✓
No	
Your BMI:	Decreasing Risk ✓
22.77	
What is your sex?	Decreasing Risk ✓
Male	
What is your height?	No impact -
165 cm	
What is your current weight?	No impact -
62.0 kg	