

Parasites

DNA Health Report

REPORT CATEGORY —



IMMUNITY &
INFECTIONS

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

Parasites are organisms that live on or in a host organism and get their food at the expense of their host. There are many different kinds of parasites, including protozoa, which are tiny, one-celled creatures that typically live in the intestines, blood, or tissue; helminths, which are larger, multicellular organisms commonly referred to as worms that can live inside the gastrointestinal tract or other organs; and ectoparasites such as ticks, fleas, lice, and mites that attach or burrow into the skin and remain there for long periods.

Parasitic infections can cause a variety of symptoms depending on the type of parasite and the body system involved. Symptoms may range from mild discomfort to severe, life-threatening illness, and are often related to the digestive system but can also affect other areas such as the muscular system, skin, and even the brain.

Complications and Treatment

The impact of parasitic infections on the body can be considerable, often leading to nutrient deficiencies, weakness, and compromised immune function. Certain parasites, like tapeworms and hookworms, can directly absorb nutrients from a person’s diet, while others cause inflammation or tissue damage that disrupts normal absorption and digestion. Additionally, some parasites are capable of evading the immune system.

This enables them to inhabit a host for long periods, causing chronic conditions that can persist for years without treatment. Diagnosis typically involves stool tests, blood tests, or tissue biopsies, and treatment options can include a range of antiparasitic medications. Preventative measures like good hygiene, safe food practices, the use of protective clothing, and vector control are important strategies to reduce the risk of infection.



LESS LIKELY

Less likely to have a parasitic infection based on 15,323 genetic variants we looked at



PERCENTILE



Your risk is greater than 9% of the population and lower than 91% of the population.

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	Garlic Supplement	200 mg	2	Papaya	500 mg
3	Saccharomyces Boulardii	10 billion CFU	4	Lactoferrin	100 mg
5	Pomegranate		6	Avoid Raw Seafood	
7	Pumpkin Seeds		8	Oregano Oil	1 drop
9	Black walnuts		10	Wormwood	200 mg
11	Topical Coconut Oil		12	Sweet Wormwood	100 mg
13	Topical Tea Tree Oil		14	Artemisia Extract	200 mg
15	Pumpkin Seed Oil		16	Coconut	
17	Regular Hand Washing		18	Grapefruit Pectin	5 g

1



Garlic Supplement

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take a garlic supplement, such as a garlic extract or aged garlic supplement, in a dosage of 600-1,200 mg per day, divided into separate doses. This should be taken with meals to minimize digestive issues. Continue daily for at least 8-12 weeks to evaluate its effects on health markers like blood pressure or cholesterol.

TYPICAL STARTING DOSE

200 mg

Description

Garlic is a pungent herb known for its potential health benefits, including cardiovascular support and immune system enhancement. It contains bioactive compounds that may help reduce the risk of chronic diseases and support overall well-being.

[Garlic](#) is a delicious aromatic herb that adds flavor to your food. But did you know that garlic has been a part of traditional medicine for thousands of years? **From ancient Egypt and Rome to China, people have praised garlic for its many health benefits.** Today, we can trace many of those benefits to sulfur-rich compounds found in garlic. People take garlic to help control their blood pressure and cholesterol [\[R\]](#).

Please note: *Garlic can interact with blood thinners (like aspirin, Plavix, Coumadin). If you are on blood thinners, consult your doctor before supplementing with garlic [\[R\]](#).*

How it helps

Supplementation with garlic (5 mL crude extract in 100 mL water, 2x/day, or commercial 0.6 mg capsules, 2 capsules 2x/day for 3 days) shortened treatment duration in a non-placebo-controlled trial of 10 children infected with *hymenolepiasis nana* and 26 children infected with giardia [\[R\]](#).

However, adding garlic powder to nitazoxanide failed to improve healing rate in a non-placebo-controlled trial of 390 children [\[R\]](#).

Garlic supplements contain compounds with antiparasitic activity against giardia such as allicin, allyl alcohol, and allyl mercaptan [\[R, R, R\]](#).

Please note: *Garlic can interact with blood thinners (such as aspirin, Plavix, and Coumadin). In addition, garlic can irritate the stomach in some people. Talk to your doctor before taking garlic extract [\[R, R\]](#).*

2



Papaya

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 500 mg of papaya extract daily for at least one month to observe potential health benefits. If using powdered form, it can be mixed with water or juice for easier consumption.

TYPICAL STARTING DOSE
500 mg

Description

Papaya is a tropical fruit native to Central America and Mexico that is rich in vitamins A and C, folate, and dietary fiber. It has a long history in traditional medicines as a digestive aid and promoting skin health. Papaya's extract, papain, is used as a dietary supplement for digestive support.

Papaya is a tropical orange fruit. It originates from Central America, but today it’s most widely grown in India.

People enjoy the great taste of papaya. It’s also rich in healthy nutrients that may support the immune system.

How it helps

In 2 placebo-controlled trials of 386 asymptomatic children with stool microscopic evidence of intestinal parasites consuming an elixir with papaya seed (20 mL/day for 7 days) or porridge fortified with papaya seed (300 mg/day for 2 months) reduced stool parasite burden [\[R, R\]](#).

3



Saccharomyces Boulardii

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take Saccharomyces boulardii as an oral supplement, typically available in capsule or powder form, twice daily with a glass of water. Continue this regimen for 4-8 weeks, or as directed by a healthcare provider.

TYPICAL STARTING DOSE
10 billion CFU

Description

Saccharomyces boulardii is a beneficial yeast often used as a probiotic supplement to support digestive health and prevent or alleviate symptoms of diarrhea, including those caused by antibiotics or infections.

How it helps

Saccharomyces boulardii is a yeast that acts as a probiotic. It can help fight off and prevent various parasitical infections in the gut. By maintaining and restoring the natural flora in the gastrointestinal tract, it helps create an environment that is inhospitable to parasitic infections.

4



Lactoferrin

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 100-200 mg of lactoferrin supplement per day, preferably on an empty stomach to enhance its absorption. Continue this regimen daily for 8 to 12 weeks to observe beneficial effects.

TYPICAL STARTING DOSE

100 mg

Description

Lactoferrin is a protein found in milk and other bodily fluids that has been studied for its potential health benefits, including immune system support and antimicrobial properties. It plays a role in promoting gut health.

Lactoferrin is a protein found in milk. It can bind to iron and travel all around the body [\[R\]](#).

Lactoferrin may help support [\[R\]](#) [\[R\]](#):

- Immunity
- Iron status

How it helps

In a randomized, double-blind, placebo-controlled trial on children, supplementation with bovine lactoferrin showed no significant difference in overall diarrhea rates but led to lower prevalence of Giardia colonization and better growth compared to placebo [\[R\]](#).

5



Pomegranate

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate pomegranate into your diet by consuming fresh pomegranate seeds, drinking pure pomegranate juice, or adding pomegranate extract to smoothies or yogurts. Aim for at least one serving per day, which could be about half a cup of seeds or a glass (8 ounces) of juice, to gain its health benefits.

Description

Pomegranate is a fruit native to regions of the Middle East and Mediterranean. It is rich in antioxidants and nutrients such as vitamin C, vitamin K, and dietary fiber. It contains punicalagins, anthocyanins, and ellagic acid, which give it anti-inflammatory effects and potential heart health benefits.

[Pomegranates](#) are red fruits that contain seeds covered by edible sweet coats. They are rich in antioxidants [\[R, R\]](#).

Pomegranate may reduce inflammation and support heart health. People use pomegranate seed oil and peel in cosmetics and traditional medicine [\[R, R\]](#).

How it helps

Parts of the pomegranate fruit and tree have been found to contain antiparasitic properties, particularly against tapeworms. Consuming pomegranate juice or extracts can aid in expelling these parasites from the body.

6



Avoid Raw Seafood

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Do not consume seafood that is uncooked or undercooked, including sushi, sashimi, ceviche, and raw oysters. Always ensure that seafood is cooked to an internal temperature of 145 degrees Fahrenheit before eating. Practice this avoidance consistently to reduce the risk of foodborne illnesses.

Description

Avoiding the consumption of raw seafood is recommended to reduce the risk of foodborne illnesses, including bacterial and parasitic infections such as salmonella.

Seafood is a healthy source of protein and essential nutrients such as omega-3 fatty acids and vitamins. Fish and shellfish are also low in saturated fat and cholesterol, making them a good choice for a balanced diet.

However, eating raw seafood can be dangerous as it may contain toxins and harmful germs that can cause food poisoning. Eating raw fish or shellfish, such as sushi or oysters, can increase the risk of food-borne illnesses such as **anisakiasis and salmonella infection**.

Make sure to cook seafood properly to reduce the risk of food poisoning.

How it helps

Eating raw or undercooked seafood can expose you to parasites like tapeworms or roundworms. These parasites can cause diseases such as anisakiasis, which can have symptoms ranging from mild digestive discomfort to severe allergic reactions.

7



Pumpkin Seeds

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate a handful of pumpkin seeds (about 28 grams) into your diet daily. You can add them to your breakfast cereal, sprinkle them over a salad, blend them into smoothie bowls, or simply eat them as a snack. This practice can be continued indefinitely as part of a healthy dietary pattern.

Description

Pumpkin seeds, also known as pepitas, are the edible seeds of the pumpkin.They are rich in protein, antioxidants, iron, zinc, magnesium, manganese, and phosphorus. The compounds in pumpkin seeds may benefit heart health and immune function.

Pumpkin seeds are rich in arginine, protein, antioxidants, iron, zinc, magnesium, manganese, and phosphorus. Pumpkin seeds contain 54.18 mg of arginine per gram.

How it helps

Pumpkin seeds are rich in cucurbitacin, a compound that has been shown to have anti-parasitic activity by paralyzing worms so they can be expelled from the body. They are particularly used against tapeworms and roundworms.

8



Oregano Oil

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take oregano oil as a supplement by diluting it with a carrier oil such as olive oil; mix 1 drop of oregano oil with at least 1 teaspoon of a carrier oil. You can take this mixture orally 1-2 times daily for up to 2 weeks. Always start with a small dosage to check for any adverse reactions.

TYPICAL STARTING DOSE

1 drop

Description

Oregano oil (*Origanum vulgare*) is an essential oil extracted from the leaves and flowers of the oregano plant. Its active components include carvacrol, thymol, rosmarinic acid, and terpenoids. It has been used in traditional medicines for centuries for immune and digestive health.

How it helps

Oregano oil is known for its antiparasitic, antiviral, and antibacterial properties. These properties make it effective in combating various parasites, including those that cause gastrointestinal issues.

9



Black walnuts

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate black walnuts into your diet by adding a small handful (about 1 ounce or 28 grams) to your daily meals, such as in salads, oatmeal, or baking recipes. Do this regularly as part of your daily diet.

Description

Black walnuts are a nutrient-dense nut variety that offers healthy fats, protein, and essential minerals. They can be part of a nutritious diet and provide potential benefits for brain health and overall nutrition.

Black walnuts are a good source of ALA, as well as iron and potassium. A 1-ounce serving contains .76 g of ALA.

How it helps

Black walnuts contain juglone, a natural compound that has been found to have anti-parasitic effects, potentially helping to expel certain types of intestinal parasites.

10



Wormwood

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take a wormwood supplement capsule, typically ranging from 200 to 500 mg, once daily before a meal. The exact dosage may depend on the specific condition being treated and the product's concentration, so consult the supplement's packaging or a healthcare professional for guidance. Use should generally not exceed four weeks consecutively without a break or medical advice.

TYPICAL STARTING DOSE
200 mg

Description

Wormwood is an herb used in traditional medicine for its potential digestive benefits and as an ingredient in herbal liqueurs. It may aid in relieving digestive discomfort and expelling intestinal parasites. The main compound of interest is thujone.

How it helps

Wormwood is a herb that has been used for centuries in the treatment of parasitic infections. Its active component, thujone, is effective against a wide range of parasites, including those that cause intestinal and systemic infections. Wormwood is often used in combination with other herbs to enhance its parasiticidal effects.

11



Topical Coconut Oil

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Apply a small amount of coconut oil directly to the skin area you wish to treat, gently massaging it in until absorbed. Do this process 1-2 times daily, preferably after showering to help retain moisture. The duration of use depends on the condition being treated but generally ranges from a few days to ongoing as needed for skin hydration and protection.

Description

Coconut oil is a natural plant-derived topical application obtained from coconuts. It is used for its moisturizing and antimicrobial properties, making it suitable for skincare, haircare, and as a general moisturizer.

How it helps

Coconut oil possesses antimicrobial and antiparasitic properties, making it beneficial for treating skin infections caused by parasites. The lauric acid found in coconut oil is especially effective against certain parasites and can aid in soothing the skin and reducing inflammation.

How to implement

TYPICAL STARTING DOSE
100 mg

Description

Sweet wormwood (*Artemisia annua*) is a herb used in traditional Chinese medicine. It may help combat infections by parasites, viruses, fungi, and bacteria. In line with this, people have used sweet wormwood for [R, R]:

- Malaria
- Tuberculosis
- Lice
- Scabies
- Dysentery

Artemisinin, the most important anti-malarial drug, was originally isolated from sweet wormwood [R].

How it helps

Sweet Wormwood (*Artemisia annua*) has been used in traditional medicine for the treatment of malaria and other parasitic infections. Artesunate, a compound derived from Sweet Wormwood, is effective against a wide range of parasites, particularly those causing malaria.

13

Topical Tea Tree Oil

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Apply a few drops of 100% tea tree oil to a cotton swab or ball and gently dab onto the affected area of the skin. Do this 1-2 times daily until improvements are noticeable, usually for a period of 1-4 weeks. Avoid applying tea tree oil to large areas of the skin and test on a small patch of skin first to ensure no allergic reaction occurs.

Description

Tea tree oil is used topically for its antimicrobial and antifungal properties, commonly applied to treat skin conditions like acne, fungal infections, and insect bites. Its main chemical compound of interest is terpinen-4-ol, and it is sourced from the leaves of the tea tree, *Melaleuca alternifolia*.

[Tea tree oil](#) is derived mostly from steaming the leaves of *Melaleuca alternifolia*, a tree native to Australia [\[R\]](#).

It’s used to treat a number of conditions, such as [\[R\]](#):

- Acne
- Dandruff
- Nail fungus
- Lice
- Athlete's foot

How it helps

Tea tree oil has been studied for its antiparasitic effects, particularly against skin mites like the ones causing scabies. Its natural antiseptic and antiparasitic properties help to relieve itchiness and irritation while effectively reducing the number of parasites on the skin.

14



Artemisia Extract

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take an artemisia extract supplement, usually available in capsule form, with a typical dosage ranging from 200 to 400 mg daily. This should be taken with water, preferably after meals to reduce the risk of stomach upset. Follow the specific dosage recommended on the product label or by a healthcare provider for up to 4 weeks.

TYPICAL STARTING DOSE
200 mg

Description

Artemisia extract is derived from various species of the Artemisia plant, and it is used in traditional medicine for its potential medicinal properties. It is being studied for its possible role in supporting digestive health and immune function.

How it helps

Artemisia extract, derived from the plant Artemisia annua, has been used in traditional medicine to treat parasites. Scientific studies have shown that its active compounds, such as artemisinin, have anti-parasitic effects, particularly against malaria-causing parasites. This makes Artemisia extract a valuable supplement in managing parasitic infections.

15



Pumpkin Seed Oil

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 1 to 2 tablespoons of pumpkin seed oil daily, either directly or by adding it to salad dressings, smoothies, or yogurt. It's best consumed with meals to increase absorption.

Description

Pumpkin seed oil is a plant extract obtained from the seeds of the pumpkin (Cucurbita pepo). Traditionally, it has been used for its potential health benefits, including supporting prostate and urinary health. Its beneficial compounds include phytosterols, antioxidants, and essential fatty acids. It also nutrients like vitamin E and K, zinc, and magnesium.

Pumpkin seed oil is a good source of healthy fats and antioxidants [\[R\]](#), [\[R\]](#).

It is used to support hair and prostate health [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

Pumpkin seed oil is often used as a natural treatment for parasitic worms. It contains compounds that can paralyze parasites, making it easier for them to be expelled from the body.

16



Coconut

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate coconut into your diet by adding 1-2 tablespoons of unsweetened coconut flakes to your breakfast cereal or smoothie daily. You can also replace cooking oils with virgin coconut oil when sautéing or baking, not exceeding 2 teaspoons per day to maintain a balanced intake of dietary fats.

Description

Coconut is a versatile fruit with potential health benefits, including providing healthy fats and dietary fiber. It can support satiety, digestion, and overall nutritional wellness when incorporated into a balanced diet.

How it helps

Coconut, particularly coconut oil, has been found to possess properties that can help eliminate certain types of parasites and improve intestinal health. Consuming coconut oil or adding shredded coconut to meals can help in managing parasitic infections.

17



Regular Hand Washing

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Wash your hands with soap and water for at least 20 seconds, making sure to scrub all surfaces of your hands, including the backs, between your fingers, and under your nails. Do this several times a day, especially before eating, after using the bathroom, after blowing your nose, coughing, or sneezing, and after touching garbage.

Description

Regular hand washing is a simple yet highly effective hygiene practice that helps prevent the spread of infectious diseases and illnesses. It is essential for reducing the transmission of harmful pathogens and maintaining overall health.

How it helps

Handwashing is crucial in preventing many types of infections, including those caused by parasites. Parasites and their eggs can be found on contaminated surfaces or foods. By regularly washing your hands, especially before eating or after using the restroom, you can reduce the likelihood of inadvertently ingesting parasites.

18



Grapefruit Pectin

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 5 to 10 grams of grapefruit pectin supplement daily, preferably with a meal to enhance absorption. This regimen should be followed consistently for a period of at least a few weeks to assess its effects on your health.

TYPICAL STARTING DOSE

5 g

Description

Grapefruit Pectin is a fiber found in the walls of grapefruit. It aids in improving digestion and cholesterol levels. Additionally, it can help manage blood sugar levels, making it beneficial for overall heart health and metabolism.

How it helps

Grapefruit pectin is a form of soluble fiber that can bind to certain parasites in the gastrointestinal tract, helping to eliminate them from the body. It supports intestinal health and can contribute to the removal of parasitic infections.

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.