

Nickel Allergy

DNA Health Report

REPORT CATEGORIES —



INFLAMMATION &
AUTOIMMUNITY



SKIN & BEAUTY

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

10 Your recommendations

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

Nickel is a metal that is found naturally in small amounts in soils, sediments, water, air, plants, and animals. Nickel is widely used in various consumer products, including jewelry, coins, and even some electronic devices [R, R].

Nickel allergy develops when an individual's immune system views nickel ions as harmful, triggering an allergic reaction. This condition is more prevalent among women, partly due to greater exposure to nickel-containing jewelry. Once sensitized, even brief contact with nickel can trigger a response. Nickel allergy is one of the most common causes of allergic contact dermatitis, affecting approximately 10-20% of the population [R].

The primary symptom of nickel allergy is allergic contact dermatitis, which may present as [R]:

- Itchy skin rash at the site of contact
- Redness and changes in skin color
- Blisters or vesicles that can break and form crusts
- Dry patches of skin resembling a burn
- Chronic symptoms including thickening and darkening of the skin

Symptoms can appear within a few hours to days after exposure and typically last two to four weeks, depending on the exposure level and the individual's sensitivity. They are typically managed with oral corticosteroids.

The most effective management strategy is to avoid contact with nickel-containing objects. Patients are advised to [R]:

- Wear jewelry made of nickel-free metals like platinum, sterling silver, or 18- or 24-karat gold.
- Choose clothing fasteners, eyeglasses, and watches that are nickel-free or have a protective coating.
- Check with manufacturers regarding the nickel content in metal items when purchasing new products.

People with nickel allergy may also be sensitive to foods that contain nickel or other metals that cross-react with it. These include [R]:

- Chocolate
- Instant coffee and tea
- Soybeans
- Whole grains
- Peanuts
- Almonds
- Hazelnuts
- Lentils

Genetics of Nickel Allergy

The [TNF](#) gene encodes a protein called tumor necrosis factor-alpha (TNF-alpha or cachexin). TNF-alpha plays a central role in the immune response and [inflammation](#), and it has been implicated in a wide variety of inflammatory disorders [\[R\]](#).

The [rs1800629](#) polymorphism (also known as *TNF*-308) is one of the most researched SNPs in the *TNF* gene. **The ‘A’ allele is associated with 6-7 times higher levels of TNF-alpha.** In line with this link to higher inflammation, this variant has been associated with an increased risk of nickel allergy [\[R\]](#), [\[R\]](#).

The [CLDN1](#) gene encodes claudin 1. Claudins are a big part of the tight junction complexes that regulate the permeability of epithelia. Specifically, CLDN1 plays a key role in maintaining the normal barrier function of the skin [\[R\]](#).

A study associated the ‘T’ allele of [rs9290927](#) with an increased risk of contact sensitization to nickel, while the ‘T’ allele of [rs17501010](#) was found protective against nickel contact dermatitis [\[R\]](#).

The [FLG](#) gene encodes **filament aggregating protein** (filaggrin). Filaggrin helps provide structure to the outermost layer of the skin by binding together a type of fibrous protein called keratin. In this manner, filaggrin helps maintain a skin barrier that can protect against allergens (allergy-causing substances), bacteria, and viruses [\[R\]](#), [\[R\]](#).

The ‘A’ allele of [rs61816761](#) encodes a version of the filaggrin protein with impaired function. This variant has been associated with an increased risk of eczema and skin allergic reactions, including nickel sensitivity [\[R\]](#), [\[R\]](#).

The [NTN4](#) gene encodes netrin 4, a protein involved in multiple processes including in various biological processes including neurite growth and migration, angiogenesis, and mural cell adhesion to endothelial cells [\[R\]](#).



TYPICAL LIKELIHOOD

Typical likelihood of nickel allergy based on 6 genetic variants we looked at



Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
CLDN1	rs17501010	GG
PELI1	rs6733160	CC
NTN4	rs2367563	GA
CLDN16	rs9290927	AA
FLG	rs61816761	GG
TNF	rs1800629	GG

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

The ‘A’ allele of [rs2367563](#) has been associated with a slightly increased risk of nickel allergy [\[R\]](#).

The [PELI1](#) gene encodes a protein called ‘*pellino E3 ubiquitin protein ligase 1*’ and involved in multiple processes by negatively regulating several signaling pathways [\[R\]](#).

The ‘C’ allele of [rs6733160](#) has been associated with a slightly increased risk of nickel allergy [\[R\]](#).

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.

- 1

Elimination Diet
- 2

Avoid Food Triggers
- 3

Address Food Sensitivities
- 4

Avoid Contact Triggers
- 5

Avoid Exposure to Heavy Metals
- 6

Low-Nickel Diet

1



Elimination Diet

IMPACT

1 / 5

EVIDENCE

1 / 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

Implementing an elimination diet can effectively pinpoint foods that may trigger allergic reactions in individuals with nickel allergies. By removing nickel-rich foods from the diet, it helps mitigate symptoms such as skin irritation, digestive discomfort, and other allergy-related reactions.

2



Avoid Food Triggers

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Identify foods that trigger negative reactions in your body, such as digestive issues, allergies, or headaches, and eliminate them from your diet entirely. This may require keeping a food diary for a few weeks to observe patterns and might involve cutting out common triggers like dairy, gluten, soy, or certain additives. Continuously monitor and adjust your diet to avoid these triggers as long as the symptoms persist.

Description

Food triggers are specific substances or ingredients in one's diet that can exacerbate or induce adverse reactions, such as allergies, sensitivities, or digestive issues, often leading to symptoms like inflammation, bloating, or discomfort.

A "trigger" is something that prompts or worsens the symptoms of a health condition.

Food triggers can lead to a wide range of symptoms in people who are sensitive to them. These may include [R](#), [R](#), [R](#), [R](#):

- Gut problems
- Skin problems
- Migraines

How it helps

Avoiding food triggers in individuals with nickel allergy helps minimize immune system activation, reducing the risk of allergic reactions and associated symptoms such as inflammation and discomfort.

3



Address Food Sensitivities

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Begin by eliminating common allergens and irritants from your diet, such as dairy, gluten, soy, and nuts, for a period of 4 weeks. After this elimination phase, gradually reintroduce each food group one at a time over a period of 2-3 days each, monitoring for any adverse reactions to pinpoint specific sensitivities.

Description

Food sensitivities refer to adverse reactions to specific foods or food components that can cause symptoms like digestive issues, skin problems, or headaches, without involving the immune system as in allergies.

A *food intolerance* is a non-allergic reaction that makes it hard to digest certain foods. For example, those with lactose intolerance can’t digest dairy [\[R\]](#).

A *food sensitivity* is similar to a food intolerance. However, the cause may be more difficult to pinpoint [\[R\]](#), [\[R\]](#).

People with food sensitivities may have symptoms ranging from gut problems to migraines [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

Addressing food sensitivities can help identify and eliminate allergens that may exacerbate nickel allergy symptoms, reducing the overall inflammatory response and promoting skin healing. Awareness of specific food triggers allows for more effective dietary management and symptom control.

4



Avoid Contact Triggers

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Identify substances or materials that irritate your skin or exacerbate your condition and consistently avoid direct contact with them. This may involve wearing protective clothing or gloves, changing household cleaners or detergents to hypoallergenic options, and carefully reading labels on cosmetics and skin care products to ensure they do not contain irritants specific to your sensitivity.

Description

Identifying and avoiding contact triggers, such as allergens or irritants, can help individuals manage allergies or sensitive skin conditions more effectively, reducing symptoms and improving overall quality of life.

A "trigger" is something that prompts or worsens the symptoms of a health condition.

A contact trigger can be something you touch or inhale. It can include anything from your own sweat to dust in the air [\[R\]](#).

A physical trigger can be anything you come into physical contact with that causes a change to your body. It can include anything from swimming in cold water to wearing tight clothing [\[R\]](#), [\[R\]](#).

In people who are sensitive to them, physical triggers may contribute to vitiligo [\[R\]](#), [\[R\]](#).

In fact, **about 1 in 5 people may have at least one contact trigger**. Common triggers may include [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Nickel and cobalt (e.g., jewelry)
- Latex (e.g., rubber gloves)
- Fragrances

Contact triggers may cause or worsen symptoms in people with eczema [\[R\]](#), [\[R\]](#).

How it helps

Avoiding contact triggers is essential for individuals with nickel allergy as it minimizes direct exposure to allergens, thereby reducing the risk of allergic reactions and skin irritations. This proactive approach helps in managing symptoms effectively and improving overall quality of life.

5



Avoid Exposure to Heavy Metals

IMPACT

1 / 5

EVIDENCE

1 / 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

Avoiding exposure to heavy metals helps mitigate the risk of exacerbating sensitivities in individuals with nickel allergy, as heavy metals can provoke similar immune responses and increase overall allergic reactivity. This proactive measure supports overall health and reduces the potential for additional allergic reactions.

6



Low-Nickel Diet

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

To follow a low-nickel diet, avoid high-nickel foods such as whole grains, nuts, soybeans, oatmeal, legumes, and canned foods. Opt for a variety of fresh fruits, vegetables, and lean meats, ensuring your water intake is from distilled or reverse-osmosis filtered sources. This diet should be maintained consistently for at least 6 weeks to observe potential improvements in symptoms.

Description

A low-nickel diet can benefit individuals with nickel allergies or sensitivities by reducing exposure to nickel-rich foods and alleviating skin rashes and other allergic reactions.

Nickel is an element. It can be used to make cutlery, plumbing fixtures, coins, and more [\[R\]](#), [\[R\]](#).

It is found in soil, water, and other parts of the environment in small amounts. Some foods may also contain nickel, including [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Chocolate
- Soybeans
- Legumes
- Nuts
- Oatmeal

Some people can have an allergic reaction if they come into contact with nickel. This can occur when they touch or eat things that contain nickel. These people may need to avoid nickel [\[R\]](#).

How it helps

Adopting a low-nickel diet minimizes dietary intake of nickel, subsequently reducing systemic exposure and the risk of triggering allergic reactions. This targeted approach aids in alleviating symptoms such as skin rashes and dermatitis associated with nickel sensitivity.