SelfDecode™

Sulfur

Biohacker Report

REPORT CATEGORY

NUTRITION

Sample Client

Report date: 15 January 2026

Powered by omicsedge

Table of Contents

Personal information

NAME

Sample Client

SEX AT BIRTH

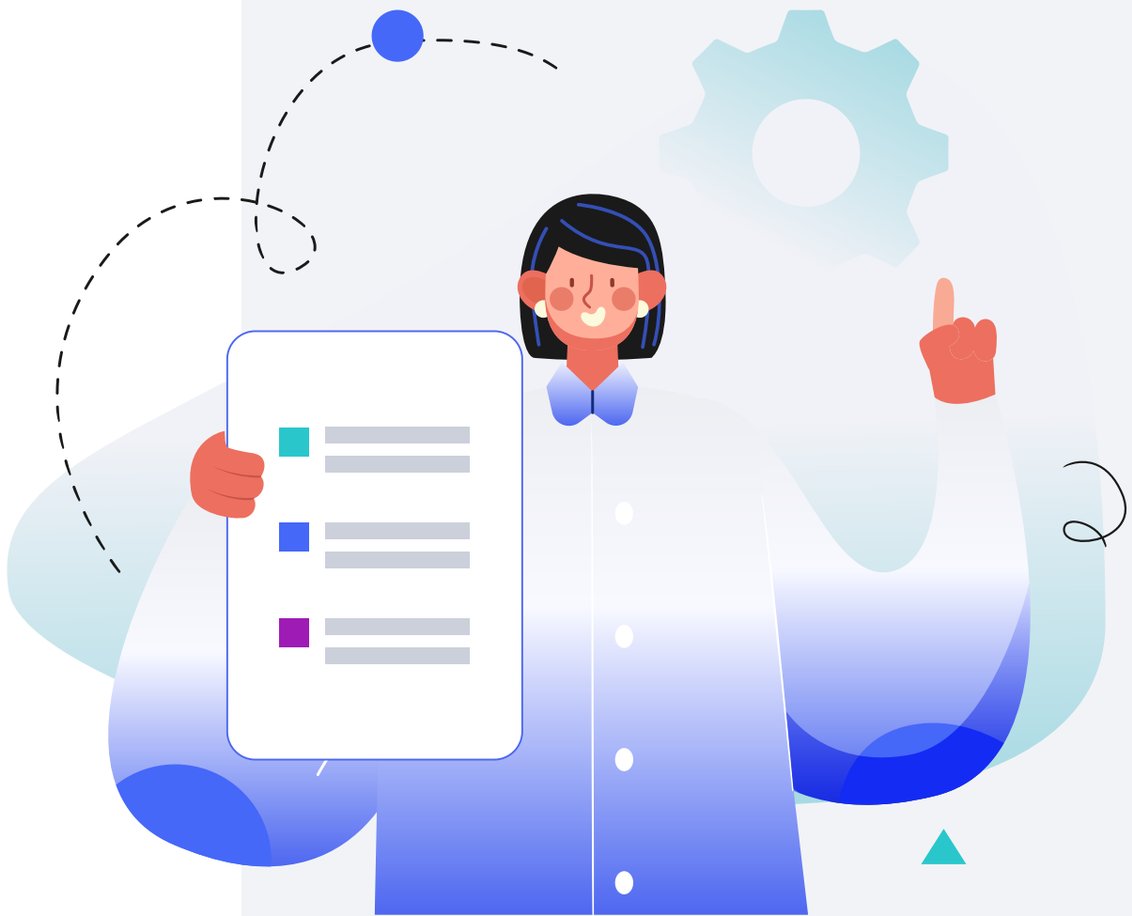
Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg

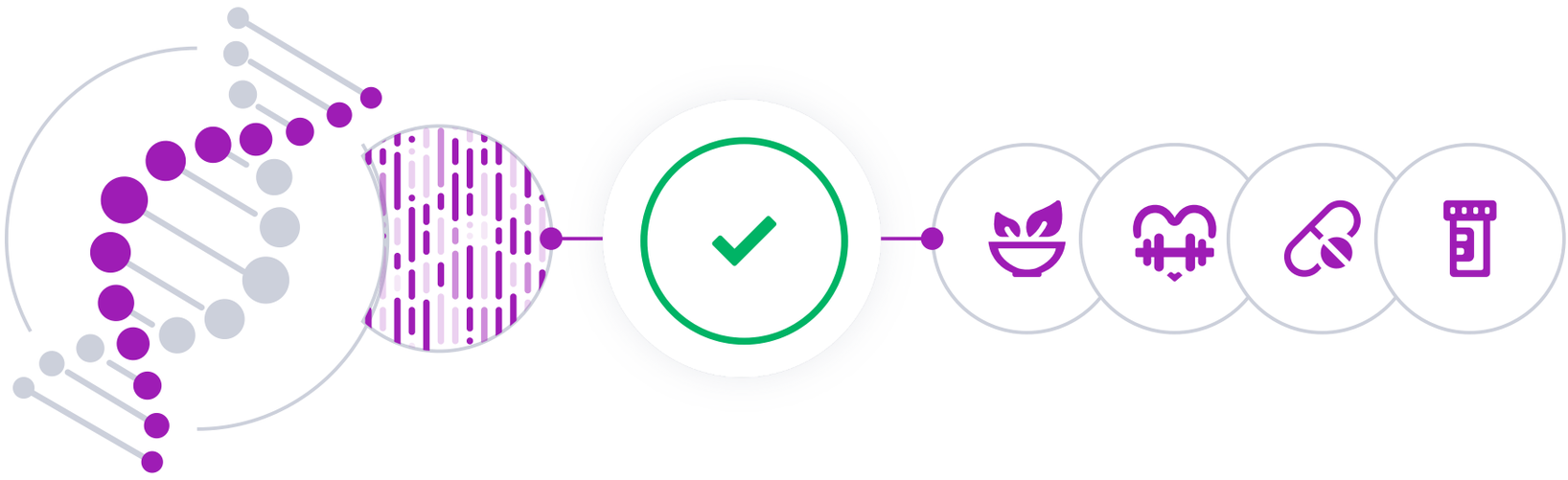


DISCLAIMER

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

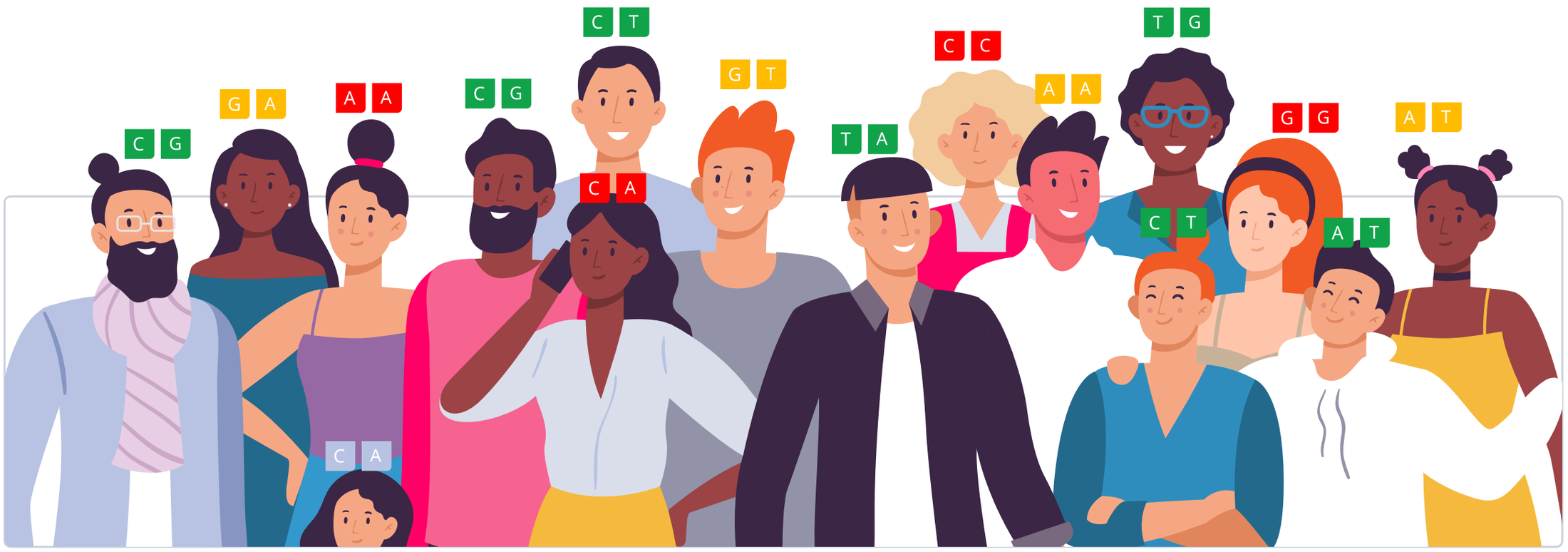
Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.



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.

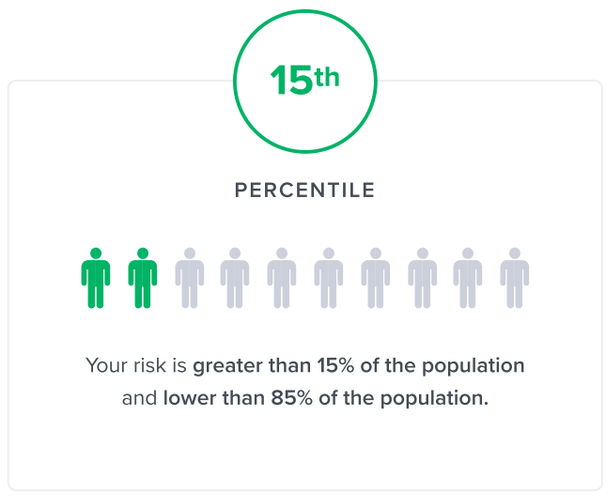
Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



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.

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

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



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, afew 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

Sulfur is the 3rd most abundant mineral in the human body. It can be found in every single cell and plays many important roles within our bodies [R, R, R]:

- It's essential for energy production in mitochondria, the powerhouse of our cells.
- It's needed for detoxification and removing toxic substances, like drugs, from the body
- It is found in glutathione, a key antioxidant.
- It is a part in keratin, which is a main structural component of the skin, hair, and nails.
- It keeps joints healthy by helping form connective tissue such as cartilage and ligaments.

We get sulfur predominantly from dietary proteins. Two amino acids contain sulfur: methionine and cysteine. The highest content of sulfur is found in eggs and egg products. Other sources include meat and plant-derived protein. A small amount of sulfur also comes from organic sulfur compounds found in foods such as garlic, onion, and broccoli [R, R].

Factors Influencing Sulfur Levels

These can increase sulfur levels:

- High amounts of protein in the diet [R, R]
- Sulfur-containing supplements, such as methionine [R]
- Renal tubular acidosis, when kidneys don't get rid of acids properly causing them to build up within the body [R]

High animal protein diets with sulfur containing amino acids can reduce urine pH and increase the risk of kidney stones [R].

In contrast, low sulfur levels can be due to:

- Fasting [R]
- Not enough protein in the diet [R, R]
- Regularly taking drugs such as acetaminophen (Panadol, paracetamol) [R]
- Chronic kidney disease [R, R]

Genetics can also affect your sulfur levels and need for this mineral. Relevant genes may be involved in the metabolism of sulfur-containing amino acids, sulfur transport and processing, or antioxidant and detox pathways.

LOWER NEEDS

Predisposed to lower sulfur needs based on 16 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
ADARB2	rs904963	GG
SLC34A1	rs34225933	CC
SLC13A1	rs1343904	CT
TMEM171	rs662962	TT
GSTP1	rs1695	AA
GPX1	rs1050450	GG
NQO1	rs1800566	GG
SLC13A1	rs188136743	GG
SLC13A1	rs138989506	CC
SLC13A1	rs28364172	GG
/	rs4490575	AA
ANKRD50	rs113014964	GG
CADM1	rs57734211	GG
AOX1	rs186019576	GG
HNF1A	rs1169288	CC
C12ORF43	rs1169284	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
1	Molybdenum	
2	Methionine	200 mg
3	Methylsulfonylmethane (MSM)	1 g
4	Topical Sulfur	
5	Zinc Sulfate	220 mg
6	Limit Sulfur Intake	

1

Molybdenum

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Adults should get about **45 micrograms** of molybdenum each day [R].

Foods rich in molybdenum include [R]:

- Black-eyed peas (288 mcg per serving)
- Beef liver (104 mcg per serving)
- Lima beans (104 mcg per serving)
- Yogurt (26 mcg per serving)
- Baked potato (16 mcg per serving)
- Wheat cereals (15 mcg per serving)

Description

Molybdenum (Mo) is a mineral that we need in very small amounts (trace mineral) [R].

Molybdenum helps process sulfur-containing amino acids such as methionine and cysteine. It also helps make uric acid and is part of the tooth enamel [R, R].

Adults should get about **45 micrograms** of molybdenum each day [R].

Foods rich in molybdenum include [R]:

- Black-eyed peas (288 mcg per serving)
- Beef liver (104 mcg per serving)
- Lima beans (104 mcg per serving)
- Yogurt (26 mcg per serving)
- Baked potato (16 mcg per serving)
- Wheat cereals (15 mcg per serving)

Water also contains some molybdenum, although the exact amount can vary greatly depending on the region [R].

People easily get all the molybdenum they need through food and water, so **molybdenum deficiency is extremely rare** [R].

How it helps

Molybdenum assists in the metabolism of sulfur-containing amino acids, thereby promoting effective sulfur utilization in the body. This supports overall metabolic health and helps prevent issues related to sulfur imbalance.

2

Methionine

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Take a methionine supplement in the form of SAMe at 200-400mg daily, with water, preferably on an empty stomach to enhance absorption. It's recommended to start with a lower dose and gradually increase as needed. Consult with a healthcare provider for personalized advice, especially if you have other medical conditions or are taking medications.

TYPICAL STARTING DOSE

200 mg

Description

Methionine is an essential amino acid found in various protein-rich foods. It plays a crucial role in protein synthesis and liver function and is important for overall health.

1. A **methionine supplement** can vary depending on which source is utilized to boost methionine levels. One or more of the following options can be taken to boost methionine levels:
    a. SAMe or S-Adenosyl-Methionine can be taken in doses starting at 200 mg/day. It is sometimes recommended to take with the other two supplements to promote absorption.
    b. TMG (Betaine) or trimethylglycine supplements are made from the byproducts of sugar beet processing. Typically, it is offered in 500-1000 mg capsules.
    c. Methylfolate is the biologically active form of folate (vitamin B9) and typically offered in dosages of 7.5-15 mg.

Note: excessive levels of methylfolate can cause adverse reactions like anxiety and sore joints and muscles. Speak with your doctor before using a methionine supplement.

How it helps

Methionine supplementation aids sulfur metabolism and supports the synthesis of vital proteins and neurotransmitters, which may enhance liver function and overall health in individuals with sulfur-related imbalances.

3

Methylsulfonylmethane (MSM)

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Take 1 to 3 grams of Methylsulfonylmethane (MSM) per day, divided into three doses. This can be in the form of capsules or powder that is mixed with water. It is recommended to start with a lower dose to assess tolerance, then gradually increase to the desired dose over a period of 1 to 2 weeks.

TYPICAL STARTING DOSE

1 g

Description

MSM is a naturally occurring sulfur compound found in foods and used in dietary supplements. It has anti-inflammatory properties and may be used to support joint health and reduce exercise-related muscle soreness.

A molecule of MSM is broken down in the body into a sulfate (sulfur) group and two methyl groups.

The following may increase people’s needs for sulfur and methyl groups: physical activity, recovery from injuries, inflammation, infections/sickness, toxins, etc.

People also need more sulfur when taking hormones (DHEA, pregnenolone, etc.), drugs (Aspirin, Tylenol, NSAIDs, birth control, etc.) or supplements (flavonoids & polyphenols - resveratrol, quercetin, curcumin, etc.) that undergo sulfation.

How it helps

Methylsulfonylmethane (MSM) aids in the synthesis of collagen and other connective tissues, promoting joint health while its anti-inflammatory properties assist in reducing pain and swelling, making it particularly beneficial for conditions related to inflammation and joint discomfort.

4

Topical Sulfur

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Apply a thin layer of topical sulfur cream, lotion, or ointment to the affected area of the skin once or twice a day, after cleaning the skin thoroughly. Allow it to sit on the skin for 10 minutes before rinsing off if the product instructions specify. Use consistently for 4 to 8 weeks to see improvement in skin conditions such as acne.

Description

Topical sulfur preparations are used for their antimicrobial and anti-inflammatory properties and are commonly employed to treat skin conditions like acne and scabies. Sulfur is a naturally occurring mineral. It has been used for centuries in traditional medicine to reduce bacterial growth and inflammation. Today, it is commonly used in topical creams and lotions to treat inflammatory skin conditions such as [R]:

- Acne
- Rosacea
- Seborrheic dermatitis
- Dandruff

Selenium sulfide is an example of a sulfur compound. People use it for dandruff and seborrheic dermatitis [R].

How it helps

Topical sulfur aids in managing skin conditions by reducing inflammation and inhibiting bacterial growth, effectively addressing issues like acne and scabies. Its antimicrobial properties help cleanse the skin and prevent further infection, promoting healing.

5

Zinc Sulfate

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Take zinc sulfate as a dietary supplement by swallowing one 220 mg tablet (equivalent to 50 mg elemental zinc) with water, once daily, preferably with a meal to avoid stomach upset. This regimen can be followed for up to 2 weeks unless advised differently by a healthcare professional.

TYPICAL STARTING DOSE

220 mg

Description

Zinc sulfate is a chemical compound containing zinc and sulfur, used in dietary supplements to address zinc deficiencies, boost immune function, and support skin health. It's employed in medical settings to treat conditions like Wilson's disease and zinc deficiency-related disorders.

How it helps

Zinc sulfate supplementation offers key benefits for sulfur-related health conditions by providing essential zinc, which is crucial for immune system function and skin integrity. While it may not directly replace sulfur, it supports overall health where deficiencies exist, thus facilitating better metabolic processes.

6

Limit Sulfur Intake

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Reduce your consumption of high-sulfur foods such as eggs, meat, dairy products, and certain vegetables like onions, garlic, and cruciferous vegetables (broccoli, cauliflower, cabbage, Brussels sprouts) to no more than 2 servings per day. Instead, focus on increasing your intake of low-sulfur foods such as fruits, grains, and nuts. Aim to maintain this dietary balance indefinitely to effectively limit sulfur intake.

Description

In severe symptomatic cases in people with metabolic disorders, a diet restricted in sulfur-containing amino acids may help [R].

How it helps

Limiting sulfur intake in individuals with specific metabolic disorders can reduce the buildup of toxic sulfur-containing compounds, thereby alleviating symptoms and improving overall metabolic balance.