SelfDecode™

Molybdenum

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

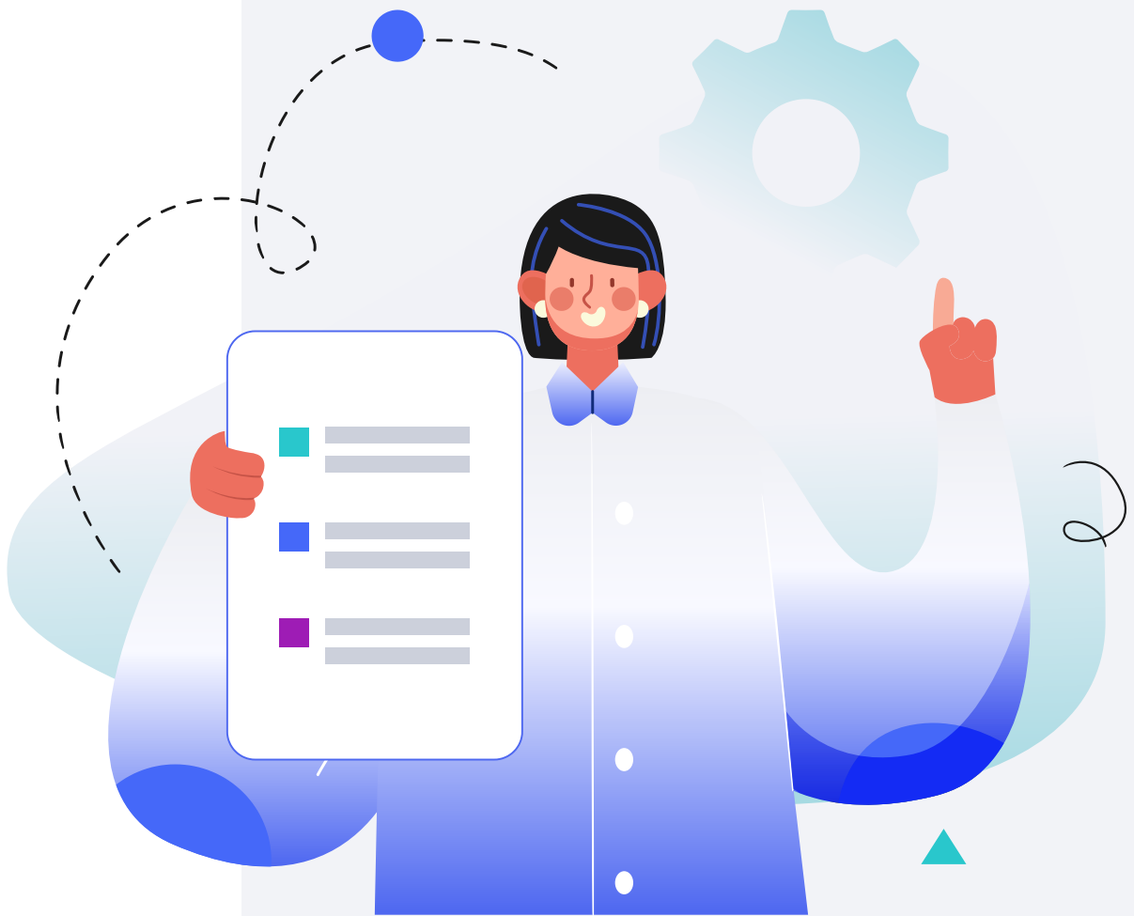
Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg

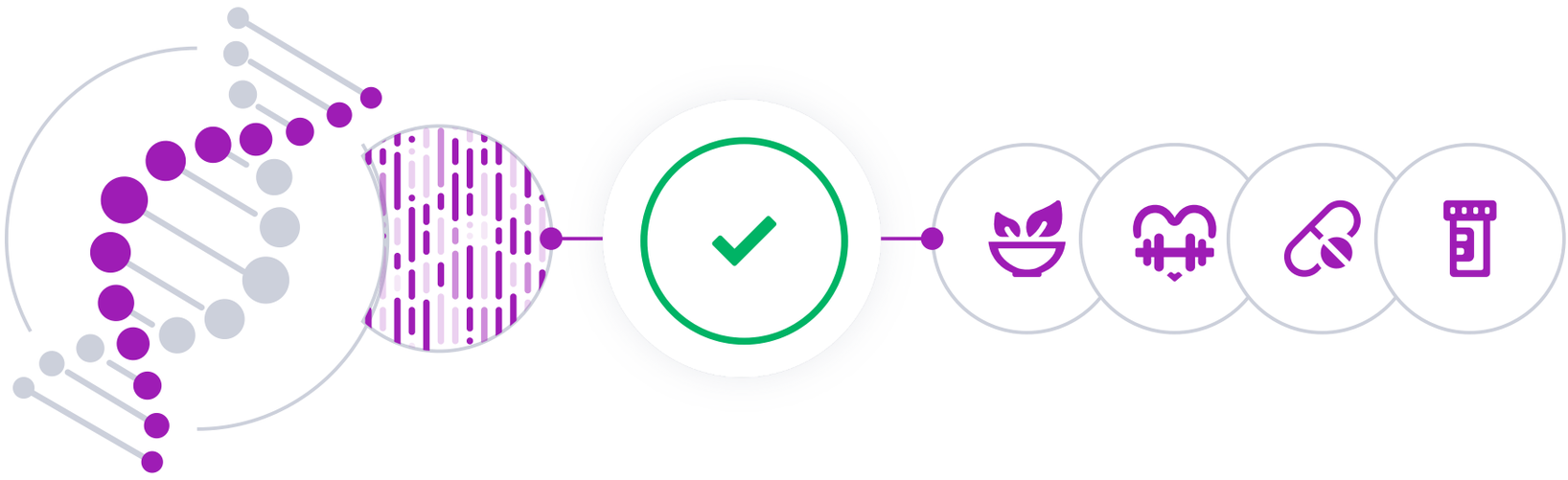


DISCLAIMER

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

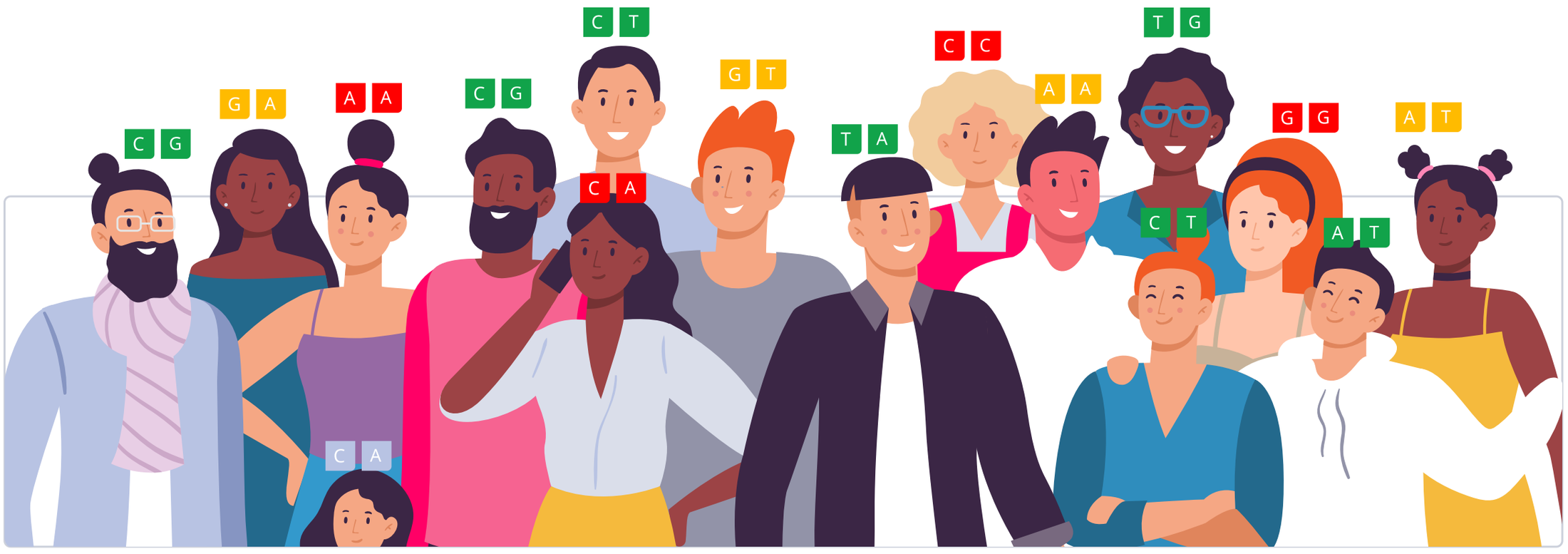
Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.



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.

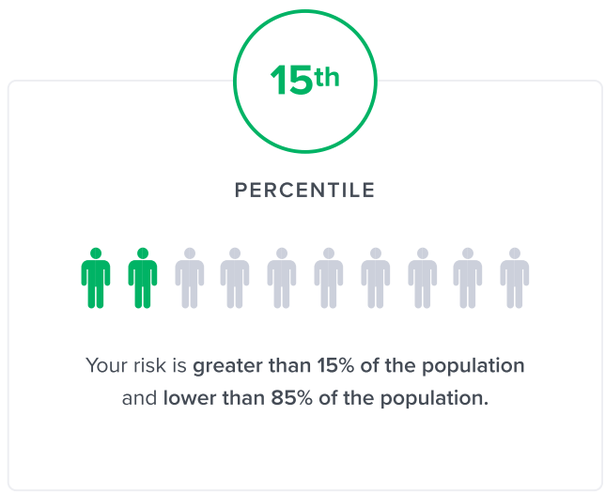
Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



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

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 (mcg)** 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 potatoes (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. For this reason, we recommend getting this mineral from foods only** [R].

Molybdenum Toxicity

Although small amounts of molybdenum are essential, too much can be harmful. However, **molybdenum toxicity is also extremely rare**.

Workplace exposure is one of the most common causes of high molybdenum levels. People working in **electric, welding, and mining industries** may be at a higher risk [R, R, R].

One of the more common signs of toxicity is an increase in uric acid, leading to gout-like symptoms such as swelling and **joint pain**. Other reported symptoms include [R, R, R]:

- Diarrhea
- Anemia (a lack of healthy red blood cells)
- Weight loss
- Sexual dysfunction

Besides your diet and environment, **genetics may also influence your molybdenum levels** [R].

TYPICAL NEED

Likely typical need for molybdenum based on 15,556 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
IGFBP7	rs75597017	AA
ABCG2	rs60911526	GG
NR4A2	rs16839950	TT
PTCH1	rs9632898	CC
NPAS3	rs8021455	TC
SPDL1	rs39797	CT
SEC11C	rs7239348	AA
UBE2E2	rs9310713	GG
TGS1	rs10481221	CG
VAT1L	rs76606743	GA
TAFA1	rs7628995	GA
DHCR24	rs12402232	CA
MADCAM1	rs3745925	AC
PPM1L	rs75943454	AA
SLC40A1	rs10170389	GG
KBTBD11	rs78240379	CC
OTX2	rs1504607	TT
NCOA4	rs2075894	AA
LMO4	rs12089211	TT
NAA25	rs11066132	CC
ACAD10	rs11066008	AA
ATXN2	rs11065933	TT

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.

1. Molybdenum
2. Chicken
3. Leafy Green Vegetables
4. Beef liver
5. Spinach
6. Beef
7. Pecans
8. Lima Beans
9. Bananas
10. Legumes
11. Eggs
12. Black-Eyed Peas
13. Whole Grains
14. Potatoes

1

Molybdenum

IMPACT 5 / 5

EVIDENCE 5 / 5

How to implement

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

Several molybdenum supplements are available in different forms, including:

- Sodium molybdate

- Ammonium molybdate
- Molybdenum aspartate
- Molybdenum citrate
- Molybdenum glycinate
- Molybdenum picolinate

Remember that intake of molybdenum should not exceed 2 mg (2,000 mcg) each day. This limit is lower for children.

Please note: although rare, molybdenum toxicity can increase uric acid levels and cause gout-like symptoms such as swelling and joint pain. Other reported symptoms include diarrhea, anemia, weight loss, and sexual dysfunction [R, R, R]***.***

2

Chicken

IMPACT 2 / 5

EVIDENCE 1 / 5

How to implement

Incorporate chicken into your meals 2-3 times a week, preferably opting for lean cuts like breast meat. Cook it through methods such as grilling, baking, or boiling to avoid adding excess fats. Aim for a portion size of about 3-4 ounces (85-113 grams) per serving.

Description

Chicken is a lean source of protein and essential nutrients like vitamin B12 and selenium. It can be a healthy part of a balanced diet that supports muscle growth and overall nutritional well-being.

Chicken and particularly dark meat like the thigh, is a good source of omega-6s that also contains protein, vitamins, and even needed trace minerals like selenium. One chicken thigh contains 3792 mg of omega-6.

How it helps

Chicken is rich in molybdenum, a mineral that aids in enzyme function and protein metabolism in your body. Regularly eating chicken can, therefore, help maintain healthy molybdenum levels, preventing deficiency.

3

Leafy Green Vegetables

IMPACT 2 / 5

EVIDENCE 1 / 5

How to implement

Incorporate at least one serving of leafy green vegetables, such as spinach, kale, or Swiss chard, into your diet daily. This can be done by adding them to salads, smoothies, or as a side dish to your meals.

Description

Leafy green vegetables like spinach and kale are packed with vitamins, minerals, and antioxidants. Incorporating them into your diet can promote overall health by providing essential nutrients, supporting digestion, and reducing the risk of chronic diseases like heart disease and certain cancers.

Leafy green vegetables, also called leafy greens, or greens, are edible plant leaves, which can include stalks and shoots as well. Common examples include: lettuce, spinach, kale, chard, endive, and fennel.

Leafy greens contain a host of vitamins and minerals, as well as fiber. Most of them are a particularly good source of vitamin K.

How it helps

Leafy green vegetables like spinach and kale contain molybdenum and are also rich in other essential vitamins and minerals.

4

Beef liver

IMPACT 2 / 5

EVIDENCE 1 / 5

How to implement

Incorporate beef liver into your diet 1-2 times per week, aiming for a serving size of about 3-4 ounces (85-113 grams) each time. This can be pan-fried, baked, or incorporated into dishes like stews or pate to make it more palatable.

Description

Beef liver is a commonly recommended organ meat due to its rich content of protein, B-vitamins, and minerals.

Chickpeas are a good source of vitamin B6, iron, folate, fiber, and rich in minerals like copper, zinc, and phosphorus. A ½ cup serving provides 1.1 mg of vitamin B6 or 65%DV.

How it helps

Beef liver is rich in molybdenum, a mineral that aids in breaking down harmful sulfites and prevent their buildup in the body, thus preventing molybdenum deficiency. Regular consumption of beef liver can foster optimal bodily function and overall health.

5

Spinach

IMPACT 2 / 5

EVIDENCE 1 / 5

How to implement

Incorporate one cup of fresh spinach or half a cup of cooked spinach into your daily diet. You can add spinach to salads, smoothies, omelets, or pastas to easily increase your intake.

Description

Spinach is a leafy green vegetable packed with essential nutrients, including vitamins A and K, iron, and folate. Incorporating spinach into the diet supports eye health, bone health, and overall nutrition.

Spinach is a good source of molybdenum, folate, calcium, and iron, as well as vitamins A, C, and K1. A ½ cup serving provides 8 mcg of molybdenum or 18%DV.

How it helps

Spinach is rich in molybdenum, a mineral essential to many of your body's enzymatic functions. Consuming it helps prevent molybdenum deficiency, supporting detoxification, nerve function, and waste processing in your kidneys.

6

Beef

IMPACT 2 / 5

EVIDENCE 1 / 5

How to implement

Incorporate lean beef into your diet 2-3 times per week, with a serving size of about 3-4 ounces (85-113 grams) per meal. Choose cuts like sirloin or round to minimize saturated fat intake.

Description

Beef is a rich source of high-quality protein, essential vitamins, and minerals like iron and zinc. Incorporating lean cuts of beef into a balanced diet can support muscle growth, overall nutrition, and iron intake.

Beef is an excellent source of many B-vitamins, protein, proline, and minerals like zinc and iron. Grass-fed uncharred beef is healthiest. Beef contains 34.82 mg of proline per gram.

How it helps

Eating beef provides molybdenum, a vital mineral essential for the function of certain enzymes in your body. Consuming adequate molybdenum can prevent a deficiency, supporting overall health and specific bodily processes, such as waste processing in the kidneys.

7

Pecans

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Incorporate about a handful of pecans (roughly 1 ounce or 28 grams) into your daily diet. You can eat them as a snack, sprinkle chopped pecans over salads, or blend them into smoothies. Aim to do this regularly as part of your daily dietary habits to enjoy their health benefits.

Description

Pecans are a type of nut derived from the hickory tree, primarily native to North America. They are rich in nutrients like healthy fats, protein, dietary fiber, and various vitamins and minerals, including vitamin E, manganese, and zinc.

Pecans are a good source of fiber, along with manganese, molybdenum, copper, thiamine, and zinc. A 1-ounce serving provides 1.1 mg of manganese or 48%DV.

How it helps

Pecans, being rich in dietary fiber, help with digestion, which allows for optimal absorption of nutrients including molybdenum, a mineral essential for enzyme function in the body. Regular intake of pecans could thus ensure adequate molybdenum levels, preventing deficiency-related problems.

8

Lima Beans

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Incorporate lima beans into your diet 2-3 times per week. They can be added to stews, soups, salads, or eaten as a side dish, boiled or steamed, for a nutritious boost.

Description

Lima beans are a nutritious legume packed with fiber, protein, vitamins, and minerals. Their consumption supports digestive health, helps regulate blood sugar levels, and provides essential nutrients for overall well-being.

Lima beans are loaded with fiber, minerals like molybdenum, manganese, magnesium, iron, copper, potassium, and vitamins C and B6. A ½ cup serving provides 104 mcg of molybdenum or 231%DV.

How it helps

Lima beans are rich in molybdenum, a trace mineral your body needs to process proteins and genetic material. By including them in your diet, you'll support these vital functions and help prevent molybdenum deficiency.

9

Bananas

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Incorporate 1-2 bananas into your daily diet. Bananas can be eaten as a standalone snack, added to cereal, oatmeal, or smoothies, or used as an ingredient in baking. Aim to include them regularly for ongoing dietary benefits.

Description

Bananas are a nutrient-rich fruit packed with potassium, fiber, and essential vitamins. They are a convenient and healthy snack option that can help support heart health, digestive regularity, and overall well-being.

Bananas are a good source of vitamins B6 and C, as well as numerous minerals, including potassium, copper, and magnesium. A single banana provides 0.4 mg of vitamin B6 or 25%DV.

How it helps

Bananas are rich in dietary fiber and essential nutrients like potassium which promote overall health. However, they do not directly prevent or treat Molybdenum deficiency as this trace element is not present in significant amounts in bananas.

10

Legumes

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Incorporate a serving of legumes, such as beans, lentils, chickpeas, or peas, into your diet at least four times a week. A serving size is approximately half a cup cooked. Ensure to prepare them properly by soaking and rinsing beans, if applicable, to reduce anti-nutrients and improve digestibility.

Description

Legumes, such as beans, lentils, and chickpeas, are excellent sources of plant-based protein, fiber, and various vitamins and minerals. Including legumes in your diet can promote satiety and support digestive health.

Legumes are plants from the *Fabaceae* family. Their edible seeds are called **pulses**. Legumes are important food staples and sources of carbohydrates, fiber, protein, iron, and other key nutrients.

Common legumes include:

- Peanuts
- Beans
- Chickpeas
- Peas
- Lentils

How it helps

Legumes such as beans and lentils contain molybdenum, which is an essential nutrient that the body uses to process proteins and genetic material like DNA.

11

Eggs

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Incorporate eggs into your diet 3-4 times a week, preferably for breakfast or as part of a balanced meal. They can be boiled, scrambled, or made into omelets, ensuring they are cooked thoroughly.

Description

Eggs are a nutrient-dense food rich in protein, vitamins, and minerals. They support various aspects of health, including muscle development, brain function, and eye health.

Eggs are great nutrition sources, with protein, healthy fats, arachidonic acid, and numerous vitamins and minerals.

How it helps

Eggs are an excellent source of molybdenum, a vital mineral for various body functions, including protein synthesis and metabolism. Regular egg consumption can help maintain your molybdenum levels and potentially prevent deficiency conditions.

12

Black-Eyed Peas

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Incorporate black-eyed peas into your diet 2-3 times per week. You can add them to soups, salads, or make them a key ingredient in a stew or side dish. Each serving should be about 1/2 cup (cooked) to ensure you get their full nutritional benefits.

Description

Black-eyed peas are a type of legume that are a good source of protein, fiber, and essential vitamins and minerals. Incorporating black-eyed peas into your diet can support digestive health, provide sustained energy, and contribute to overall nutritional wellness.

Black-eyed peas are an excellent source of molybdenum and folate, along with potassium, iron, and fiber. A ½ cup serving provides 288 mcg of molybdenum or 640%DV.

How it helps

Black-eyed peas are rich in molybdenum, a mineral needed for a variety of enzymatic processes in the body. Regular intake can prevent molybdenum deficiency, supporting your body's metabolism and overall health.

13

Whole Grains

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Incorporate at least three servings of whole grains into your daily diet. This can include consuming foods such as whole grain bread, brown rice, whole grain pasta, and oats. Aim to replace refined grains with whole grains at each meal for optimal benefits.

Description

Whole grains encompass a variety of grains like wheat, oats, and quinoa, where the entire grain kernel is intact. They are rich in fiber, vitamins, minerals, and antioxidants, supporting heart health and reducing the risk of chronic diseases.

Unlike refined grains, whole grains contain nutritious parts of the grain like bran and germ.

Whole grains provide many crucial nutrients, including:

- Fiber
- B-vitamins
- Iron
- Magnesium
- Phosphorus

Due to their high fiber content, whole grains don’t tend to spike blood sugar like refined grains do.

How it helps

Whole grains are a natural source of molybdenum and they also contribute to a balanced diet by providing additional nutrients and fiber.

14

Potatoes

IMPACT 1 / 5

EVIDENCE 1 / 5

How to implement

Incorporate potatoes into your diet 2-3 times per week, either baked, boiled, or steamed, avoiding deep-frying to minimize unhealthy fats. Aim for portion sizes of about a half to a whole medium-sized potato per serving.

Description

Potatoes are a starchy root vegetable rich in carbohydrates, molybdenum, iron, fiber, vitamin C, manganese and potassium. They provide sustained energy, and promote digestive regularity.

Potatoes are a good source for choline, as well as vitamins and minerals (mostly in the skin), including iron, vitamins C and B6, potassium, manganese, and niacin. One medium potato provides 57 mcg of choline or 10%DV.

How it helps

Potatoes are rich in molybdenum, a mineral that supports certain enzyme functions in the body necessary for breaking down harmful substances and maintaining overall health. Therefore, consuming potatoes can contribute to preventing a molybdenum deficiency.

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.