

Muscle Cramps

DNA Health Report

REPORT CATEGORY —



Sample Client

Report date: 15 January 2026

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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

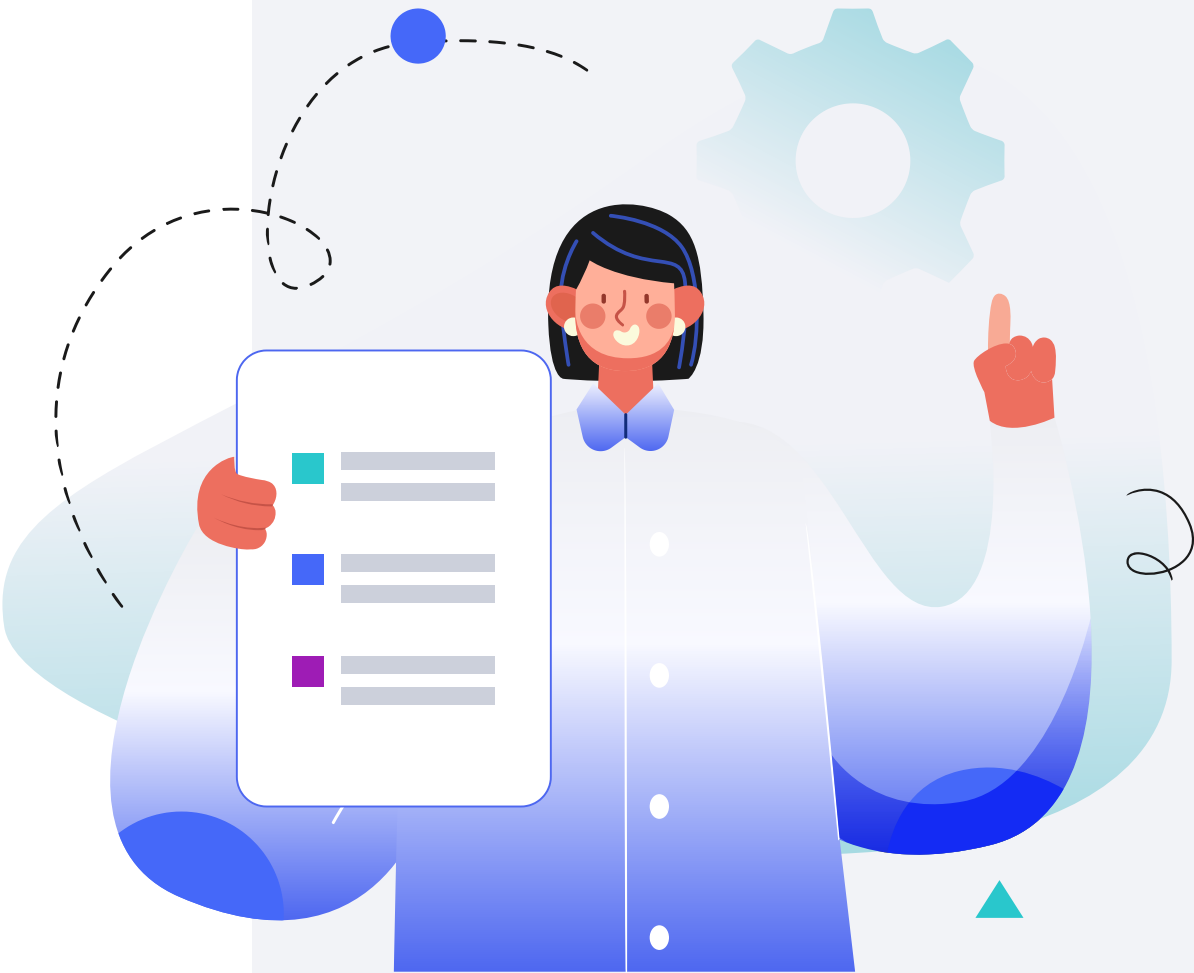
Male

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

Muscle cramps are sudden, involuntary contractions or spasms in one or more of the muscles. They can be extremely painful and often occur in the legs. A muscle cramp can last for a few seconds to several minutes, and the muscle might feel tender for up to 24 hours after the cramp subsides.

Common symptoms associated with muscle cramps include:

- Sudden sharp pain in the affected muscle, often in the legs
- A hard lump of muscle tissue that can be felt or even seen beneath the skin

Risk Factors and Genetics

Factors that might increase the risk of experiencing muscle cramps include:

- Dehydration
- Age, with older individuals being more susceptible
- Overuse of the muscle
- Muscle strains
- Holding a position for an extended period
- Mineral depletion, especially low levels of potassium, calcium, or magnesium
- Certain medications, such as diuretics, blood pressure drugs, and statins
- Medical conditions like poor circulation, kidney problems, and thyroid disorders
- Genetics

While muscle cramps are typically linked to external factors, genetics can play a role in muscle function and susceptibility to cramps. Some individuals may have a genetic predisposition to muscle cramping, either due to the way their muscles function or how their body regulates electrolytes.



TYPICAL LIKELIHOOD

Typical likelihood of having muscle cramps based on 1,672 genetic variants we looked at



Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
IKZF2	rs112988286	AA
MSI2	rs116924898	GG
LMO7	rs73229904	TT
TBC1D4	rs76851570	TT
STK32A	rs35852718	AA
ST6GAL2	rs62155507	AA
RAB21	rs61754230	CC
MRPS34	rs11552434	CC
AGXT2	rs114286107	CC
CLEC18C	rs150702800	CC
PTK7	rs34021075	AA
TARS1	rs138936240	GG
DUOX2	rs151261408	GG
PCDHA3	rs141677026	CC
CHRNA5	rs2229961	GG
CC2D2A	rs144439937	AA
SLC36A2	rs77010315	CC
TMC3	rs150843673	GG
NEB	rs62167164	GG
KCTD18	rs565245989	AA
MCM10	rs35114749	CC
/	rs35525189	DEL(T)G
PSCA	rs138377917	GG
TENM2	rs114898031	AA

GENE	SNP	GENOTYPE
GANC	rs35285091	CC
AMPD1	rs17602729	GG
CGRRF1	rs34839928	CC
SPG11	rs78183930	CC
EFHC1	rs1570624	GG
ALDH5A1	rs62621664	GG
/	rs136935526	AA
CACNA2D3	rs112362995	CC
OBSCN	rs62621832	TT
XIRP2	rs16853333	GG
CFHR2	rs41257904	GG
/	rs66906990	TT
DCHS2	rs546143621	AA
GLCE	rs12440300	AA
FAM193B	rs116293002	GG
FPGS	rs35789560	CC
RFX7	rs33984059	AA
KRT6A	rs62617089	GG
/	rs78767524	AA
CYP4B1	rs45467195	AA
BLVRA	rs1050916	AA
IQCH	rs62014646	GG
PDLIM5	rs75841704	AA
THBS3	rs72704117	CC
SPDL1	rs78480498	CC
GPX5	rs58554303	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.

DOSAGE		DOSAGE			
1	Magnesium Sulfate	200 mg	2	Magnesium Citrate	200 mg
3	Contrast Water Therapy		4	Magnesium	350 mg
5	Hot Applications	20 minutes	6	Stretching	15 minutes
7	Progressive Muscle Relaxation	10 minutes	8	Apply Heat	15 minutes
9	Deep Heat Topicals		10	Magnesium Chloride	200 mg
11	Calcium Magnesium Citrate	300 mg	12	Physical Maneuvers	30 seconds
13	Vitamin K2	100 mcg	14	Magnesium Glycinate	200 mg

1



Magnesium Sulfate

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 200-400 mg of magnesium sulfate orally with water once daily, ideally in the evening or as directed by your healthcare provider. Continue this supplementation as recommended by your healthcare provider, often for several weeks to months for optimal benefits.

TYPICAL STARTING DOSE
200 mg

Description

Magnesium sulfate, also known as Epsom salt, is used in baths and topical applications to soothe sore muscles, alleviate stress, and promote relaxation. It is believed to be absorbed through the skin, providing a calming effect on muscles and the nervous system.

How it helps

Magnesium sulfate aids in muscle relaxation by regulating calcium levels in muscle cells, which helps reduce the frequency and severity of cramps. Its absorption through the skin can also enhance systemic relaxation, promoting overall muscle comfort.

2



Magnesium Citrate

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 200-400 mg of magnesium citrate daily, preferably in the evening or before bedtime. It can be taken with or without food. If you experience any laxative effect, reduce the dosage. This supplement may be taken continuously, but it's advisable to reassess its necessity with a healthcare provider periodically.

TYPICAL STARTING DOSE
200 mg

Description

Magnesium citrate is a well-absorbed form of magnesium commonly used as a laxative to relieve occasional constipation. It can also contribute to overall magnesium intake and support digestive regularity when used as a dietary supplement.

How it helps

In a study involving 60 premenopausal women with fibromyalgia and 20 healthy matched controls, low magnesium levels were observed in fibromyalgia patients. Treatment with magnesium citrate alone improved tender points and fibromyalgia intensity, while the combination of amitriptyline and magnesium citrate was effective for most parameters, except numbness [\[R\]](#).

3



Contrast Water Therapy

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

To perform contrast water therapy, alternate between hot and cold water during your shower. Start with hot water for about 3-4 minutes, then switch to cold water for about 1 minute. Repeat this cycle 3-5 times, always ending with cold water. Do this daily or after intense physical activity for the best results.

Description

Contrast water therapy involves alternating between hot and cold water treatments, which may help reduce muscle soreness and promote recovery after intense physical activity. This therapy can support musculoskeletal health and improve circulation, contributing to overall physical well-being.

How it helps

Contrast water therapy may help alleviate muscle cramps by enhancing blood circulation and reducing muscle tension. The alternating temperatures can facilitate quicker recovery by promoting relaxation and improving muscular function.

4



Magnesium

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take up to 350 mg of magnesium daily as a supplement, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

350 mg

Description

Magnesium is an essential mineral involved in various bodily functions, including muscle contractions, nerve signaling, and bone health. Maintaining adequate magnesium levels through diet or supplements can support overall well-being and reduce the risk of magnesium deficiency-related health issues.

[Magnesium](#) is an essential mineral. Your body needs it for [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Muscle, nerve, and bone function
- Blood sugar and blood pressure control
- DNA and protein production
- Strong immunity

Women need **310-320 mg** of magnesium per day, while men need **400-420 mg** [\[R\]](#).

Foods rich in magnesium include **nuts, seeds, and leafy greens**. Magnesium is also available as a supplement [\[R\]](#).

How it helps

In a study involving 60 premenopausal women with fibromyalgia and 20 healthy matched controls, low magnesium levels were observed in fibromyalgia patients. Treatment with magnesium citrate alone improved tender points and fibromyalgia intensity, while the combination of amitriptyline and magnesium citrate was effective for most parameters, except numbness. Magnesium deficiency may contribute to fibromyalgia symptoms [\[R\]](#).

5



Hot Applications

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Apply a hot pack, heating pad, or a warm towel to the affected area for 15-20 minutes at a time. Do this several times a day, especially before activities that increase pain.

TYPICAL STARTING DOSE

20 minutes

Description

The use of hot applications, such as heating pads or warm compresses, can help relieve muscle tension, reduce pain, and improve blood flow to affected areas. It is a common approach for managing muscular discomfort and promoting relaxation.

People use hot applications to relieve pain, improve blood flow, and help muscles relax [\[R\]](#), [\[R\]](#).

Types of hot applications include [\[R\]](#), [\[R\]](#):

- Heating pads
- Hot baths
- Saunas

How it helps

Hot applications help alleviate muscle cramps by increasing blood flow to the affected muscles, which enhances oxygen delivery and promotes tissue relaxation. This mechanism effectively reduces muscle tension and pain, providing immediate relief from cramps.

6



Stretching

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Incorporate stretching exercises into your daily routine, dedicating at least 10-15 minutes each day. Focus on major muscle groups such as the neck, shoulders, chest, back, hips, and legs. For best results, stretch both before and after other physical activities, holding each stretch for 15-30 seconds without bouncing.

TYPICAL STARTING DOSE

15 minutes

Description

Stretching involves gently elongating the muscles to improve flexibility, reduce muscle tension, and enhance joint mobility. Regular stretching can help prevent injuries, promote better posture, and increase overall physical comfort.

Stretching is a form of physical exercise that involves moving a muscle or group of muscles to their maximum range of motion. The most common types are **dynamic** (involving movement) and **static** stretching.

Stretching can help **improve flexibility, range of motion, and posture**. It may also relieve stress, reduce muscle soreness and tension, increase blood flow, and reduce the risk of injuries.

To get the most out of stretching, try to do it regularly, breathe deeply, and ease into the stretches.

How it helps

Stretching helps relieve muscle tension by improving the elasticity of muscle fibers, which reduces the likelihood of involuntary contractions that lead to cramps. Additionally, increased flexibility enhances blood flow to the muscles, promoting recovery and overall function.

7



Progressive Muscle Relaxation

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Set aside at least 10-15 minutes daily in a quiet, comfortable spot where you won't be disturbed. Start by tensing the muscles in your feet for 5 seconds, then relax for 30 seconds, and progressively work your way up through the major muscle groups of your body, tensing then relaxing each for 5 and 30 seconds respectively.

TYPICAL STARTING DOSE

10 minutes

Description

Progressive Muscle Relaxation is a relaxation technique involving the systematic tensing and releasing of muscle groups to reduce muscle tension, stress, and anxiety. Regular practice can lead to improved physical and mental relaxation.

Progressive muscle relaxation is a relaxation technique focused on releasing muscle tension. In this technique, you focus on tensing and relaxing different parts of your body, one after the other, to relieve stress [R](#), [R](#)].

It is common to start with the toes and slowly work your way up to the neck and head. Try to focus on a single muscle group at a time (for example, the calf muscles). Tense these muscles for 5-10 seconds, then relax for 20-30 seconds before moving on to the next muscle group [R](#), [R](#)].

How it helps

Progressive Muscle Relaxation helps alleviate muscle cramps by systematically releasing tension in muscle groups, thereby enhancing blood flow and reducing stress-induced factors that may contribute to cramping. Regular practice promotes overall muscle relaxation and can prevent future occurrences.

8



Apply Heat

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Place a warm, not hot, heating pad or a warm wet towel on the affected area for 15-20 minutes at a time. Do this several times a day, ensuring there's at least a 1-hour interval between sessions to avoid skin damage.

TYPICAL STARTING DOSE

15 minutes

Description

Applying heat, such as through heating pads or warm baths, can help relieve muscle tension and soothe pain. It is a common method for managing muscle aches, menstrual cramps, and minor injuries.

People use hot applications to relieve pain, improve blood flow, and more [\[R\]](#), [\[R\]](#).

Types of hot applications include [\[R\]](#), [\[R\]](#):

- Heating pads
- Hot baths
- Saunas
- Hot water bottles

How it helps

Applying heat enhances blood flow to the affected muscle, which reduces stiffness and promotes relaxation of muscle fibers, alleviating the discomfort associated with cramps.

9

Deep Heat Topicals

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Apply a thin layer of a deep heat topical cream or gel to the affected area, ensuring to cover it completely without excessively thick application. Gently massage it into the skin until it is fully absorbed. This should be done up to three times daily, especially before bedtime or after showers when the skin can absorb the treatment more efficiently. Avoid applying it on open wounds or sensitive areas such as the eyes and mouth.

Description

Deep heating topical creams are over-the-counter or prescription products designed to provide localized relief from muscle pain, stiffness, and soreness. These creams typically contain active ingredients like menthol, capsaicin, or salicylates, which create a warming or heating sensation when applied to the skin. The sensation is meant to increase blood flow to the area and promote relaxation of the muscles, helping to alleviate discomfort. Deep heating creams are commonly used for conditions such as muscle strains, arthritis, and sports-related injuries.

How it helps

Deep heat topicals help alleviate muscle cramps by providing localized warmth that increases blood circulation, facilitating muscle relaxation and reducing pain. This enhances tissue flexibility and speeds up recovery, making them effective for managing muscle cramps.

10

Magnesium Chloride

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 200-400 mg of magnesium chloride daily, ideally in divided doses with meals to reduce the risk of stomach upset. It can be taken indefinitely as part of a daily supplementation routine to support magnesium levels in the body.

TYPICAL STARTING DOSE
200 mg

Description

Magnesium chloride is a magnesium supplement that can be used to support magnesium levels in the body. It may help alleviate symptoms of magnesium deficiency, such as muscle cramps and fatigue.

How it helps

Magnesium chloride supplementation can enhance magnesium levels, which is essential for normal muscle contraction and relaxation. By improving magnesium status, it helps reduce the frequency and intensity of muscle cramps effectively.

11



Calcium Magnesium Citrate

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a combined calcium magnesium citrate supplement daily with a meal. The typical dose is around 300-500 mg of magnesium and 500-700 mg of calcium, but you should refer to the product's label for the exact dosage. It is important to divide the doses if the daily amount is high, taking half in the morning and half in the evening with meals to enhance absorption and reduce the risk of gastrointestinal side effects.

TYPICAL STARTING DOSE

300 mg

Description

Calcium magnesium citrate is a dietary supplement that combines calcium and magnesium, two essential minerals for bone health and muscle function. It can help support strong bones and reduce the risk of muscle cramps and spasms.

How it helps

Calcium magnesium citrate aids in muscle function by ensuring adequate levels of calcium and magnesium, which are critical for muscle contraction and relaxation. This supplementation helps prevent the occurrence of muscle cramps by addressing mineral deficiencies that can lead to spasms.

12



Physical Maneuvers

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Perform physical maneuvers such as leg crossing and muscle tensing in a standing position for about 30 seconds to 1 minute, whenever you feel symptoms of dizziness or lightheadedness. Try to do these exercises 2-3 times a day, especially in situations where these symptoms commonly occur.

TYPICAL STARTING DOSE

30 seconds

Description

Physical maneuvers refer to specific movements or techniques performed to achieve various health and fitness goals. These maneuvers can include exercises, stretches, or therapeutic movements designed to improve strength, flexibility, and mobility. The health benefits can include improved heart health and muscular strength, increased joint flexibility, and better balance. The specific benefits depend on the type and purpose of the maneuver, making them valuable tools for achieving specific health and fitness objectives.

How it helps

Physical maneuvers can alleviate muscle cramps by promoting blood circulation and enhancing muscle flexibility, which helps reduce tension and discomfort in affected areas. Additionally, these exercises can strengthen muscles, potentially preventing future cramps.

13



Vitamin K2

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a vitamin K2 supplement once daily with a meal that contains fat, as fat increases its absorption. The recommended dosage can vary depending on the specific supplement but typically ranges from 100 to 300 micrograms per day. It is important to continue this supplementation daily for ongoing benefits to bone and cardiovascular health.

TYPICAL STARTING DOSE

100 mcg

Description

Vitamin K2 is a beneficial nutrient we often lack. It's like a traffic cop for your body, directing calcium to your bones and teeth where it's needed, rather than letting it clog up your arteries and organs. Ensuring you get enough Vitamin K2 boosts your bone and heart health.

How it helps

A study of 523 people on hemodialysis found that vitamin K2 supplementation could decrease the frequency, duration, and severity of muscle cramps [\[R\]](#).

Please note: *Vitamin K can interact with blood thinners (e.g., Coumadin). Make sure to consult your doctor before supplementing with vitamin K or drastically changing your dietary intake.*

14



Magnesium Glycinate

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 200-400 mg of magnesium glycinate daily, preferably in the evening or divided into two doses with meals to enhance absorption. Continue this supplementation routine daily for at least one month to evaluate its benefits on your health.

TYPICAL STARTING DOSE

200 mg

Description

Magnesium glycinate is a form of magnesium that is bound to the amino acid glycine. It is one of the most absorbable forms of magnesium and has been shown to have a number of health benefits, including reducing anxiety, improving sleep, and relieving muscle cramps.

How it helps

Magnesium glycinate effectively alleviates muscle cramps by enhancing muscle relaxation and reducing excitability, primarily through its role in calcium regulation and neuromuscular function. This form of magnesium is highly bioavailable, ensuring optimal absorption and supporting overall muscle recovery.

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.

	Vitamin B12	687 pg/mL		9 Nov 2025
	Magnesium	2.17 mg/dL		9 Nov 2025
	Vitamin D, 25-Hydroxy, Total	58.59 ng/mL		9 Nov 2025
	Creatine Kinase	173 IU/L		9 Nov 2025
	Potassium, Serum	5.2 mmol/L		9 Nov 2025
	Vitamin B6	55 ng/mL		13 Jan 2026
	Calcium	9.2 mg/dL		9 Nov 2025