

Creatine Kinase

Biohacker Report

REPORT CATEGORY —



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

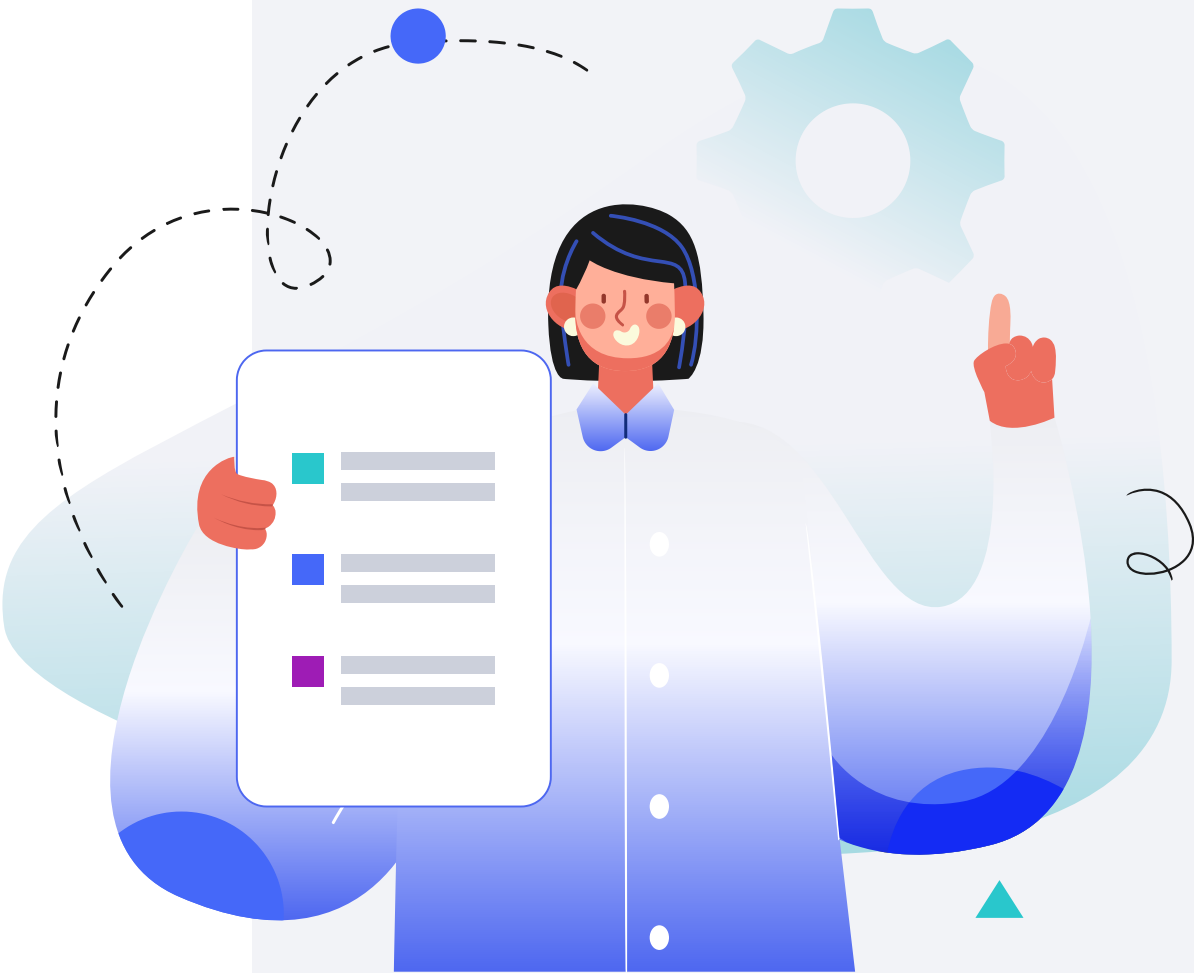
Male

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

[Creatine kinase](#) (CK), also known as creatine phosphokinase, is an enzyme that plays a role in energy production. Higher amounts of CK are found in tissues that use a lot of energy. These tissues also have specific types of CK. They include [R](#), [R](#):

- Muscles (CK-MM)
- Heart (CK-MB)
- Brain (CK-BB)

When a tissue is damaged, these enzymes may leak into the blood. Measuring their blood levels helps pinpoint the location of the damage.

Factors Influencing Creatine Kinase

[Creatine kinase](#) (CK), also known as creatine phosphokinase, is an enzyme that plays a role in energy production. Higher amounts of CK are found in tissues that use a lot of energy, such as the muscles [\[R\]](#), [\[R\]](#).

Up to **40%** of people’s differences in CK levels may be due to genetics [\[R\]](#).

Creatine kinase levels vary greatly by ethnicity — they are around **70%** higher in healthy African Americans, compared to people of European descent! Healthy black men and women may have higher values than the currently recognized normal range [\[R\]](#), [\[R\]](#), [\[R\]](#).

People who have greater muscle mass may have **higher CK levels**. That is why men usually have higher values than women [\[R\]](#), [\[R\]](#), [\[R\]](#).

CK is released and enters the blood when tissues are damaged. Hence, elevated levels of this enzyme may suggest [\[R\]](#), [\[R\]](#):

- Sports injury
- Heart damage
- Brain damage
- Muscle disease

Please keep in mind this report only shows your genetic predisposition to CK levels. Higher levels here don’t necessarily mean that you have high CK levels.



Predisposed to typical creatine kinase levels based on 222 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
CKM	rs149354459	CC
CKM	rs11559024	TT
CKM	rs17357122	GG
CPN1	rs61751507	CC
CD163L1	rs7136716	AG
KLF5	rs7318906	GG
LILRB5	rs12975366	TC
CD163L1	rs7305678	GT
DBT	rs148081884	AA
GPAM	rs7896477	TT
SLC2A5	rs61785813	GG
/	rs181256170	TT
SORT1	rs139907312	GG
LRRC7	rs74848658	GG
SLC2A1	rs180989327	TT
TEX36	rs78521018	GG
AIDA	rs113161870	AA
ADGRL2	rs868723	GG
FYB2	rs12081418	CC
UBXN11	rs189797544	CC
LMO4	rs191835412	GG
BRINP3	rs56326418	AA
NOC2L	rs144137219	GG
WDR64	rs79430550	GG
SLC2A5	rs6677822	CC
/	rs141148666	AA
KIF14	rs71635505	CT
PDCD11	rs17735658	AG
CD163L1	rs117692263	TT
/	rs393600	AA
PDE4B	rs144068685	TT
NFIA	rs75447844	CC

GENE	SNP	GENOTYPE
ZRANB1	rs6597861	AA
EPHB2	rs72879164	AA
ECHDC3	rs74906943	GG
INPP5A	rs117245100	CC
HLX	rs76814849	TT
AFAP1L2	rs138068712	TT
IGSF3	rs142056447	CC
CACNA1E	rs79193643	GG

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	Avoid Strenuous Activity	2	BCAAs (Branched-Chain Amino Acids) 5 g
3	Creatine 4 g	4	Omega-3 (Fish Oil) 2000 mg
5	Low-Level Laser Therapy (LLLT) 30 seconds	6	Whole-Body Vibration 15 minutes
7	L-Carnitine 1 g	8	Vitamin E 200 iu
9	Whey Protein 25 g	10	Hydroxymethylbutyrate (HMB) 3 g
11	Dietary Antioxidants	12	Dietary Protein
13	Tomato	14	Vitamin C 2000 mg
15	Coenzyme Q10 (CoQ10) 100 mg	16	Compression Therapy
17	Sleep for 7+ Hours	18	Maintain Optimal Vitamin D Levels 1000 iu
19	Pomegranate Juice	20	Keto Diet
21	Curcumin Theracurmin 180 mg	22	American Ginseng 200 mg
23	Melatonin 500 mcg	24	Curcumin 500 mg
25	Saffron 20 mg	26	Prunes
27	Ashwagandha 120 mg	28	D-Ribose 15 g
29	Spirulina 500 mg	30	Date Seeds
31	Dietary Lycopene	32	Curcumin Longvida 1 g

33	Quercetin	250 mg	34	Beetroot	
35	Sulforaphane	30 mg	36	Rhodiola	500 mg
37	Cocoa				

1



Avoid Strenuous Activity

IMPACT

5 / 5

EVIDENCE

5 / 5

How to implement

Refrain from participating in high-intensity physical activities such as running, heavy weightlifting, and high-impact sports. Opt instead for low-impact exercises like walking, swimming, or yoga. It's important to listen to your body's signals and rest as needed, avoiding these strenuous activities until advised otherwise by a health professional.

Description

Avoiding strenuous physical activity in certain medical conditions or during illness can help prevent injury and promote better recovery. It allows the body to conserve energy and supports the healing process.

Strenuous activity is physical activity that requires a lot of effort. Exercise done at 70-85% of a person’s heart rate is considered strenuous. Examples include [\[R\]](#):

- Running, cycling, or swimming at high speed
- Running or hiking uphill
- Jumping rope
- Single tennis
- Sports that involve a lot of running (soccer, basketball, hockey, etc.)

On the other hand, strenuous daily activities include [\[R\]](#):

- Lifting and carrying heavy objects
- Gardening with heavy digging
- Shoveling snow
- Fast dancing

How it helps

Creatine kinase is a marker of exercise-induced muscle damage. In line with this, strenuous exercise such as resistance training to muscle failure, cycling, football, or soccer may cause greater increments in creatine kinase than lighter forms of exercise [\[R, R, R, R\]](#).

Exercise-induced muscle damage may cause greater creatine kinase increments in men compared to women and in adults compared to youths [\[R, R\]](#).

Preconditioning may decrease creatinine kinase levels 24-96 hours after exercise [\[R, R\]](#).

Strenuous activity can lead to muscle damage, resulting in a release of creatine kinase into the blood.

2



BCAAs (Branched-Chain Amino Acids)

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Take a BCAA supplement that provides about 5-10 grams of branched-chain amino acids, divided into 2-3 doses per day, preferably around your workout times or between meals. This regimen can be followed daily, especially on training days for muscle support and recovery.

TYPICAL STARTING DOSE

5 g

Description

BCAAs, or **branched-chain amino acids**, are a group of three essential amino acids: **leucine**, **isoleucine**, and **valine**. They are found in dietary protein sources, especially meat, dairy, and legumes.

BCAAs, or **branched-chain amino acids**, are a group of three essential amino acids: **leucine**, **isoleucine**, and **valine**. They are found in dietary protein sources, especially meat, dairy, and legumes [R].

BCAAs play a vital role in protein synthesis, muscle growth, and energy production. People use BCAA supplements to support exercise and muscle performance, liver health, and more [R, R].

How it helps

Supplementation with BCAAs may lower indirect muscle damage markers such as creatine kinase (by 71.55-145.04 U/L) at 24-48 hours post-exercise [R, R, R].

3



Creatine

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Take 4 grams of creatine supplement daily, ideally mixed with water or juice. This dosage can be maintained consistently without needing specific periods of cycling on or off.

TYPICAL STARTING DOSE

4 g

Description

Creatine is a popular dietary supplement among athletes and bodybuilders, known to enhance muscle performance during short bursts of high-intensity activities. It may help improve exercise performance and support muscle growth when used as directed.

[Creatine](#) is a compound naturally produced by the body. It’s stored in the muscles and brain [\[R\]](#).

During exercise, creatine is released to boost performance and help build muscles. For this reason, it’s a popular supplement among athletes [\[R, R\]](#).

Sources of creatine include [\[R\]](#):

- Red meat
- Seafood
- Supplements

How it helps

Supplementation with creatine may lower creatine kinase levels overall and at 48-96 hours post-exercise. However, it may increase them 24 hours after exercise [\[R, R, R\]](#).

4



Omega-3 (Fish Oil)

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take 1-2 g of omega-3 (fish oil) supplement daily, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

2000 mg

Description

Omega-3 fatty acids are essential fats found in fatty fish like salmon, flaxseeds, and walnuts. They are known for their potential cardiovascular and brain health benefits, including reducing the risk of heart disease and supporting cognitive function.

[Omega-3 fatty acids](#) are some of the healthiest fats we can eat. They help lower inflammation and protect the heart, brain, and eyes. Our bodies produce less omega-3s than we need for optimal health, so it's important to get enough through food or supplements [\[R\]](#), [\[R\]](#), [\[R\]](#).

There are three major types of omega-3s: ALA, EPA, and DHA [\[R\]](#), [\[R\]](#).

Fatty fish are rich in EPA and DHA. They include [\[R\]](#):

- Salmon
- Tuna
- Herring
- Sardines

For optimal protection, try to get at least **two servings of fatty fish per week**. Fish oil supplements are available for those who don't eat fish regularly [\[R\]](#).

How it helps

Supplementation with omega-3 fatty acids may lower creatine kinase levels after exercise in healthy individuals [\[R\]](#), [\[R\]](#).

5



Low-Level Laser Therapy (LLLT)

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Use a low-level laser therapy device, as directed by its manual or a healthcare professional, on the affected area. Generally, treatment involves applying the laser for a specified duration, often between 30 seconds to several minutes, per treatment area. Sessions can be conducted 2-3 times per week for a period of 4-12 weeks, depending on the condition being treated and the device used.

TYPICAL STARTING DOSE

30 seconds

Description

Low-level laser therapy (LLLT), also known as photobiomodulation, is a type of light therapy that uses low-intensity lasers to promote healing. It has been shown to be effective in treating a variety of conditions, including pain, inflammation, and wound healing.

How it helps

Pre-application of low-level laser therapy may improve muscle endurance and promote recovery from muscle strength and injury (including creatine kinase) in athletes and sedentary populations. However, not all studies found this effect [R, R, R].

6



Whole-Body Vibration

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Stand, sit, or lie on a machine with a vibrating platform for about 15 minutes a day, three times a week. Make sure to start with a lower intensity and gradually increase as you get more accustomed to the vibrations.

TYPICAL STARTING DOSE

15 minutes

Description

Whole-body vibration involves standing, sitting, or lying on a vibrating platform to stimulate muscle contractions. It's used in fitness routines and rehabilitation for improving muscle strength, circulation, and balance, and may benefit conditions like osteoporosis. No specific chemical compound or nutrient is associated with whole-body vibration.

Whole-body vibration is a form of exercise and treatment utilizing a vibrating platform upon which a person stands or performs various exercises. It creates vertical, oscillating vibrations with frequencies and amplitudes that can be controlled by the user [R].

Whole-body vibration is used for a variety of purposes, including [R]:

- Weight loss
- Boosting strength
- Improving balance/coordination
- Boosting mood

How it helps

In people with delayed-onset muscle soreness, whole-body vibration training may reduce creatine kinase levels at 24-48 hours post-exercise and other markers of muscle damage while reducing pain [R, R, R].

7



L-Carnitine

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Take 500 mg of L-carnitine supplement daily with a glass of water, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

1 g

Description

L-carnitine is an amino acid-like compound that plays a role in energy metabolism and helps prevent toxic substances from building up in cells. It is often used in dietary supplements for its potential to support muscle recovery, reduce fatigue, and enhance athletic performance.

[L-carnitine](#) is a compound that helps you burn fat. It also prevents toxic substances from building up in cells [\[R\]](#).

Your body can usually make enough carnitine to meet its needs. You can also get it from **meat and dairy products** [\[R\]](#).

People use L-carnitine for [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Heart problems
- Overactive thyroid
- Fertility problems
- Blood sugar control
- Weight control

How it helps

Supplementation with L-carnitine may decrease LDH levels 24 hours post-exercise. However, it may show no effects beyond this period [\[R\]](#).

8



Vitamin E

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Take 200 IU of Vitamin E daily as a supplement, preferably with a meal that contains fat to enhance absorption.

TYPICAL STARTING DOSE

200 iu

Description

Vitamin E is a fat-soluble antioxidant found in various foods, such as nuts and seeds. It is known for its ability to protect cells from oxidative damage, support immune function, and may play a role in skin health. Vitamin E supplements are used to bolster antioxidant defenses and may be beneficial for conditions related to oxidative stress.

[Vitamin E](#) is an antioxidant important for the immune system and for heart health [\[R\]](#).

Plant-based foods have the most vitamin E. These include [\[R\]](#):

- Wheat germ
- Sunflower seeds
- Almonds
- Plant oils

Adults need about **15 mg** of vitamin E per day [\[R\]](#).

How it helps

Supplementation with low-dose (below 500 IU) vitamin E may prevent exercise-induced muscle damage, as shown by decreased creatine kinase levels [\[R\]](#).

9



Whey Protein

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Mix one scoop (approximately 25-30 grams) of whey protein powder with 8-12 ounces of water, milk, or your preferred beverage. Consume this drink 1-2 times per day, ideally post-workout or as a meal replacement.

TYPICAL STARTING DOSE

25 g

Description

Whey protein is a complete protein derived from milk during cheese production. It is rich in essential amino acids and is used to support muscle recovery, promote muscle growth, and provide a convenient protein source for athletes and fitness enthusiasts.

Whey is the liquid that separates from milk when cheese is made. [Whey protein](#) is full of amino acids (protein building blocks) that the body needs [\[R\]](#), [\[R\]](#).

Whey protein usually comes in the form of a powder that can be added to soft foods and drinks. People often use it to help with [\[R\]](#), [\[R\]](#):

- Athletic performance
- Nutritional deficiencies

How it helps

Whey protein supplementation may lower creatine kinase levels by 47.05 U/L in athletes [\[R\]](#).

10



Hydroxymethylbutyrate (HMB)

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Take hydroxymethylbutyrate (HMB) as a supplement in a dose of 3 grams per day. This can be split into three 1-gram servings taken with meals throughout the day to help with muscle strength and body composition. Continuation typically ranges from weeks to months, depending on fitness goals and personal response.

TYPICAL STARTING DOSE

3 g

Description

HMB is a metabolite of the amino acid leucine. It is often used as a dietary supplement to support muscle recovery and reduce muscle breakdown during intense physical training.

HMB, or beta-hydroxy-beta-methylbutyrate, is a compound naturally produced in the body and available as a supplement. It helps build muscle tissue.

Athletes use HMB to support muscle growth, reduce muscle damage, and enhance recovery.

How it helps

Supplementation with beta-hydroxy-beta-methylbutyrate may lower creatine kinase levels by 60.71 U/L in adults recovering from exercise-induced muscle damage [\[R\]](#).

11



Dietary Antioxidants

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Incorporate foods rich in antioxidants, such as fruits (berries, oranges, plums), vegetables (spinach, kale, bell peppers), nuts (walnuts, almonds), and seeds (flaxseeds, chia seeds) into your daily meals. Aim for at least 5 servings of fruits and vegetables per day, ensuring a variety of colors to cover different antioxidants.

Description

Dietary antioxidants are compounds found in foods that help neutralize harmful molecules called free radicals, potentially reducing the risk of oxidative stress-related diseases and supporting overall health. Examples include vitamins C and E, beta-carotene, and polyphenols.

Our cells sometimes produce molecules called **reactive oxygen species (ROS)** [\[R\]](#).

High levels of ROS can cause [oxidative stress](#) and damage our cells. Oxidative stress plays a role in many health conditions, including [\[R\]](#):

- High blood sugar
- Type 2 diabetes
- Heart disease

Antioxidants are substances that help combat ROS [\[R\]](#).

Antioxidants are found in many plants. Good sources include [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Fruits like tomatoes, berries, and pomegranates
- Vegetables like onions, spinach, and celery
- Chocolate
- Olive oil
- Wine

How it helps

Consuming anthocyanin-rich foods before exercise may lower creatine kinase levels 48 hours post-exercise [\[R\]](#).

12



Dietary Protein

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Include a variety of protein sources such as meat, fish, eggs, dairy, beans, and nuts in your diet every day, aiming for at least 0.8 grams of protein per kilogram of body weight. For more active individuals or those looking to build muscle, increase intake to 1.2 to 2.0 grams per kilogram of body weight daily, spread out over all meals to maximize absorption.

Description

Protein is essential for building and repairing tissues, supporting muscle growth, and maintaining overall bodily functions. Adequate protein intake is crucial for overall health and well-being.

Foods that are high in protein include:

- Eggs
- Nuts
- Beef
- Chicken
- Fish
- Yogurt
- Tofu
- Pork
- Cottage cheese

How it helps

Increasing dietary protein intake before resistance exercise may attenuate the increment in creatine kinase levels at 48 hours post-exercise [\[R\]](#).

13



Tomato

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

Incorporate fresh or cooked tomatoes into your daily diet. This can be achieved by adding them to salads, sandwiches, pastas, and sauces or simply eating them on their own. Aim for at least one serving (approximately 1 medium-sized tomato or 1/2 cup of chopped or cooked tomatoes) per day.

Description

Tomatoes are a fruit grown widely in numerous varieties, and are rich in vitamins C and K, as well as the antioxidant lycopene, which may contribute to heart health and protect against certain chronic diseases when incorporated into a balanced diet.

Tomato (*Solanum lycopersicum*) is a fruit originally from the Andes in South America. It is usually consumed as a vegetable in juices, sauces, or fresh. Tomato is an important source of [R]:

- [Vitamin C](#)
- Potassium
- Antioxidants (e.g., [lycopene](#))
- Vitamin B9 ([folate](#))

Tomato is traditionally used for [R, R]:

- High cholesterol
- High blood pressure

How it helps

In a study involving 15 anaerobically trained athletes with elevated LDH and CK levels, tomato juice containing lycopene was administered during and after exercise for 2 months. This intervention significantly reduced LDH and CK levels compared to carbohydrate supplementation [R].

14



Vitamin C

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Take 500-2000 mg of vitamin C supplement daily. It can be taken at any time of the day, with or without food, according to personal preference or tolerance.

TYPICAL STARTING DOSE

2000 mg

Description

[Vitamin C](#) is an essential nutrient. This means that our bodies can’t produce it on their own, so we have to get it from food or supplements [\[R\]](#).

Foods rich in Vitamin C include: [\[R\]](#)

- Citrus Fruits
- Peppers
- Brussel sprouts
- Kiwi
- Broccoli
- Tomato
- Cantaloupe
- Cauliflower
- Spinach

Vitamin C has antioxidant properties. It supports immunity, heart health, and wound healing [\[R\]](#), [\[R\]](#).

Vitamin C deficiency is called *scurvy*. In the past, many sailors suffered from it [\[R\]](#).

How it helps

Supplementation with vitamin C may lower creatine kinase levels in the heart after a percutaneous coronary intervention or coronary artery bypass grafting [\[R\]](#).

However, it may be ineffective at lowering the levels of this enzyme after strenuous exercise [\[R\]](#), [\[R\]](#).

15



Coenzyme Q10 (CoQ10)

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Take a 100 mg Coenzyme Q10 (CoQ10) supplement once daily with a meal that contains fat for better absorption.

TYPICAL STARTING DOSE

100 mg

Description

Coenzyme Q10 (CoQ10) is a naturally occurring antioxidant that plays a crucial role in cellular energy production. It is often taken as a supplement to support heart health, improve energy levels, and provide antioxidant protection, especially for individuals with certain medical conditions or as they age.

[Coenzyme Q10](#) (CoQ10) is a compound that helps enzymes work better. By doing so, CoQ10 helps improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Energy levels
- Antioxidant protection
- Heart health
- Muscle strength
- Blood sugar control

The amount of CoQ10 made by your body decreases as you get older. Luckily, you can also get it from food or supplements. Good sources of CoQ10 include [\[R\]](#), [\[R\]](#):

- Organ meats
- Fatty fish
- Whole grains

How it helps

Supplementation with coenzyme Q10 may lower creatine kinase levels after exercise. For every 100-mg/day increase, creatine kinase activity may decrease by 23.07 IU/L [\[R\]](#).

However, it may be ineffective at reducing creatine kinase in people with statin-induced myopathy [\[R\]](#), [\[R\]](#), [\[R\]](#).

Coenzyme Q10 assists in maintaining normal cellular energy production, which can support muscle recovery and endurance.

16



Compression Therapy

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Wear compression stockings or sleeves daily, especially during long periods of standing or sitting. Choose a compression level appropriate for your condition (mild, moderate, or high), as advised by a healthcare professional. Start wearing them in the morning before swelling occurs and keep them on until bedtime.

Description

Compression therapy involves wearing specialized garments that apply pressure to the limbs, promoting better circulation and reducing swelling. It is commonly used to manage conditions like venous disorders and can help alleviate symptoms, improve vascular health, and enhance overall well-being.

In compression therapy, different methods are used to apply pressure to the legs. These methods include [\[R\]](#):

- Bandages
- Wraps
- Compression stockings
- Pneumatic pressure devices

Compression therapy supports blood flow. It may help [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Prevent blood clots and deep vein thrombosis (DVT)
- Reduce some kinds of swelling
- Reduce symptoms of restless legs syndrome

How it helps

Compression garments may lower the levels of creatine kinase and other muscle damage markers. However, the results are mixed [\[R\]](#), [\[R\]](#).

17



Sleep for 7+ Hours

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Ensure you allocate enough time in your schedule to achieve a minimum of 7 hours of sleep each night. This might involve going to bed earlier or adjusting your evening routine to promote relaxation and make it easier to fall asleep.

Description

Optimizing sleep involves adopting healthy sleep habits and creating a sleep-conducive environment to ensure restorative and sufficient sleep duration. It supports cognitive function, mood stability, and overall physical health. Most experts recommend getting **at least 7 hours of good-quality sleep each night**.

[Sleep supports your body and mind](#) [R, R]. More precisely, sleep helps:

- Support brain health [R, R]
- Maintain a healthy weight and appetite [R, R, R]
- Regulate blood pressure [R, R]
- Balance blood sugar [R, R]

Ways to sleep better include [R]:

- Reducing your bright light exposure (screen time) in the evenings
- Sticking to a regular sleep schedule
- Avoiding hunger or large meals before bed
- Avoiding nicotine, caffeine, and alcohol before bed
- Maintaining a sleep area that’s cool, dark, and quiet

How it helps

REM sleep deprivation may increase brain creatine kinase levels, while 24 hours of sleep recovery may restore the levels of this marker [R].

However, sleep may not help with creatine kinase normalization during muscle recovery [R, R].

18



Maintain Optimal Vitamin D Levels

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Check your vitamin D levels, they should ideally be in the 30-66 ng/mL range. If your levels are lower than that, take a vitamin D supplement, 1000-4000 IU daily, to reach an optimal range.

TYPICAL STARTING DOSE
1000 iu

Description

Vitamin D, often referred to as the "sunshine vitamin," can be synthesized by the skin when exposed to sunlight, as well as being found in fish, eggs, and fortified milk. It helps regulate calcium absorption, promoting strong bones and a healthy immune system. Vitamin D deficiency can lead to conditions like rickets in children and osteoporosis in adults.

Your body needs [vitamin D](#) for strong bones. Vitamin D also plays a role in [\[R\]](#):

- Mood
- Immunity
- Heart health
- Blood sugar control

[Sunlight](#) is our main source of vitamin D. Experts recommend getting at least **5-15 minutes of midday sun, 2-3 times per week**. People with darker skin and those living at high latitudes may need longer periods of sun exposure [\[R\]](#), [\[R\]](#).

Foods like fish, eggs, and fortified milk provide small amounts of vitamin D. **People lacking vitamin D should consider taking a supplement** [\[R\]](#).

How it helps

Patients with idiopathic inflammatory myopathy and low vitamin D levels may have higher creatine kinase levels [\[R\]](#).

However, supplementation with vitamin D may have no effect on creatine kinase levels in people recovering from exercise [\[R\]](#).

19



Pomegranate Juice

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Drink 8 ounces (about 240 milliliters) of 100% pomegranate juice daily, ideally in the morning to incorporate it into your daily routine. Continue this practice regularly as part of your daily diet.

Description

Pomegranate juice is made from the seeds and pulp of the fruit. It is rich in nutrients, including vitamin C, vitamin K, folate, potassium, and dietary fiber., and provides a source of dietary antioxidants that may provide addition benefits for inflammation and heart health.

[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

In a placebo-controlled trial of 9 elite weightlifters, drinking pomegranate juice before a training session improved the recovery kinetics of creatine kinase and other markers of muscle damage 48 hours after the session [\[R\]](#).

20



Keto Diet

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Adopt a diet that consists of about 70-80% fat, 10-20% protein, and 5-10% carbohydrates. Eliminate or significantly reduce the intake of sugar and starches like bread, pasta, rice, and potatoes, focusing instead on high-fat foods like meats, fatty fish, eggs, butter, and healthy oils, as well as low-carb vegetables like leafy greens. This dietary pattern should be maintained consistently for a period of at least 3-4 weeks to achieve ketosis, after which it can be adjusted based on individual goals and responses.

Description

The keto diet is a high-fat, low-carbohydrate eating plan designed to induce a state of ketosis in the body, where it primarily burns fat for energy. It is often used for weight loss and managing certain medical conditions.

The ketogenic diet, or the ‘keto’ diet, is rich in fat and restricts carb intake [\[R\]](#), [\[R\]](#).

On the ketogenic diet, 50 g of carbs or less are consumed per day. Around 55-80% of the calories come from fat [\[R\]](#).

The ketogenic diet depletes the body of sugars like glucose. When people fast or eat very little carbs, the body makes less insulin. In response, the body starts using fat for energy.

When the body only uses fat for energy, molecules called ketones are formed. This state is called *ketosis*.

The ketogenic diet may help with:

- Seizures [\[R\]](#)
- Excess weight [\[R\]](#)
- Diabetes [\[R\]](#), [\[R\]](#)

How it helps

In a non-placebo-controlled trial of 8 male cyclists, adopting a ketogenic diet during a continuous exercise protocol lowered creatine kinase levels [\[R\]](#).

21



Curcumin Theracurmin

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 90 mg of Theracurmin curcumin twice daily with meals. Continue this regimen for at least 8 weeks to observe potential benefits.

TYPICAL STARTING DOSE

180 mg

Description

Curcumin Theracurmin is another formulation of curcumin designed for enhanced absorption and bioavailability. It may offer various health benefits, including anti-inflammatory and antioxidant effects.

How it helps

In a placebo-controlled trial of 14 untrained young men, supplementation with curcumin Theracurmin (150 mg) before and 12 h after each eccentric exercise bout attenuated creatine kinase increase [\[R\]](#).

Please note: curcumin may interfere with iron absorption due to its iron-chelating properties, potentially exacerbating anemia or making it harder to manage. If you have anemia, consult your healthcare provider before using curcumin or turmeric supplements [\[R\]](#), [\[R\]](#), [\[R\]](#).

22



American Ginseng

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 200-400 mg of American ginseng extract daily, preferably with a meal to enhance absorption. This regimen can be followed continuously for up to 12 weeks, after which a break or reassessment of the need to continue should be considered.

TYPICAL STARTING DOSE

200 mg

Description

American ginseng is a perennial herb native to North America, particularly regions of the United States and Canada. It is valued for its potential health benefits, including immune system support, stress reduction, and enhanced cognitive function, with the primary active compounds being ginsenosides.

[Ginseng](#) is a plant people use to improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Sexual function
- Immunity
- Fatigue
- Attention

There are many different types of ginseng. The most common ones are [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Korean red ginseng, also called Asian ginseng (*Panax ginseng*)
- [American ginseng](#) (*Panax quinquefolius*)
- Chinese notoginseng, also called Sanchi (*Panax notoginseng*)

How it helps

In 2 placebo-controlled trials of 25 physically active men, supplementation with American ginseng extract (1.6 g/day) for 28 days before a downhill running challenge attenuated the increments in creatine kinase, 8-iso-PGF2α, and IL-4 levels due to exercise [\[R\]](#), [\[R\]](#).

23



Melatonin

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 500 mcg of melatonin orally, about 30 minutes before bedtime, to help with sleep. It can be taken daily as needed.

TYPICAL STARTING DOSE

500 mcg

Description

Melatonin is a natural hormone produced by the pineal gland in the brain that helps regulate the sleep-wake cycle. It plays a crucial role in promoting sleep onset and maintaining a consistent sleep pattern, making it a commonly used supplement for managing sleep disorders and jet lag.

[Melatonin](#) is an important sleep hormone. Bright light at night may prevent your body from making enough melatonin [\[R\]](#), [\[R\]](#), [\[R\]](#).

Your body makes melatonin on its own. However, some people take melatonin supplements to help them sleep. It may help with jet lag in particular [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

In a placebo-controlled trial of 24 athletes, supplementation with melatonin (100 mg/day) 30 min before bedtime for 4 weeks reduced the levels of LDH and other muscle damage markers [\[R\]](#).

24



Curcumin

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take a 500 mg curcumin supplement daily with food. To enhance absorption, take it with a meal that contains fats or oils since curcumin is fat-soluble.

TYPICAL STARTING DOSE

500 mg

Description

Curcumin is a compound found in turmeric known for its anti-inflammatory and antioxidant properties. It has been studied for its potential to reduce inflammation, support joint health, and contribute to overall well-being.

[Turmeric](#) is a yellow spice from India. It may reduce inflammation and [oxidative stress](#) [R].

The most important active compound in turmeric is **curcumin**. People use curcumin for [R, R, R, R, R, R]:

- Joint pain
- Hay fever
- Mood
- High blood sugar
- Gut health
- Liver health

How it helps

In a placebo-controlled trial of 28 healthy volunteers, supplementation with curcumin Longvida (400 mg/day) 2 days before to 4 days after exercise-induced muscle damage reduced creatine kinase levels [R].

In a placebo-controlled trial of 14 untrained young men, supplementation with curcumin Theracurmin (150 mg) before and 12 h after each eccentric exercise bout attenuated creatine kinase increase [R].

Curcumin may help due to its anti-inflammatory and antioxidant properties.

Please note: curcumin may interfere with iron absorption due to its iron-chelating properties, potentially exacerbating anemia or making it harder to manage. If you have anemia, consult your healthcare provider before using curcumin or turmeric supplements [R, R, R].

25



Saffron

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 20 mg of saffron supplement daily. This can be taken at any time of the day, with or without food.

TYPICAL STARTING DOSE

20 mg

Description

Saffron is a spice derived from the stigma of the saffron crocus flower, and is native to the Mediterranean and Asia. Its main compounds include crocin, picrocrocin, and safranal, which may contribute to its antioxidant properties and potential mood-enhancing effects.

[Saffron](#) is a yellow spice praised for its color, taste, and potential health benefits [\[R\]](#).

Saffron is rich in antioxidants such as *crocin*. Researchers are looking into its potential benefits for [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Gut conditions
- Heart health
- Mental health

How it helps

In a study with nonactive male university students, 10-day saffron supplementation (300 mg/day) significantly reduced creatine kinase and lactate dehydrogenase levels. Saffron prevented a decline in muscle forces and pain after eccentric exercise, suggesting a preventive effect on delayed-onset muscle soreness [\[R\]](#).

26



Prunes

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Eat 5-6 prunes daily, either as a snack or incorporated into meals, to help improve digestion and potentially bone health. Continue this habit consistently for at least a few weeks to observe benefits.

Description

Prunes are dried plums that are rich in dietary fiber, vitamins, and minerals, particularly potassium and vitamin K, as well as antioxidants. They are often consumed to support digestive health and may help regulate bowel movements.

Prunes are a good source of omega-6 fatty acids, vitamin A and B6, potassium, iron, magnesium, and copper. A ½ cup serving provides 635 mcg or 14%DV.

How it helps

In a trial of 48 postmenopausal women, plasma activities of alanine transaminase, lactate dehydrogenase, and creatine kinase were significantly lower after consuming 50 g/day dried plum for 6 months [R].

Prunes, being rich in antioxidants, may help reduce creatine kinase levels by mitigating oxidative stress and muscle damage.

27



Ashwagandha

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 250-600 mg of ashwagandha supplement daily. It can be consumed with water or a meal, depending on your preference or as advised by a healthcare provider.

TYPICAL STARTING DOSE

120 mg

Description

[Ashwagandha](#) (*Withania somnifera*) is an herb used in traditional Indian medicine. This herb is known as an *adaptogen* because it helps people adapt to stress.

This herb is known as an *adaptogen* because it helps people adapt to stress [R, R].

How it helps

In a placebo-controlled trial of 57 young men, supplementation with ashwagandha (300 mg, 2x/day) for 8 weeks increased muscle strength on the bench press (by 19.6 kg) and leg extension (by 4.7 kg) exercises, muscle size in the arms (by 3.3 cm2) and chest (by 1.9 cm2), and testosterone levels (by 78.2 ng/dL), while reducing exercise-induced muscle damage as indicated by the stabilization of serum creatine kinase (by 157 U/L) and body fat percentage (by 2%) [R].

28



D-Ribose

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take 5 grams of D-Ribose powder mixed with water or juice, three times a day. Start with this dosage for at least 3 weeks to help improve energy levels and heart function, then adjust as needed.

TYPICAL STARTING DOSE

15 g

Description

D-ribose is a sugar molecule that plays a role in energy production in cells. It is sometimes used as a supplement to support muscle recovery, reduce fatigue, and improve exercise performance.

[D-ribose](#) is a sugar involved in the production of energy in the body. It is also the structural basis of DNA and RNA [\[R\]](#).

People use it as a supplement to help with heart disease and [chronic fatigue syndrome](#) [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

In a placebo-controlled trial of 21 untrained men, supplementation with D-ribose before a limb plyometric exercise session lowered creatine kinase levels 24 hours post-exercise [\[R\]](#).

29



Spirulina

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 1-8 g of spirulina supplements daily, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

500 mg

Description

Spirulina is a blue-green algae. It is rich in nutrients like protein, vitamins, and minerals, particularly vitamin B12 and iron, and is a source of antioxidants, chlorophyll, and phycocyanin. It can be found in powdered or tablet form as a supplement, and is often used to boost energy, support the immune system, and enhance overall nutrition. Additionally, spirulina.

[Spirulina](#) is a supplement made from blue-green algae that grows in fresh and marine water [\[R, R\]](#).

Dried spirulina is up to 70% protein. It’s also rich in vitamins, antioxidants, and healthy fats. This makes it a great source of nutrition for both people and livestock [\[R, R, R\]](#).

People use spirulina supplements to reduce [\[R, R\]](#):

- Cholesterol
- Blood pressure
- Blood sugar

How it helps

In a placebo-controlled trial of 17 elite male Rugby Union players, supplementation with spirulina (5.7 g/day) for 7 weeks prevented lipid peroxidation, inflammation, and skeletal muscle damage induced by exhaustive exercise and sped up the restoration of normal F2-Isop, CRP, and CK levels [\[R\]](#).

In a non-placebo-controlled trial of 16 volunteers, supplementing the diet with spirulina for 3 weeks prevented skeletal muscle damage, extended time to exhaustion, and improved antioxidant status [\[R\]](#).

However, spirulina (6 g) failed to confer any beneficial effects on redox status, muscle performance, or damage following a muscle-damaging protocol in a placebo-controlled trial of 24 healthy, recreationally trained men [\[R\]](#).

30



Date Seeds

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Grind dried date seeds into a fine powder and take half to one teaspoon of this powder mixed with water or added to your smoothie once daily. Continue this practice daily for at least a month to evaluate its benefits.

Description

Date seeds, often discarded, contain potential health benefits, including antioxidants and fiber. They can be ground into a powder and used in various culinary applications or herbal remedies.

How it helps

In a placebo-controlled trial of 36 recreational runners, supplementation with date seed (26 g/day) during HIIT workouts for 2 weeks lowered creatine kinase and other markers of muscle damage [\[R\]](#).

31



Dietary Lycopene

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate foods rich in lycopene into your daily diet. This includes consuming at least one serving per day of tomatoes, watermelon, grapefruit, or papaya. Considering lycopene is better absorbed when cooked and with a small amount of healthy fats, include dishes like cooked tomato sauce with olive oil in your meals several times a week.

Description

Lycopene is a powerful antioxidant found in tomatoes and other red or pink fruits and vegetables. Consuming lycopene-rich foods may help reduce the risk of chronic diseases and support heart and prostate health.

[Lycopene](#) is a bright red substance that gives color to a number of fruits such as [R](#), [R](#):

- Tomato
- Watermelon
- Papaya
- Apricot

Lycopene has antioxidant properties. It may help support [R](#), [R](#), [R](#):

- Heart health
- Prostate health
- Cognition

How it helps

According to a small study in 15 athletes, consuming tomato juice or powder (providing 15-30 mg/day lycopene for 8 weeks) may reduce creatine kinase levels [R](#).

32



Curcumin Longvida

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take 400-1000 mg of Longvida curcumin once daily, preferably with a meal to enhance absorption. It's recommended to continue this supplement intake daily for at least 8-12 weeks to evaluate its benefits.

TYPICAL STARTING DOSE

1 g

Description

Curcumin Longvida is a specialized formulation of curcumin designed for improved bioavailability and brain health support. It has been studied for its potential cognitive benefits and ability to cross the blood-brain barrier.

How it helps

In a placebo-controlled trial of 28 healthy volunteers, supplementation with curcumin Longvida (400 mg/day) 2 days before to 4 days after exercise-induced muscle damage reduced creatine kinase levels [\[R\]](#).

Curcumin Longvida may help due to its anti-inflammatory and antioxidant properties.

Please note: curcumin may interfere with iron absorption due to its iron-chelating properties, potentially exacerbating anemia or making it harder to manage. If you have anemia, consult your healthcare provider before using curcumin or turmeric supplements [\[R\]](#), [\[R\]](#), [\[R\]](#).

33



Quercetin

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 250-1000 mg of quercetin supplement daily with a glass of water, preferably with a meal to aid in its absorption.

TYPICAL STARTING DOSE

250 mg

Description

Quercetin is a natural plant flavonoid found in various foods, particularly in fruits and vegetables like apples, onions, and broccoli. It is used as a dietary supplement and is valued for its potential antioxidant and anti-inflammatory properties.

[Quercetin](#) is a **plant-based antioxidant**. It supports the immune system and helps lower inflammation [\[R\]](#), [\[R\]](#).

Good sources of quercetin include [\[R\]](#):

- Apples
- Onions
- Tea

People mainly use quercetin supplements to relieve allergies [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

In a placebo-controlled trial of 12 young men, ingesting quercetin (1 g/day) for 14 days before an eccentric-induced muscle-damaging protocol significantly reduced plasma markers of cell damage (including creatine kinase) and inflammatory cytokines during the recovery period [\[R\]](#).

Two studies by the same authors came to similar conclusions [\[R\]](#), [\[R\]](#).

Please note: *quercetin may inhibit the production of the thyroid hormone T4 (thyroxine). Individuals with thyroid disorders, particularly hypothyroidism or low T4 levels, should exercise caution when using quercetin and always consult with a healthcare provider before taking this supplement [\[R\]](#).*

Please note: *quercetin may interfere with iron absorption due to its iron-chelating properties, potentially exacerbating anemia or making it harder to manage. If you have anemia, consult your healthcare provider before using quercetin supplements [\[R\]](#).*

34



Beetroot

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate beetroot into your diet by eating it raw in salads or drinking beetroot juice. Aim for a serving of about one small beetroot or 200-250 ml of beetroot juice daily. You can maintain this dietary practice consistently as part of your regular diet.

Description

Beetroot is a vegetable rich in dietary nitrates, which may help improve cardiovascular health and exercise performance.

How it helps

A study of 32 runners associated regular beetroot intake with lower levels of creatine kinase and other muscle damage markers after completing a race [\[R\]](#).

35



Sulforaphane

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a sulforaphane supplement, typically available in capsule form, with a dosage ranging from 30 to 60 milligrams per day. It is generally taken once daily, with or without food, according to the product's label instructions or a healthcare provider's advice. Continue this regimen daily for as long as you seek its benefits, but consult a healthcare provider for long-term use guidance.

TYPICAL STARTING DOSE

30 mg

Description

Sulforaphane is a natural compound found in cruciferous vegetables like broccoli and cauliflower. It is known for its potent antioxidant and anti-inflammatory properties, potentially offering protective effects against chronic diseases and promoting overall health.

How it helps

In a placebo-controlled trial of 10 healthy young men, supplementation with sulforaphane (30 mg/day) for 4 weeks decreased creatine kinase and IL-6 levels caused by heavy resistance exercise [\[R\]](#).

36



Rhodiola

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 500 mg of rhodiola supplement daily, preferably in the morning to avoid potential interference with sleep.

TYPICAL STARTING DOSE

500 mg

Description

Rhodiola is a plant native to the arctic regions of Europe and Asia, where it's traditionally used to enhance stamina, combat stress and fatigue, and improve mental performance and resilience in harsh environments. Its main compounds include rosavins and salidroside.

[Rhodiola](#) (*Rhodiola rosea*) is a plant that grows in the mountains of eastern Europe and Asia [\[R\]](#).

Rhodiola is an *adaptogen*, meaning that it may help you adapt to stress. According to early research, this herb may help with [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Fatigue
- Burnout
- Low mood

How it helps

In a placebo-controlled trial of 14 trained male athletes, supplementation with rhodiola for 4 weeks reduced blood lactate and plasma creatine kinase levels after a cardio-pulmonary exhaustion test [\[R\]](#).

37



Cocoa

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate 30-60 grams of high-quality dark chocolate (with at least 70% cocoa content) into your daily diet. Enjoy it as a snack or dessert to reap the potential heart health benefits.

Description

[Cocoa](#) comes from the beans of the *Theobroma cacao* tree. It is found any many foods and drinks, and people have also used it as a medicine for thousands of years. The numerous active components of cocoa can help with weight control, fatigue, mood, and digestion, among others.

[Cocoa](#) comes from the beans of the *Theobroma cacao* tree. It’s often used for making chocolate, hot chocolate, and pastries. People have also used it as a medicine for over a thousand years [\[R\]](#), [\[R\]](#).

Cocoa contains many active components that likely help [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Control weight
- Lower fatigue
- Boost mood
- Improve digestion
- Balance blood sugar
- Support heart health

Note that pure cocoa is likely a healthier choice than chocolate. If you eat chocolate, choose dark chocolate with more cocoa and less sugar and fat.

How it helps

Elite football players had lower antioxidant power and higher oxidative stress compared to controls, along with increased muscle damage markers in a study. After 30 days of dark chocolate intake (>85% cocoa), athletes had improved antioxidant power and reduced muscle damage markers, including creatine kinase [\[R\]](#).

Cocoa is rich in flavonoids, which have antioxidant properties and can help reduce muscle damage.

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.

