

Strength

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

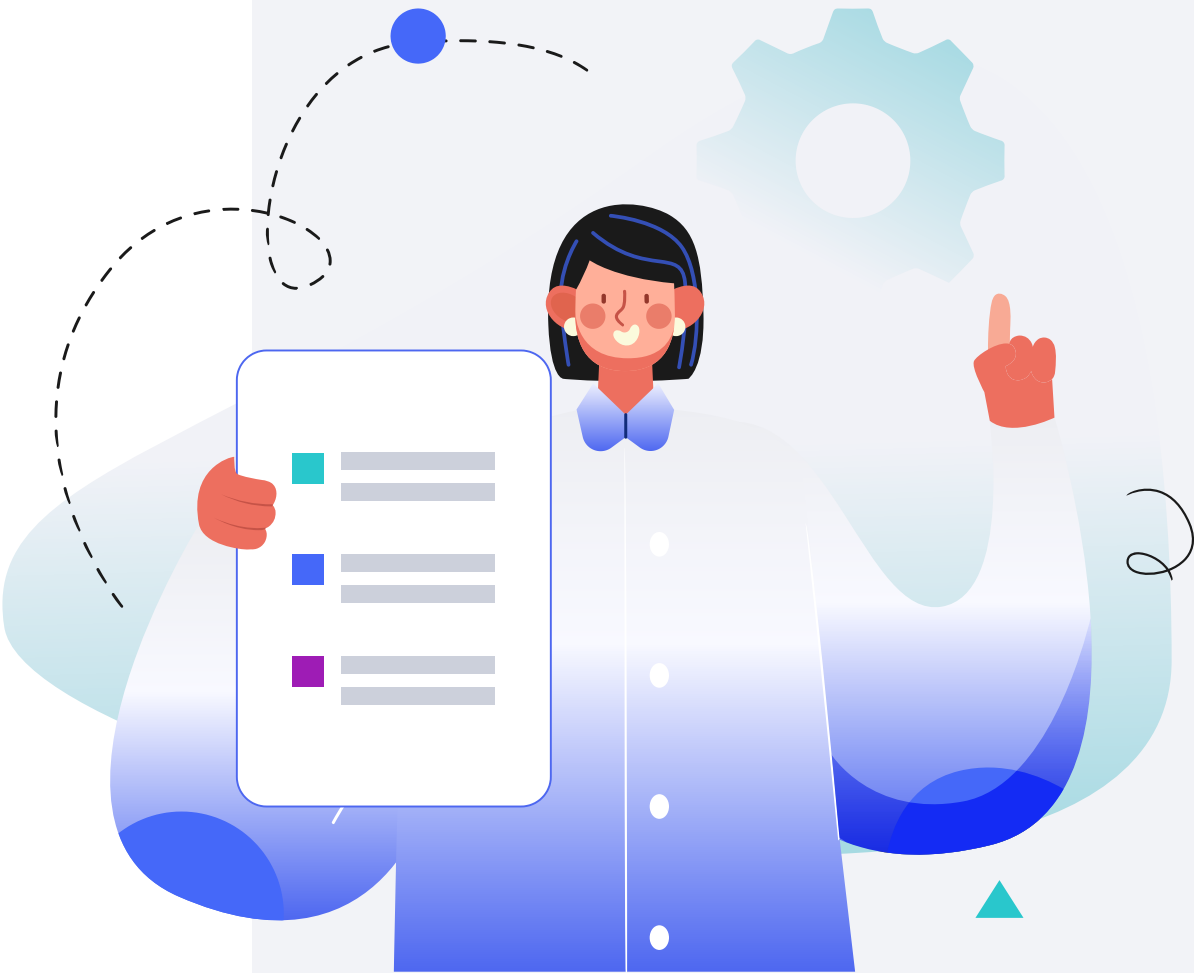
Male

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

There are three main types of muscle performance [\[R\]](#):

- **Strength: the maximum force applied in one movement (e.g., in a single weight lift)**
- Power: the ability to produce rapid, intense movements (e.g., sprinting, jumping, throwing)
- Endurance: the ability to produce less intense movements for a longer period of time (e.g., cycling, running, swimming)

Muscles can grow stronger through a process called **hypertrophy**. That is when stressing the muscle (e.g. by lifting weights) causes microscopic damages in the muscle, which signal for a repair response. Once repaired, the muscles become bigger and stronger and better adapted to handle repeated stress [\[R\]](#).

However, **bigger muscles are not necessarily stronger**. Increased strength can also result from better communication between your brain and your muscles, or improved coordination between different muscles in your body [\[R\]](#), [\[R\]](#), [\[R\]](#).

Physical strength is intrinsically linked to healthy aging. Experts recommend **about 20-30 min of strength training, 2-3 times/week to keep your body strong**. Combining resistance training with cardio (at least 150 min/week) is often recommended for optimal health [\[R\]](#), [\[R\]](#), [\[R\]](#).

Genetics of Strength

PERSONALIZED TO GENES

Based on the genetic variants we looked at, you likely have typical strength.

To build your strength, consider taking part in strength (resistance) training and getting more protein in your diet. Try to combine it with endurance and power training for an optimal balance.

Strength is the maximum force applied in one movement (e.g., in a single weight lift) [R].

Some people are stronger than others. Up to **85% of people’s differences in muscle strength may be due to genetics**. Genes associated with strength affect [R, R, R, R, R, R]:

- Muscle composition (fast-twitch vs. slow-twitch muscle fibers)
- Muscle repair and regeneration
- Hormones and growth factors
- Energy metabolism

However, other factors, such as **fitness, diet and age**, also strongly affect your muscle power [R, R].

Strength training is important not just for your muscles, but also for your bones, cognition, and your overall health. Muscle strength is a predictor of healthy aging and longevity [R, R].

Some tips that may help you build stronger muscles include [R]:

- Resistance training. You can train with weights or do bodyweight exercises (e.g., pushups, planks). Aim for 2 or more sessions of strength training per week.
- Using a weight or resistance level that is heavy enough to tire your muscles after 12-15 repetitions. As your strength bulbs over time, you should be able to slowly increase the weight you are lifting.



TYPICAL

Predisposed to typical strength based on 7,133,253 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
MTHFR	rs1801131	TT
SLC16A1	rs1049434	TT
LRPPRC	rs10186876	GG
PPARG	rs1801282	CC
LEMD2	rs12055409	GG
IL11RA	rs41274853	GG
BDNF	rs10501089	CC
HIF1A	rs11549465	CC
FTO	rs9939609	TT
VEGFA	rs2010963	GG
GABPB1	rs7181866	AA
/	rs9320823	CT
PITX3	rs2273555	AG
IGF2	rs680	CT
ACTN3	rs1815739	TC
ADRB2	rs1042713	GA
ADRB2	rs1042714	GC
BDKRB2	rs1799722	CT
AGT	rs699	GG
TBC1D7	rs6905419	CC
ZNF608	rs4626333	CC
ACVR1B	rs2854464	AA
AMPD1	rs17602729	GG
TRHR	rs16892496	AA

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

- Eating a protein-rich diet to support muscle growth and repair
- Allowing plenty of rest for each muscle group to maximize strength gains.

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	Power Training	1 hour	2	Nordic Walking	30 minutes
3	Aquatic Exercise	1 hour	4	Strength Training	1 hour
5	Maintain Optimal Vitamin D Levels	1000 iu	6	Creatine	2 g
7	Whole-Body Vibration	15 minutes	8	Whey Protein	25 g
9	Blood Flow Restriction Training	15 minutes	10	Neuromuscular Stimulation	20 minutes
11	Drink at Least 8 Glasses of Water a Day		12	Curcumin	500 mg
13	Nerve Stimulation	30 minutes	14	L-Citrulline	3 g
15	Eccentric Exercise		16	Core-Strengthening Exercises	20 minutes
17	Milk		18	Chicken	
19	Probiotics	10 billion	20	Beef	
21	Protein Supplement	20 g	22	Pilates	30 minutes
23	Kinesio Taping		24	Hydroxymethylbutyrate (HMB)	3 g
25	Omega-3 (Fish Oil)	500 mg	26	Flexibility Training	20 minutes
27	Eggs		28	Stability Training	30 minutes
29	Low-Level Laser Therapy (LLLT)	30 seconds	30	Myofascial Release	5 minutes
31	Legumes		32	BCAAs (Branched-Chain Amino Acids)	5 g

33	Climbing	1 hour	34	Iyengar Yoga	1 hour
35	Greek Yogurt		36	Betaine (TMG)	500 mg
37	Spinach		38	Stretching	15 minutes
39	Red Meat		40	Dance	30 minutes
41	Pomegranate Peel and Cocoa Extracts		42	Resveratrol	150 mg
43	Mung Bean	10 g	44	Walking Meditation	30 minutes
45	Ashwagandha Sensoril	125 mg	46	Avoid Exposure to Heavy Metals	
47	Quercetin	200 mg	48	Saffron	20 mg
49	Apple Juice And Cashews		50	Mangosteen Rind and Cinnamomum Tamala	
51	MCT Oil		52	Golf	
53	Hydrogen Water		54	Beetroot	
55	Nicotinamide Mononucleotide (NMN)	250 mg	56	Icelandic Yogurt	
57	Shatavari	1000 mg	58	Collagen Peptides	10 g
59	Krill Oil	1 g	60	Beta-Alanine	2 g
61	Spinal Manipulation		62	Avoid PAHs Exposure	
63	Alternate Nostril Breathing	10 minutes	64	Ashwagandha	120 mg
65	Schisandra	1 g	66	Rhodiola	500 mg
67	Urolithin A	250 mg	68	Grape Juice	
69	Stair Climbing	10 minutes			

Power Training

IMPACT



EVIDENCE



How to implement

TYPICAL STARTING DOSE

1 hour

Description

Power training involves exercises that utilize strength and speed. Optimal power indicates how quickly you can exert force to produce the desired movement. While an obvious form of training for sports activities, it can also apply to simple, daily tasks like how fast you can walk across a street to increasing your reaction times to help prevent a fall if you trip [R].

- Explosive push-ups
- Squat jumps
- Split jumps
- Medicine ball slams
- Reverse lunges
- Lateral jumps

- Increased muscle strength
- Improved bone health
- Reduced risk of injury
- Improved balance and coordination
- Enhanced mood
- Boost metabolism

Due to the potential stress and intensity of power training, consult with your doctor or a fitness professional before including it in your workout routine.

How it helps

Power training builds your muscle mass and increases your overall strength. This can help prevent muscle weakness and improve your ability to perform daily activities.

2



Nordic Walking

IMPACT

5 / 5

EVIDENCE

5 / 5

How to implement

To implement Nordic walking as a lifestyle change, use specially designed walking poles and engage in this activity for at least 30 minutes a day, most days of the week. Ensure proper technique by maintaining an upright posture and alternating the poles with your steps for balance and effectiveness.

TYPICAL STARTING DOSE

30 minutes

Description

Nordic walking is a form of exercise that involves walking with specially designed poles. It provides a full-body workout, helps improve cardiovascular fitness, and can enhance muscular strength and endurance.

How it helps

Nordic walking uses poles and specific techniques to engage muscles throughout the entire body, enhancing strength. Regular practice can help prevent weakness as it keeps your muscles active, promoting resistance and overall physical fitness.

3



Aquatic Exercise

IMPACT

5 / 5

EVIDENCE

5 / 5

How to implement

Participate in aquatic exercise sessions, such as swimming or water aerobics, for 60 minutes, 3 to 5 times per week. Ensure the exercise intensity is moderate, allowing you to talk but not sing during the activity. Consistency over time is key, so aim to incorporate this into your weekly routine for at least 3 to 6 months to observe benefits.

TYPICAL STARTING DOSE

1 hour

Description

Aquatic exercise involves physical activity performed in water, such as swimming, water aerobics, or aquatic therapy. It is gentle on the joints, making it suitable for individuals with mobility issues, and can help improve cardiovascular fitness and muscle strength.

Aquatic exercise is any type of low-impact physical activity performed in a pool. In this type of cardio exercise, water helps the body float, which reduces gravity and makes the practice more comfortable and tolerable [\[R\]](#), [\[R\]](#).

Compared to land-based exercise, aquatic exercise may be better by [\[R\]](#):

- Reducing the stress and impact on joints
- Lowering fracture risk

Hence, it is usually **recommended for the elderly**. Aquatic exercise is also suitable for people who don't know how to swim [\[R\]](#).

How it helps

Aquatic exercise can help improve muscle strength as it offers water resistance, which makes your muscles work harder during exercise. Moreover, the buoyancy of water can lessen the impact on your joints, reducing the risk of injuries that could lower your overall strength.

4

Strength Training

IMPACT5 / 5

EVIDENCE5 / 5

How to implement

Engage in strength training exercises, such as weight lifting or bodyweight exercises, for 60 minutes per session, 2 to 3 times per week. Ensure you work all major muscle groups and rest each muscle group for at least 48 hours before exercising it again.

TYPICAL STARTING DOSE

1 hour

Description

Strength training, also called resistance or *anaerobic* training, contracts the muscles against an external resistance for short periods of time. This helps gain muscle strength, tone, and mass. This can include activities like weight lifting, pushups, and crunches.

Strength training, also known as resistance training, is a type of physical exercise that uses resistance to build strength, anaerobic endurance, and size [R]. Some of the most common strength training methods include [R]:

- Weight lifting
- Bodyweight exercises like push-ups, pull-ups, squats, and lunges.
- Resistance bands
- Plyometrics or explosive force exercises

The benefits of strength training are numerous, and include [R]:

- Increased muscle strength
- Improved bone health
- Reduced risk of injury
- Improved balance and coordination
- Enhanced mood
- Boost metabolism

Consult with a doctor before starting any new exercise program, especially if you have any health conditions.

How it helps

Strength training builds and maintains your muscles, which not only enhances your body's structural strength but also reduces the risk of injury. It boosts your metabolism which helps in better energy utilization, thereby preventing conditions related to low energy and strength.

PERSONALIZED TO YOUR GENES

Strength training may improve muscle strength more in people with your [PPARGC1A](#) gene variant [R].

Strength training may improve muscle strength more in people with your [VEGFA](#) gene variant [R].

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
PPARGC1A	rs8192678	TC	
VEGFA	rs2010963	GG	

5

Maintain Optimal Vitamin D Levels

IMPACT

4 / 5

EVIDENCE

4 / 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

Three meta-analyses (the largest one with 30 trials and 5615 participants) concluded that supplementation with vitamin D (4,000 IU/day to 60,000 IU/week) increases upper, lower limb, and hand grip strength. Supplementation is more effective in people with low baseline levels and in those older than 65 years old [\[R, R, R\]](#).

In athletes, vitamin D supplementation improves lower but not upper limb strength according to a meta-analysis of 8 studies and 284 participants. However, another meta-analysis (5 trials and 163 athletes) found vitamin D ineffective at improving strength [\[R, R\]](#).

A meta-analysis of 13 studies found that supplementation with vitamin D (800-1000 IU/day), improved leg strength in older people. However, 2 meta-analyses (the largest one with 29 studies) found vitamin D supplementation only had non-significant effects on hand grip strength in older people and postmenopausal women [\[R, R, R\]](#).

Vitamin D helps the body absorb calcium, which is essential for bone health. Strong bones can enhance overall physical strength and stability.

6



Creatine

IMPACT

4 / 5

EVIDENCE

4 / 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

2 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

Creatine helps to increase the body's store of phosphocreatine, a compound that helps your muscles produce energy, especially during strenuous exercise. This can increase muscle strength and lean body mass, thus improving overall fitness and performance [\[R, R\]](#).

7



Whole-Body Vibration

IMPACT4 / 5

EVIDENCE4 / 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

Whole-body vibration training may improve strength performance, countermovement jump, jump height, and lower limb strength. Jump height may improve more in non-athletes and when using [R, R, R]:

- Higher frequency (>30 Hz)
- Higher amplitude (>3 mm)
- Longer exposure duration (>10 minutes/session)
- Longer training periods (>12 weeks)

Whole-body vibration training may also improve strength in:

- Older adults [R, R, R, R, R]
- Knee osteoarthritis patients [R, R]
- Multiple sclerosis patients [R]

Whole-body vibration stimulates your muscles to contract and relax, which can enhance muscle strength and balance. It may also increase bone density, helping your overall bodily strength.

8



Whey Protein

IMPACT

4 / 5

EVIDENCE

4 / 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, when consumed, provides essential amino acids which your body uses to build and repair muscle tissues. This supports increasing your body strength by facilitating muscle growth post-workout.

Six meta-analyses (the largest one with 49 studies and 1863 participants) concluded that supplementation with whey protein, especially if used as an add-on to resistance training, **increases muscular strength, strength-one-repetition-maximum (by 2.49 kg), fat-free mass (by 0.3-0.46 kg), fat mass loss (by 0.62-0.96 kg), muscle size-muscle fiber cross-sectional area (by 310 μm2), and mid-femur cross-sectional area (by 7.2 mm2)**. Whey was **more effective in healthy, young, resistance-trained individuals**. In women, it was more effective when combined with calorie restriction [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

A meta-analysis of 14 studies and 626 participants found that whey protein combined with strength training **lowers body weight (by 4.2 kg) and body fat (by 3.74 kg) while increasing lean body weight (by 2.24 kg)** [\[R\]](#).

In overweight and obese participants, whey **reduces body weight, lean mass, and fat mass, as well as improving SBP, DBP, glucose, HDL, and total cholesterol**, according to a meta-analysis of 9 studies [\[R\]](#).

9



Blood Flow Restriction Training

IMPACT4 / 5

EVIDENCE4 / 5

How to implement

Wrap a blood flow restriction (BFR) band or cuff around the upper portion of your limbs (arms or legs) at a pressure that feels tight but not painful, aiming for a perceived tightness of 7 out of 10. Engage in low-intensity resistance training, such as lifting weights that are 20% to 30% of your one-rep max, or perform bodyweight exercises. Do this for 15-30 minutes, 2-3 times a week. Always release the bands after each exercise set to restore normal circulation.

TYPICAL STARTING DOSE

15 minutes

Description

Blood flow restriction (BFR) training is a specialized fitness and rehabilitation technique that involves applying pressure to restrict blood flow to specific muscles during exercise. This is typically achieved using cuffs or wraps placed on the limbs and then inflated to a controlled pressure. By temporarily reducing blood flow while allowing arterial inflow, BFR training creates a unique physiological response. It induces metabolic stress and muscle fatigue, leading to muscle growth and strength gains, even with lighter weights.

BFR is widely used in rehabilitation settings to aid in the recovery of injured individuals, helping them rebuild muscle strength without overloading compromised areas. It also has applications in improving muscular endurance and may have potential cardiovascular benefits, such as lowering blood pressure and enhancing vascular function. However, it should be performed under the guidance of a trained professional, as it's not suitable for everyone and has specific safety considerations.

How it helps

BFR training has shown promise in improving muscle strength, particularly in both proximal and distal limb muscles, as demonstrated by multiple meta-analyses. These analyses indicate that low-load BFR training can be effective, especially when compared to volume-matched exercise without BFR. BFR training also seems to offer valuable alternatives for older individuals who may not engage in high-load exercises, contributing to muscle hypertrophy and strength gains, particularly in the lower limbs. [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#)

However, its effectiveness relative to traditional resistance training may vary across populations and specific conditions, such as ACL injury or knee osteoarthritis, where BFR training can improve strength but might be less effective than heavy-load training. Nevertheless, it remains a promising approach for muscle development and rehabilitation, particularly for those with specific limitations or challenges [\[R\]](#), [\[R\]](#).

10

Neuromuscular Stimulation

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

Incorporate neuromuscular stimulation into your routine by using a neuromuscular electrical stimulation (NMES) device for 20-30 minutes per session. Aim for 2-3 sessions per week, focusing on the muscle groups you wish to target. Ensure each session is spaced out with at least a day of rest in between to allow for muscle recovery.

TYPICAL STARTING DOSE

20 minutes

Description

Neuromuscular stimulation involves the use of electrical impulses to activate muscles, potentially aiding in rehabilitation, muscle strengthening, and physical therapy.

How it helps

Neuromuscular Stimulation, by sending electrical signals to your muscles, can effectively increase muscle strength. This process imitates the action of signals sent to muscles during typical physical activity, leading to strengthening and conditioning.

11



Drink at Least 8 Glasses of Water a Day

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Consume a total of at least 64 ounces (or approximately 1.9 liters) of water over the course of the day. This can be divided into 8 glasses, each containing 8 ounces of water. Aim to drink evenly throughout the day to avoid dehydration.

Description

Water is an essential nutrient for nearly every process in your body, helping to mainting brain and gut function, maintain a health weight, as well as energy and performance levels, among others.

Water is essential for life. It supports nearly every process in your body [R].

Water helps maintain [R]:

- Energy and performance levels
- Brain function
- Gut function
- Healthy weight

Most experts recommend drinking **around 8 glasses (64 oz. or 2 L) of water daily**. You might need more or less than this, depending on how active you are, where you live, or what your overall health is like [R].

How it helps

Staying hydrated maintains your muscle's elasticity and joint lubrication, promoting overall physical strength. Furthermore, adequate water intake prevents muscle fatigue and optimizes body functionality, keeping you strong and active.

12



Curcumin

IMPACT3 / 5

EVIDENCE3 / 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

Curcumin, found in turmeric, has anti-inflammatory properties that can help to maintain healthy muscle and joint function, potentially improving your physical strength. Additionally, it has antioxidant benefits that promote overall health and recovery, necessary for strength building.

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].

13



Nerve Stimulation

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

Nerve stimulation can be implemented by daily sessions of 15-30 minutes using a device specifically designed for this purpose. These devices often use electrical currents to stimulate nerves through the skin, which can be adjusted in intensity according to comfort. It's important to consult a healthcare provider for guidance on the specific type of nerve stimulation that may be most beneficial for your condition.

TYPICAL STARTING DOSE

30 minutes

Description

Nerve stimulation techniques involve the use of electrical impulses, like transcutaneous electrical nerve stimulation (TENS) or other methods to activate nerves, potentially providing relief from chronic pain, improving muscle function, and aiding in physical therapy.

Health professionals can stimulate your nerves using different strategies [\[R\]](#).

Many strategies use magnetic fields or electric currents. Examples include [\[R\]](#), [\[R\]](#), [\[R\]](#):

- [Transcutaneous electrical nerve stimulation](#) (TENS)
- Transcranial direct current stimulation (tDCS)
- Transcranial magnetic stimulation (TMS)
- Transcutaneous auricular vagus nerve stimulation (taVNS)

Nerve stimulation may improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Cognition
- Mood
- Pain
- Seizures
- Tinnitus

How it helps

Stimulation of nerves can help increase muscle strength by sending electrical signals that cause muscles to contract, similar to regular exercise which contracts muscles naturally. Over time, repeated nerve stimulation can help improve muscle strength and fight conditions like muscle atrophy.

14



L-Citrulline

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Take 1.5 to 5 grams of L-citrulline supplements per day, orally, with or without food. This dosage can be taken all at once or divided into two to three smaller doses throughout the day. It's generally recommended to start at the lower end of the dosage range and adjust based on your body's response.

TYPICAL STARTING DOSE

3 g

Description

L-citrulline is an amino acid that may help improve blood flow and reduce muscle soreness, making it a popular supplement for athletes and individuals with certain cardiovascular conditions. Its potential to enhance nitric oxide production supports vascular health and overall circulation.

[Citrulline](#) is an amino acid (protein building block). Citrulline can be found in foods like [R](#), [R](#), [R](#), [R](#), [R](#):

- Watermelon
- Pumpkins
- Cucumber
- Bitter melon

The body uses L-citrulline to produce nitric oxide, a compound that helps widen blood vessels. It is important for heart and sexual health [R](#), [R](#), [R](#).

L-citrulline is commonly used as supplement to support [R](#):

- Blood vessel health
- Muscle health
- Metabolic health
- Sexual health

How it helps

L-Citrulline aids strength by being converted in the body into another amino acid called L-Arginine, which boosts nitric oxide production. This helps increase blood flow, essential for muscle growth and recovery, which can lead to strength improvements.

15



Eccentric Exercise

IMPACT

3 / 5

EVIDENCE

3 / 5

Description

Eccentric exercise is a type of exercise where the muscle lengthens as it contracts. It has been shown to have a number of health benefits, including increased muscle strength, improved bone density, and reduced risk of injury.

How it helps

A meta-analysis found that high-intensity eccentric exercise yields greater increases in muscle strength and mass compared to concentric training, especially in terms of total and eccentric strength. Strength gains from eccentric training were more specific to velocity and mode of contraction, suggesting a link to the higher loads and specialized neural patterns of eccentric actions. Another meta-analysis (19 trials and 618 participants) also found eccentric exercise more effective than concentric exercise at improving muscle strength. Similarly, eccentric cycling training increases knee extensor strength and vastus lateralis fiber cross-sectional area according to a meta-analysis of 14 studies [\[R, R, R\]](#).

16



Core-Strengthening Exercises

IMPACT

3 / 5

EVIDENCE

2 / 5

How to implement

Incorporate exercises like planks, bridges, abdominal crunches, and leg lifts into your daily routine. Aim to do these exercises for 20-30 minutes, 3 times a week. Each exercise should be performed in sets of 10-15 repetitions.

TYPICAL STARTING DOSE

20 minutes

Description

Core-strengthening exercises target the muscles of the abdomen, lower back, and pelvis, helping improve posture, stability, and reduce the risk of back pain. Regular core workouts support a strong and balanced musculoskeletal system.

The core, or trunk, includes several groups of muscles in your abdomen, back, and pelvis. Keeping these muscles strong helps stabilize your body, twist and bend your back, protect your back from injuries, and enhance your overall fitness [\[R\]](#).

Some exercises that help strengthen the core include [\[R\]](#):

- Crunches
- Planks
- Bridges
- Supine toe taps
- Bird dogs

The core can also be strengthened by practicing Pilates, kettlebell training, and some types of yoga [\[R, R, R\]](#).

How it helps

Various non-placebo-controlled trials showed that core-specific training programs can lead to improved strength in different groups, such as Greco-Roman wrestlers and soccer players. These programs enhanced strength, sprinting abilities, and kicking performance. Additionally, core strengthening exercises showed benefits in improving trunk muscle endurance and strength in untrained individuals [\[R, R, R, R\]](#).

Core-strengthening exercises focus on training the muscles in your stomach, lower back, hips, and pelvis, which all contribute to your overall body strength.

17



Milk

IMPACT

3 / 5

EVIDENCE

2 / 5

How to implement

Incorporate milk into your daily diet by drinking 1-2 glasses (around 8-16 ounces) each day, either as a beverage, mixed with cereal or coffee, or used in cooking and baking recipes. Choose a type of milk that suits your nutritional needs and dietary preferences, such as whole, skim, lactose-free, or plant-based alternatives.

Description

Milk is a nutrient-rich beverage that provides essential calcium, protein, and vitamins like vitamin D. It supports bone health, helps build and repair tissues, and can be a valuable part of a balanced diet.

How it helps

A study demonstrated that consuming fat-free milk after resistance training resulted in greater increases in lean mass and muscle strength compared to other protein sources such as soy. This effect was attributed to the specific protein content of milk, which seems to be more effective for muscle protein synthesis post-exercise [\[R\]](#).

Another study examined the strategic ingestion of high-protein dairy milk combined with resistance training. The results indicated increases in muscle mass, strength, and power among people who consumed milk, highlighting its role in enhancing muscle recovery and growth [\[R\]](#).

18



Chicken

IMPACT

3 / 5

EVIDENCE

2 / 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

A study found that consuming high-protein chicken products, along with resistance training, led to increases in muscle mass and strength. People who consumed chicken protein showed notable improvements in muscle circumference and strength metrics like handgrip strength compared to a control group [\[R\]](#).

Another study evaluated the effects of consuming chicken protein after workouts, comparing it to other protein sources like beef and whey. The results indicated that chicken protein, along with other high-quality protein sources, leads to benefits in body composition, lean body mass, and strength after resistance training [\[R\]](#).

19



Probiotics

IMPACT

3 / 5

EVIDENCE

2 / 5

How to implement

Take a probiotic supplement containing 10 billion or more live cultures once daily, preferably with a meal or as directed by the packaging or a healthcare provider.

TYPICAL STARTING DOSE

10 billion

Description

Probiotics are live beneficial bacteria and yeasts that can support gut health and digestive function when consumed as supplements or found in fermented foods like yogurt and sauerkraut. They may be beneficial to gut health, immune function, blood sugar, and mood.

[Probiotic bacteria](#) are “good” bacteria found mainly in the large intestine. They support your body and mind by [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Maintaining gut health
- Supporting a healthy immune system
- Improving your mood
- Helping to maintain healthy blood sugar

Prebiotics are certain types of fiber and other complex carbs that serve as food for gut bacteria. **They support gut health by helping boost the activity and growth of “good” bacteria** [\[R\]](#), [\[R\]](#).

Prebiotics are also added to foods and supplements. Common prebiotic ingredients are [\[R\]](#), [\[R\]](#):

- Oligo-fructose
- Oligo-galactose
- [Inulin](#)

Mixtures of probiotics and prebiotics are known as **synbiotics** [\[R\]](#).

How it helps

Probiotics aid the body by influencing the balance of gut bacteria, which may increase one's overall strength through enhanced nutrient absorption. They may also contribute to improved immune function and provide a degree of vital energy production.

20



Beef

IMPACT

3 / 5

EVIDENCE

2 / 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

A study found that young adults who were supplemented with beef after resistance training showed decreases in fat mass and increases in fat-free mass, although improvements in muscle strength were not different compared to a control group [\[R\]](#).

Older adults consuming beef as part of the DASH diet showed improvements in body composition and muscle strength, indicating that high-quality protein from beef may be part of a healthy diet to improve muscle health [\[R\]](#).

A comparison of beef, whey, and carbohydrate supplementation in resistance-trained males demonstrated that both beef and whey increased fat-free mass and muscle thickness to similar extents. Beef specifically promoted increases in upper body hypertrophy and strength improvements [\[R\]](#).

Consumption of beef is also associated with maintaining muscle mass in older populations, suggesting its role in healthy aging and the potential prevention of sarcopenia [\[R\]](#).

21



Protein Supplement

IMPACT

2 / 5

EVIDENCE

4 / 5

How to implement

Mix one scoop (approximately 20-25 grams) of protein powder with 8-12 ounces of water, milk, or a beverage of your choice. Consume this mixture 1-2 times daily, preferably after workouts and between meals to aid in muscle repair and growth.

TYPICAL STARTING DOSE
20 g

Description

A protein supplement is a product designed to increase protein intake in the diet, typically in the form of powders or shakes. It can help individuals meet their protein needs, especially for athletes or those with specific dietary requirements.

Proteins, fats, and carbs are macronutrients. You need these nutrients in large (‘macro’) amounts. They provide your body with the energy it needs to function properly [\[R\]](#).

A **protein supplement** can come in numerous forms from tablets, to powders, and shakes, in order to meet needs not achieved through diet. The recommended daily allowances are 56 g/d for men and 46 g/d for women.

You should choose high-quality foods that give you the “best” version of each macronutrient. For example, too much saturated fat and protein from animal sources may increase the risk of heart disease [\[R\]](#), [\[R\]](#).

How it helps

Taking protein supplements can aid in strength building by providing necessary building blocks (amino acids) your body needs to repair and grow muscle tissue, especially after workouts. Essentially, more protein equals more raw material for muscle growth, which leads to increased strength.

22



Pilates

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Engage in Pilates exercises for at least 20-30 minutes, 3 times a week. Focus on core strength, flexibility, and mindful breathing. It is suitable for both beginners and advanced individuals, adjusting the difficulty of exercises as necessary.

TYPICAL STARTING DOSE
30 minutes

Description

Pilates is a form of exercise that focuses on strengthening the core, improving flexibility, and enhancing overall body awareness through controlled movements and breathing techniques. Its health benefits include increased core strength, improved posture, enhanced flexibility, and better balance, making it a popular choice for those seeking a holistic approach to fitness.

Pilates is a type of exercise that emphasizes proper alignment, breathing techniques, and precise movements.

It involves a series of controlled movements performed on a mat or with specialized equipment, such as a reformer or Cadillac. Pilates helps strengthen the core muscles, improve flexibility, and promote mind-body awareness.

How it helps

A meta-analysis of 10 studies concluded that Pilates improves strength in the elderly. Similarly, a meta-analysis of 9 studies found large effects of Pilates on lower-limb muscle strength in older adults [\[R, R\]](#).

In a non-placebo-controlled trial of 30 healthy volunteers, practicing Pilates 2x/week for 12 weeks increased the isokinetic muscular strength of the elbow flexors and extensors. In a non-placebo-controlled trial of 16 sedentary women, practicing Pilates for 8 weeks promoted abdominal wall muscle hypertrophy and increased respiratory muscle strength and performance. In a non-placebo-controlled trial of 43 breast cancer survivors, practicing Pilates (60 min, 3x/week) for 24 weeks improved lower and upper body strength and flexibility [\[R, R, R\]](#).

However, Pilates failed to improve inspiratory muscle strength in a non-placebo-controlled trial of 44 patients with type 2 diabetes [\[R\]](#).

Pilates focuses on core strength, flexibility, and overall body awareness, which can increase your muscle tone and strength.

23



Kinesio Taping

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Apply kinesio tape directly to the skin over the affected muscle or joint area. The tape should be stretched slightly to create tension after being applied over the pre-cleaned skin. Typically, kinesio tape can be worn for 3 to 5 days, including during showering, before it needs to be replaced.

Description

Kinesio taping involves the application of special tape to support injured muscles and joints. It can help reduce pain, improve circulation, and enhance overall mobility when used correctly.

Kinesio Taping is a physical therapy technique that uses special tapes to help support muscles and tendons. People use Kinesio Taping to help with [R](#), [R](#):

- **Musculoskeletal injuries**
- Swelling due to lymph fluid buildup (lymphedema)
- Muscle stiffness

How it helps

Kinesio Taping works by enhancing proprioception (i.e., body's ability to sense its location, movements, and actions), which can improve strength. It also provides support and stability to muscles and joints without restricting the body's range of motion.

24



Hydroxymethylbutyrate (HMB)

IMPACT2 / 5

EVIDENCE3 / 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

Hydroxymethylbutyrate (HMB) helps strength by slowing down muscle protein breakdown and simultaneously stimulating protein synthesis, leading to muscle growth and strength improvement. Thus, it's generally recommended for those seeking to increase their physical strength and perform better in exercises.

Fifteen randomized controlled trials were included, involving 2137 patients. Meta-analysis revealed some evidence to support the effect of HMB alone, or supplements containing HMB, on **increasing skeletal muscle mass** (SMD = 0.25; 95% CI: -0.00, 0.50; z = 1.93; P = 0.05; I2 = 58%) and **strong evidence to support improving muscle strength** (SMD = 0.31; 95% CI: 0.12, 0.50; z = 3.25; P = 0.001; I2 = 0%). Effect sizes were small. No effect on body weight (SMD = 0.16; 95% CI: -0.08, 0.41; z = 1.34; P = 0.18; I2 = 67%) or any other outcome was found [R].

25



Omega-3 (Fish Oil)

IMPACT2 / 5

EVIDENCE3 / 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

500 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

Omega-3 (Fish Oil) can assist with strength by promoting muscle protein synthesis, which aids in muscle growth and repair. Additionally, it has anti-inflammatory properties that can aid with recovery from strength training.

26

Flexibility Training

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Incorporate flexibility training exercises, such as yoga or static stretching, into your routine for at least 20-30 minutes a day, three to five times a week. Focus on stretching all major muscle groups, holding each stretch for 10-30 seconds without bouncing, and breathing deeply to maximize benefits.

TYPICAL STARTING DOSE

20 minutes

Description

Flexibility training, such as yoga and stretching exercises, can improve joint range of motion, reduce the risk of injury, and promote better posture. Incorporating flexibility exercises into a fitness routine supports physical comfort and overall mobility.

How it helps

Non-placebo-controlled trials highlight the effects of flexibility training on strength. In one study with 40 volunteers, an 8-week hamstring flexibility program increased both flexibility and strength in females, while males increased only flexibility. In trained women, flexibility training improved leg press but not bench press strength. Adding flexibility training to resistance training slightly increased strength gains compared to resistance training alone in a 12-week trial with 43 participants. Similarly, combining flexibility training with a multi-component program improved strength, agility, and aerobic fitness in 142 older women [\[R, R, R, R, R\]](#).

However, resistance training was more effective than flexibility training in two trials involving 72 older adults [\[R, R\]](#).

Flexibility training may help by improving the range of motion of muscles and joints, leading to better muscle coordination.

27



Eggs

IMPACT

2 / 5

EVIDENCE

2 / 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

Consuming whole eggs after resistance exercise may result in greater stimulation of post-exercise muscle protein synthesis compared to consuming egg whites alone. This suggests that nutrients present in whole eggs may have additional benefits for muscle repair and growth beyond just their protein content [R].

Another study noted that egg protein supplementation improved muscle strength and dietary protein intake in older adults, especially in the upper body [R].

28

Stability Training

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Integrate stability exercises into your workout routine 2-3 times per week. These exercises include activities such as using a stability ball, performing balance exercises on a balance board, or doing body-weight exercises that focus on balance and core strength, such as planks and single-leg stands. Spend approximately 20-30 minutes per session focusing on these exercises.

TYPICAL STARTING DOSE
30 minutes

Description

Stability training is a form of exercise that focuses on enhancing core strength and balance through targeted movements and exercises, often incorporating equipment like stability balls, balance boards, or resistance bands. It helps improve overall stability and posture while reducing the risk of falls and injury.

How it helps

A meta-analysis of 20 trials concluded that balance training may improve postural sway and functional balance, with greater effects observed in longer programs. Mixed findings existed for jumping, agility, and neuromuscular control. Balance training outperformed plyometric/strength training in some areas but not in strength or sprint performance [\[R\]](#).

Another study found both plyometrics and dynamic stabilization/balance training similarly effective at improving hamstring strength and vertical jump in female athletes [\[R\]](#).

A study of soccer players found that core stability exercises improved lower limb strength balance. The second study on collegiate athletes showed significant improvements in balance and throwing performance after a five-week core stabilization program. In another study, trunk stability training was as effective as leg strength training in enhancing vertical takeoff velocity. Lastly, a study on female handball players found that a sling exercise-based core stability program led to a 4.9% increase in maximal throwing velocity [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

29



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

Low-Level Laser Therapy (LLLT) can stimulate cellular function, promote healing and reduce inflammation which can enhance your overall physical strength. It's also used to treat musculoskeletal injuries, aiding in faster recovery and improved performance.

In a 2015 review of 13 RCTs, phototherapy (LLLT or LEDT) showed significant performance improvements when applied before exercise. Results were strongest with red or infrared wavelengths, power outputs of 50-200 mW, and doses of 5-6 J per point [R].

A 2018 review of 39 trials with 861 participants showed some evidence favoring phototherapy (LLLT or LEDT) within exercise protocols for performance improvement but emphasized the need for more rigorous studies due to methodological issues and variable parameters. Positive effects were seen with wavelengths from 655 to 950 nm, energy doses of 20-60 J for small muscles and 60-300 J for large muscles, and a maximal power output of 200 mW per diode [R].

A 2022 review of 24 studies in athletes found that LLLT before exercise improved lower-limb muscle strength, reduced soreness, and positively affected various biochemical markers. More robust trials are needed before making strong recommendations [R].

30

Myofascial Release

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Incorporate myofascial release into your routine by using tools like foam rollers or massage balls, focusing on tense areas for about 5-20 minutes daily. You can also seek professional myofascial release therapy sessions, which typically last about 30-60 minutes, 1-2 times per week for targeted treatment.

TYPICAL STARTING DOSE

5 minutes

Description

Myofascial release is a type of massage therapy that can help to improve range of motion, reduce pain, and increase circulation. It can also help to improve posture and reduce stress.

How it helps

Myofascial Release helps improve strength by releasing tension in the fascia, the connective tissue surrounding your muscles. This allows better muscle function, movement, and promotes healing, leading to increased strength and mobility.

A meta-analysis of 12 studies found that foam rolling (self-myofascial release) plus stretching can increase range of motion and power and strength performance slightly better than stretching alone. Another meta-analysis (10 trials) found that foam roller self-myofascial release increases jump strength and flexibility [\[R\]](#), [\[R\]](#).

31



Legumes

IMPACT2 / 5

EVIDENCE2 / 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, often considered a good source of slow-release carbohydrates and proteins, may play a role in human nutrition. The processing of legumes improves the bioavailability of nutrients and may be beneficial for maintaining muscle health, especially in older populations [\[R\]](#).

In a study examining the effect of lysine supplementation, derived in part from legumes, on muscle function in children, an increase in forearm muscle strength was observed after a 3-month intervention [\[R\]](#).

32



BCAAs (Branched-Chain Amino Acids)

IMPACT

2 / 5

EVIDENCE

2 / 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

A meta-analysis of 35 studies concluded that supplementation with BCAAs improves muscle strength, muscle mass, physical performance, and handgrip strength in older people [\[R\]](#).

In a placebo-controlled trial of 20 combat sports athletes, supplementation with BCAAs (5 g/day) for 4 weeks improved muscle mass [\[R\]](#).

BCAAs aid in muscle protein synthesis, thereby building and preserving muscle mass during strength training. They also help decrease muscle soreness after workouts.

Please note: *There is not enough safety data for long-term BCAA supplementation at doses above **12 g/day**. Increased BCAA intake may be linked to type 2 diabetes* [\[R\]](#).

33



Climbing

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Engage in climbing activities, such as rock climbing, bouldering, or indoor wall climbing, two to three times per week, each session lasting for about an hour. Begin with easier routes and gradually progress to more challenging ones as your strength and skill improve.

TYPICAL STARTING DOSE

1 hour

Description

Climbing is a great way to get a full-body workout, improve your balance and coordination, and reduce stress. It can also help you build strength, endurance, and confidence.

How it helps

A meta-analysis of 18 trials involving 568 patients across various health conditions found that therapeutic climbing positively impacts physical health significantly. Mental and social health benefits were observed but were not statistically significant due to data heterogeneity [\[R\]](#).

A randomized controlled trial with 19 sedentary adults found that sport rock climbing (60 minutes/day, 3x/week for 8 weeks) led to improvement in body composition, VO2max, muscle strength, and muscle endurance [\[R\]](#).

Another pilot randomized, controlled trial in 35 gynecologic cancer survivors found that supervised wall climbing intervention vs usual care (for 8 weeks, 16 sessions) improved the 6-minute walk, 30-second chair stand, 30-second arm curls, sit and reach, 8-foot up-and-go, grip strength-right, and grip strength-left assessments [\[R\]](#).

In a randomized controlled trial with 15 trained climbers, low-intensity climbing with blood flow restriction (2x10 min/session; 3 times/week) increased grip and elbow flexor endurance, which are crucial performance surrogates in competitive climbing [\[R\]](#).

Climbing engages several muscle groups simultaneously, requiring a harmonious balance between power, flexibility, and coordination. Intense workouts from climbing also improve cardiovascular health, thus elevating your overall strength and endurance.

Please note: Climbing injuries are common and can be challenging to diagnose. Climbers typically get injured on their fingers, and if they have been injured before, they are more likely to get hurt again. Seek medical attention if you experience pain after practicing [\[R\]](#).

34



Iyengar Yoga

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Attend a 90-minute Iyengar yoga class at least once a week. Choose a class led by a certified Iyengar yoga instructor to ensure proper guidance and technique adherence.

TYPICAL STARTING DOSE

1 hour

Description

Iyengar yoga is a style of yoga that emphasizes proper alignment and the use of props to support poses. It can help improve flexibility, balance, and mental well-being through precise and controlled movements.

How it helps

In 2 non-placebo-controlled trials of 86 older participants, practicing Iyengar yoga for 8-16 weeks improved strength, balance active range of motion, physical well-being, and aspects of mental well-being (emotional well-being and self-care). Compared to tai chi, yoga was less effective at improving strength but more at improving balance [R, R].

35



Greek Yogurt

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

Incorporate Greek yogurt into your diet by eating at least one serving (about 6 ounces or 170 grams) daily. You can enjoy it as a breakfast item, a healthy snack, mixed with fruits and nuts, or as a substitute for sour cream in recipes.

Description

Greek yogurt is a protein-rich dairy product that provides essential nutrients like calcium and probiotics for gut health. It's a nutritious addition to the diet that can support digestion and overall nutritional well-being.

How it helps

Consuming Greek yogurt in conjunction with a 12-week exercise training program increased total strength, biceps brachii muscle thickness, and fat-free mass, while also reducing body fat percentage. These improvements were more pronounced compared to a carbohydrate-based control group, suggesting that the protein content of Greek yogurt may play a crucial role in these benefits [R].

36



Betaine (TMG)

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

To take Betaine (TMG) as a supplement, consume 500-2000 mg daily, preferably with a meal to enhance absorption. It is recommended to start at the lower end of the dosage range and adjust based on personal tolerance and effectiveness. This supplement can be taken indefinitely for ongoing support of heart health and liver function.

TYPICAL STARTING DOSE

500 mg

Description

Betaine is a compound found in various foods and used in dietary supplements for its potential to support liver health and contribute to healthy homocysteine levels.

How it helps

Betaine (Trimethylglycine/TMG) aids in muscle strength by enhancing the production of a molecule called creatine, which plays a critical role in energy production and muscle contractions. It also reduces homocysteine, a harmful amino acid linked to heart disease, thus potentially preventing related conditions.

Betaine supplementation has been studied in various exercise contexts with mixed results [\[R, R, R, R, R, R, R\]](#):

Dosage: Betaine supplementation in different studies ranged from 2-2.5 g/day for 2-14 weeks.

Health Effects:

- Some studies suggest betaine supplementation may increase testosterone and the testosterone to cortisol ratio (T/C).
- Betaine supplementation in certain trials improved parameters such as maximal oxygen uptake (VO2max), anaerobic peak power, and muscular strength.
- In some cases, betaine supplementation appeared to reduce perceived exertion and subjective measures of fatigue.
- However, in several studies, betaine supplementation did not lead to significant changes in body composition, muscle mass, strength, or cell hydration.

Overall, the effects of betaine supplementation on exercise performance and body composition seem to vary depending on the study and population, and more research is needed to establish its consistent benefits and optimal dosages for different exercise contexts.

Please note: *Doses above 4 g/day may increase LDL and triglyceride levels. TMG supplementation can cause a person’s urine and sweat to smell fishy* [\[R, R\]](#).

37



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

In a placebo-controlled trial of 45 adults over 50 years old, supplementation with spinach extract (2 g/day) for 12 weeks **increased muscle strength and quality** [\[R\]](#).

Spinach is high in iron and protein, key nutrients to build and repair muscles. It also contains other nutrients that support energy production and bone health.

38



Stretching

IMPACT

1 / 5

EVIDENCE

3 / 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

Chronic muscle stretching exercises may have small positive effects on muscle strength that increase with the number of repetitions. Sedentary people, women, and older people may benefit the most from stretching [\[R\]](#).

However, some studies suggest that stretching (about 4 sets of stretching of approximately 1-minute duration, 3-4 days/week for 4-24 weeks) may have detrimental effects on muscle strength in the short term. Stretching sessions far from strength training sessions may provide a strategy to minimize this risk [\[R\]](#).

39



Red Meat

IMPACT

1 / 5

EVIDENCE

2 / 5

How to implement

Limit your red meat consumption to no more than three portions per week, with each portion being about 3-4 ounces (85-113 grams), roughly the size of a deck of cards. Opt for leaner cuts of meat and consider replacing some red meat meals with poultry, fish, or plant-based protein sources.

Description

Proteins, fats, and carbs are macronutrients. You need these nutrients in large ('macro') amounts. They provide your body with the energy it needs to function properly [R].

You should choose high-quality foods that give you the “best” version of each macronutrient. For example, too much saturated fat and protein from certain animal sources may increase the risk of heart disease and infertility [R, R, R].

Red meat can be part of a balanced diet when consumed in moderation. It is a rich source of essential nutrients, including high-quality protein, which helps build and repair tissues, and important vitamins like B12, crucial for nerve health and red blood cell formation. Red meat also contains iron in its heme form, which is more readily absorbed by the body compared to non-heme iron from plant sources. This can be especially beneficial for individuals with iron deficiencies or higher iron needs.

However, it's important to opt for lean cuts and control portion sizes to reduce the intake of saturated fats. Balance your diet by also incorporating a variety of protein sources such as poultry, fish, and legumes.

How it helps

Red meat is a rich source of high-quality protein, containing all essential amino acids required for muscle growth, tissue repair, and overall body function. Consuming adequate protein is particularly important for maintaining muscle mass, especially as we age [R].

40



Dance

IMPACT

1 / 5

EVIDENCE

2 / 5

How to implement

Engage in dance activities for at least 30 minutes, three times per week. You can choose any form of dance you enjoy, such as ballroom, hip hop, or salsa, and you can dance at home, in a studio, or in a group class setting.

TYPICAL STARTING DOSE

30 minutes

Description

Dancing involves moving your body to music. Many people take dance classes to learn various styles of dance and improve their skills. Examples include:

- Ballet
- Zumba
- Belly dancing
- Hip hop
- Salsa

Dancing is a fun, creative, and relaxing activity. It can also provide a range of health benefits, improving your heart health, brain health, fitness, and more.

How it helps

Dance acts as a full-body workout, allowing for improved strength as it involves using muscles you may not typically use. The repetitive movements involved in dance can increase muscle tone and strength, thus helping with the condition of strength.

A [meta-analysis of 9 studies and 544 participants](#) concluded that ballroom dancing **improves strength, agility, mobility, and balance in older people** [\[R\]](#).

Another meta-analysis (18 studies) concluded that dance **improves muscular strength, muscular and cardiovascular endurance, balance, flexibility, and cognitive ability in older people** [\[R\]](#).

41



Pomegranate Peel and Cocoa Extracts

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a supplement containing pomegranate peel and cocoa extracts once daily, ideally with a meal to enhance absorption. The specific dosage may vary based on the product, so follow the manufacturer's instructions on the label. Generally, it is recommended to continue daily supplementation for at least 8 to 12 weeks to evaluate its effects.

Description

Pomegranate peel extract comes from the pomegranate fruit. Cocoa extractis derived from the cacao bean. Both pomegranate and cacao have long histories of use in traditional medicines of their native lands. Pomegranate peel extract is rich in polyphenolic compounds like ellagic acid and may have anti-inflammatory and anticancer properties. Cocoa extract contains various bioactive compounds, including theobromine and flavanols, which are known for their antioxidant effects and potential cardiovascular benefits.

[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 [\[R\]](#), [\[R\]](#).

[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 cocoa and cocoa seeds 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

How it helps

Pomegranate peel and cocoa extracts are rich in antioxidants that support muscle health and recovery, potentially boosting your strength. Additionally, these supplements may assist in improving blood flow, enhancing nutrient and oxygen delivery to your muscles.

A study on a combination of Punica granatum and Theobroma cocoa extracts (LN18178 or Tesnor®) found that both doses significantly reduced AMS scores, improved well-being, and increased testosterone levels in participants after 56 days. Hand-grip strength improved, and stress scores decreased [\[R\]](#).

42



Resveratrol

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 150-500 mg of resveratrol as a supplement daily, preferably with meals to enhance absorption. This dosage range is based on studies for various health benefits, and it's advised to not exceed 500 mg per day without medical supervision.

TYPICAL STARTING DOSE

150 mg

Description

Resveratrol is a natural compound found in red grapes, red wine, and some berries. It is known for its potential antioxidant properties and its role in promoting heart health.

[Resveratrol](#) is an antioxidant found mainly in [\[R\]](#):

- Berries
- Red grapes
- Red wine
- Peanuts

It’s purported to have anti-inflammatory and antioxidant effects [\[R, R, R\]](#).

How it helps

In a placebo-controlled trial of 30 older subjects, supplementation with resveratrol (500 mg/day) for 12 weeks as an add-on to exercise improved knee extensor muscle peak torque (by 8%), average peak torque (by 14%), power (by 14%), mean fiber area (by 45.3%) and total myonuclei of the vastus lateralis (by 20%) [\[R\]](#).

Resveratrol may help by reducing oxidative stress that can lead to muscle fatigue. Additionally, it can help improve mitochondrial function, which is crucial for muscle health and strength.

43



Mung Bean

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Consume 10 to 15 grams of mung bean powder daily, mixed into water, smoothies, or soups. Continue this supplementation for at least 2 to 3 weeks to potentially see benefits.

TYPICAL STARTING DOSE

10 g

Description

Mung bean is an Indian legume commonly used in cooking. They are a source of plant-based protein and fiber and can be part of a nutritious diet.

How it helps

In a non-placebo-controlled trial of 25 underactive vegetarians, supplementation with mung bean protein (18 g/day) for 8 weeks increased grip, flexor, and extensor strength [R].

Mung beans are rich in protein and fiber, which aid in muscle growth and recovery. They also contain vital nutrients like magnesium and potassium, necessary for muscle function and energy production.

44



Walking Meditation

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Dedicate 10-20 minutes daily to practice walking meditation, ideally in a quiet space where you can walk back and forth. Focus on the sensation of each step, maintaining a slow pace that allows you to be fully aware of the movement and feeling in your feet and body. It can be done indoors or outdoors.

TYPICAL STARTING DOSE

30 minutes

Description

Walking meditation is a mindfulness practice that combines the physical activity of walking with focused awareness and deep breathing. It is used to reduce stress, enhance mental clarity, and cultivate mindfulness.

How it helps

In a non-placebo-controlled trial of 45 elderly participants with mild-to-moderate depressive symptoms, practicing walking meditation 3x/week for 12 weeks improved muscle strength [R].

Walking meditation may help by promoting muscle use and improving endurance. The mindful aspects may also allow for better focus on the body's performance, potentially leading to optimal use of strength.

45



Ashwagandha Sensoril

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 125 to 250 mg of ashwagandha Sensoril, in capsule form, once or twice daily. It is best taken with meals or a glass of water to improve absorption. Continue for at least one month to observe effects on stress and anxiety reduction.

TYPICAL STARTING DOSE

125 mg

Description

Sensoril is a specific standardized extract of the herb ashwagandha. It is used as a dietary supplement and is associated with potential benefits for stress reduction, mood improvement, and overall vitality.

How it helps

In a placebo-controlled trial of 38 recreationally active men, supplementation with ashwagandha Sensoril (500 mg/day) for 12 weeks increased performance at squat (by 9.1 kg) and bench press (by 4.8 kg) [\[R\]](#).

Ashwagandha Sensoril can aid in strength enhancement by boosting energy levels and promoting muscle growth.

46



Avoid Exposure to Heavy Metals

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

To avoid exposure to heavy metals, ensure you're not using cosmetic products with heavy metals, opt for organic foods to minimize pesticide exposure, and use filters for drinking water to remove possible contaminants. Check for lead-based paints in older homes and avoid cooking or storing food in uncoated metal containers. When possible, choose glass or BPA-free plastics instead.

Description

Heavy metals are elements naturally found in the environment. They are also used for agricultural, industrial, and medicinal purposes. Some can even be found in small amounts in your body [\[R\]](#), [\[R\]](#).

Long-term exposure to high amounts of heavy metals can be harmful to your health [\[R\]](#), [\[R\]](#).

Heavy metals that are most often linked to health problems include [\[R\]](#), [\[R\]](#):

- Lead
- Cadmium
- Arsenic
- Chromium
- Mercury

How it helps

A study of 1,357 boys aged 8-17 associated exposure to a mixture of heavy metals with decreased muscle strength [\[R\]](#).

Heavy metals like lead, mercury, and cadmium can harm the muscles and bones. Over time, this can weaken the body.

47



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

200 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

12 young men ingested quercetin (1 g/day) or placebo for 14 days and then underwent an eccentric-induced muscle damaging protocol. After quercetin supplementation, there was a more marked increase in IGF-I levels. Quercetin significantly reduced plasma markers of cell damage (CK, LDH, and Mb) and IL6 levels during the recovery period [\[R\]](#).

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

Ten young men took either 1 g of quercetin or placebo 3 hours before resistance training in a study. Quercetin improved knee extensor torque velocity, reduced MVIC loss, increased torque development, and neuromuscular efficiency [\[R\]](#).

Quercetin may enhance muscular strength due to its anti-inflammatory and antioxidant properties.

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 [\[R\]](#).*

48



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

Saffron contains antioxidants and anti-inflammatory elements which may increase muscle strength by reducing inflammation and oxidative stress during workouts. However, more research is needed to confirm this benefit.

A study examined the impact of saffron supplementation on athletic performance in 28 male university students. Saffron increased isometric and isotonic muscle forces by 10.1% and 6.1%, respectively, while also improving visual and auditory reaction times, suggesting potential ergogenic effects [\[R\]](#).

49



Apple Juice And Cashews

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate a glass of apple juice (approximately 8 ounces) and a handful of cashews (about 1 ounce or 28 grams) into your daily diet. This combination can be consumed either as a part of your breakfast, as a mid-morning snack, or during the afternoon to leverage potential health benefits.

Description

Apple juice is a good source of vitamin C and contains essential antioxidants, which can support immune health and provide a boost of hydration. Cashews are an excellent source of healthy fats, protein, vitamins, and minerals, supporting heart health, and promoting bone strength.

How it helps

Apple juice, high in antioxidants and vitamin C, helps in muscle repair, growth and recovery, crucial for strength. Cashews are a good source of protein and healthy fats, key to building and maintaining muscle mass.

A 12-week study with 45 middle-aged and elderly participants found that daily consumption of cashew apple juice (120 and 240 mg/day) improved lower extremity muscle strength and cardiopulmonary endurance compared to a placebo [\[R\]](#).

50



Mangosteen Rind and Cinnamomum Tamala

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a supplement that combines mangosteen rind and Cinnamomum tamala in capsule or powder form. Follow the manufacturer's instructions for dosage, typically once or twice a day with meals. Continue this regimen for at least 8 to 12 weeks to observe potential benefits.

Description

The combination of mangosteen rind and cinnamomoum tamala is sometimes used in traditional medicine for its potential to support digestive health and reduce inflammation. These natural remedies may offer relief from digestive discomfort and promote overall gastrointestinal well-being.

How it helps

A study demonstrated that the combination of mangosteen rind and cinnamomum tamala leaf (800 mg/day for 42 days) improves muscle strength, endurance, and overall physical performance in young adults. People showed notable improvements in benchmark strength exercises such as the bench press and leg press after a period of supplementation, indicating a potent ergogenic effect that may be beneficial for athletes or people engaging in resistance training [\[R\]](#).

51



MCT Oil

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate 1 to 2 tablespoons of MCT oil into your daily diet by adding it to coffee, smoothies, or salad dressings. Start with a lower dose to assess tolerance before gradually increasing to the full dosage. Use daily for ongoing benefits.

Description

MCT oil is a type of dietary fat known for its rapid absorption and potential to provide quick energy. It is often used in ketogenic diets and may support weight management and cognitive function.

How it helps

MCT Oil helps in building strength by providing immediate fuel to your muscles during intense workouts, thus decreasing muscle breakdown and promoting growth. It also aids in weight management which indirectly contributes to enhanced strength and endurance.

Healthy, sedentary, middle-aged and older adults: After 12 weeks, knee extension strength increased in all groups, with the increases in all MCT intake groups being significantly higher than those in the control group. Grip strength significantly increased from baseline in the MCT 6 g/day intake group [\[R\]](#).

A 3-month study with elderly nursing home residents compared the effects of different supplements. The MCT group, receiving 6g/d of MCTs, showed a 48.1% increase in leg strength, 27.8% improvement in swallowing, and a 7.5% increase in activities of daily living (ADL) compared to the control group. This suggests that MCTs can enhance muscle strength, function, and ADL in frail elderly individuals [\[R\]](#).

52



Golf

IMPACT

1 / 5

EVIDENCE

1 / 5

Description

Golf is a low-impact sport that is easy on your joints. It can help improve your balance, coordination, and mental focus.

How it helps

In a non-placebo-controlled trial of 45 female golfers, both traditional and golf-specific resistance training were equally effective at improving strength, golf performance, and body composition (fat mass and visceral fat) [\[R\]](#).

53



Hydrogen Water

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Drink 1.5 to 2 liters of hydrogen-rich water daily, spread out over the course of the day. It is best to start with a lower volume and gradually increase it to allow your body to adjust. This practice should be continued daily as a part of your lifestyle to maintain its potential benefits.

Description

Drinking hydrogen-rich water is believed to have antioxidant properties and may help combat oxidative stress in the body. Some studies suggest it could potentially support overall health and well-being.

How it helps

Drinking hydrogen-rich water can help improve body strength by protecting muscles from oxidative stress and inflammation, supporting faster recovery from fatigue and injury. However, more scientific research is needed to confirm these benefits.

In a placebo-controlled trial of 12 healthy men, drinking hydrogen-rich water (1260 mL) before resistance training and lunges improved muscle function, reduced the lactate response, and alleviated delayed-onset muscle soreness [\[R\]](#).

54



Beetroot

IMPACT1 / 5

EVIDENCE1 / 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

In a meta-analysis of 34 studies, dietary nitrate intake showed a small but significant impact on muscular strength and a slightly larger effect on muscular endurance [\[R\]](#).

However, a systematic review and meta-analysis of 5 studies with 60 participants found that dietary nitrate (NO3-) supplementation had no significant effect on isokinetic peak torque across different velocities [\[R\]](#).

Beetroot contains nitrates that are converted into nitric oxide in your body, which increases blood flow and oxygen to your muscles. Plus, it's also rich in essential nutrients like iron, magnesium, and proteins that further support muscle health and strength.

55



Nicotinamide Mononucleotide (NMN)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 250-500 mg of nicotinamide mononucleotide (NMN) orally once daily in the morning. It can be taken with or without food. Continue this regimen as part of your daily supplement routine to support cellular health and energy levels.

TYPICAL STARTING DOSE

250 mg

Description

Nicotinamide mononucleotide is a compound that is believed to support cellular energy production and may have potential benefits for aging-related processes.

How it helps

In a placebo-controlled trial of 108 older adults, supplementation with NMN (250 mg/day) for 12 weeks improved performance at a 5-times sit-to-stand test [\[R\]](#).

NMN is a molecule that your body transforms into NAD⁺, a substance vital for energy production and repairing damaged DNA. Supplementing with it may enhance physical performance and slow aging-related muscle decline, thereby potentially improving strength.

56



Icelandic Yogurt

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate Icelandic yogurt, also known as skyr, into your diet by consuming about 1-2 cups daily. You can have it for breakfast, as a snack, or use it as a base in smoothies or as a substitute for sour cream in recipes.

Description

Icelandic yogurt, also known as Skyr, is a dairy product packed with protein and probiotics. Consuming Icelandic yogurt can support gut health, aid in digestion, and provide a source of essential nutrients.

How it helps

Icelandic Yogurt is full of proteins that can help you rebuild your muscles and thus increase your strength. It also contains probiotics which can improve digestive health which is essential to overall wellness and body strength.

Thirty healthy untrained older males (age = 68 ± 4 years) were randomly assigned to Icelandic yogurt (IR; n 15, 18 g of protein) or an iso-energetic placebo (PR; n 15, 0 g protein) immediately following resistance training (3×/week) for 8 weeks. The addition of Icelandic yogurt consumption to a resistance training programme improved lean mass, strength and altered skeletal muscle regulatory factors in healthy untrained older males compared with placebo [\[R\]](#).

57



Shatavari

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take a shatavari supplement of 500 mg twice daily with meals. Continue this regimen for at least 3 to 6 months to observe benefits. Always follow the dosage instructions on the product's label or consult a healthcare provider for personalized advice.

TYPICAL STARTING DOSE
1000 mg

Description

Shatavari is a plant, often used in traditional Indian medicine, Ayurveda. It's popularly known for its benefits in restoring balance and promoting reproductive health, especially in women. Shatavari has anti-inflammatory properties and can also aid digestion, thereby contributing to overall health.

How it helps

In a [placebo-controlled trial of 20 postmenopausal women](#), supplementation with shatavari (1000 mg/day) for 6 weeks improved **muscle function and contractility** [\[R\]](#).

58



Collagen Peptides

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 10-20 grams of collagen peptides daily, mixing the powder into a glass of water, juice, or a smoothie. It is recommended to consume this supplement on an empty stomach to improve absorption, ideally first thing in the morning or right before bedtime for a period of at least 8-12 weeks to observe beneficial effects.

TYPICAL STARTING DOSE

10 g

Description

Collagen peptides are a form of collagen that is broken down into smaller, more easily absorbed molecules. They are commonly used in supplements and skincare products for their potential to promote skin elasticity, hair strength, and nail health.

[Collagen](#) is a protein that helps build skin, bones, and joints [\[R\]](#), [\[R\]](#).

People use collagen supplements for [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Joint pain
- Skin health
- Hair growth

How it helps

Collagen peptides may aid in increasing muscle mass and strength, as they possess the amino acids needed for muscle protein synthesis. When combined with resistance training, they could potentially enhance muscle growth and strength.

In a study involving 53 male subjects with sarcopenia, a 12-week resistance training program was conducted. Participants were given either collagen peptides (15 g/day) or silica as a placebo. Both groups showed improvements in fat-free mass, bone mass, muscle strength, and sensory-motor control, but the collagen peptide group exhibited significantly greater gains in these parameters [\[R\]](#).

In a study involving 77 premenopausal women who underwent 12 weeks of resistance training, those who consumed 15 g of collagen peptides daily alongside training showed a significant increase in hand-grip strength compared to those who only did resistance training. Both groups also experienced a significant gain in leg strength [\[R\]](#).

In a study with 57 young men, collagen peptides (COL) supplementation (15 g/day) combined with resistance training led to increased fat-free mass (FFM) compared to a placebo (PLA) group. Both groups improved strength, but COL showed better body composition results, possibly due to enhanced connective tissue adaptations [\[R\]](#).

59



Krill Oil

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 1 to 3 grams of krill oil daily as a dietary supplement, preferably with a meal to enhance absorption. It's often available in soft gel form, making it easy to swallow. Continue this regimen consistently for best results, typically reviewing its effectiveness and any need for adjustments with a healthcare provider after a few months.

TYPICAL STARTING DOSE

1 g

Description

Krill oil is a source of omega-3 fatty acids, primarily in the form of phospholipids. It can promote cardiovascular health, joint comfort, and may have anti-inflammatory properties.

How it helps

In a placebo-controlled trial of 94 older participants, supplementation with krill oil (4 g/day) for 6 months increased knee extensor maximal torque (by 9.3%), grip strength (by 10.9%), and vastus lateralis muscle thickness (by 3.5%) [R].

Krill oil is rich in omega-3 fatty acids, which may improve strength by promoting muscle growth and reducing muscle damage and inflammation.

60



Beta-Alanine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 2-3 grams of beta-alanine supplement daily, ideally in divided doses throughout the day to minimize potential skin tingling sensations. This supplementation can be continued for at least 4 weeks to observe benefits in exercise performance and muscle endurance.

TYPICAL STARTING DOSE

2 g

Description

Beta-alanine is an amino acid that can enhance muscle endurance by increasing the body's buffering capacity against lactic acid accumulation during intense exercise. Supplementing with beta-alanine may help improve athletic performance and delay muscle fatigue.

How it helps

Beta-Alanine, when consumed, increases carnosine concentration in muscles. This helps delay muscle fatigue during high-intensity exercise, thus enhancing strength and performance.

In a study of 30 strength-trained individuals, β -alanine supplementation (6.4g/day for 5 weeks) improved power output during lifting, particularly at maximal strength loads and maximum power output. The increase in 1RM was due to greater strength gains [R].

61



Spinal Manipulation

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Schedule regular appointments with a licensed chiropractor or physical therapist trained in spinal manipulation. These sessions should occur 1-2 times per week for 4-6 weeks to assess effectiveness for your condition.

Description

Spinal manipulation is a therapeutic technique performed by chiropractors or physical therapists to address musculoskeletal issues, improve spinal alignment, and alleviate back pain and discomfort.

How it helps

Spinal manipulation can help improve the condition of strength by realigning the backbone and enhancing nerve functionality, which may improve muscle power and coordination. It should be done under the guidance of a certified therapist to avoid injuries.

62



Avoid PAHs Exposure

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Minimize your exposure to Polycyclic Aromatic Hydrocarbons (PAHs) by avoiding or reducing consumption of charred, grilled, or smoked foods, not smoking or avoiding secondhand smoke, and limiting time spent in areas with heavy traffic or industrial fumes. Use exhaust fans in kitchens and ensure proper ventilation when cooking at high temperatures to reduce indoor levels of PAHs.

Description

PAHs or Polycyclic Aromatic Hydrocarbons are harmful substances found in smoke and grilled foods. Try to limit exposure to them for better health. For example, avoid inhaling smoke from cigarettes or barbeques and choose alternative cooking techniques over grilling. Minimizing PAHs can reduce the risk of several health issues, particularly lung and skin diseases.

How it helps

A study of 473 elderly adults associated exposure to PAHs, especially 3-fluorene and 2-fluorene, with decreased quadriceps strength [\[R\]](#).

63



Alternate Nostril Breathing

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Sit comfortably with your back straight. Close your right nostril with your right thumb and inhale slowly through the left nostril. Close the left nostril with your fingers, then exhale slowly through the right nostril. Keeping the left nostril closed, inhale through the right nostril. Then, close the right nostril and exhale through the left. This completes one cycle. Repeat the cycle for 5 to 10 minutes, once or twice daily.

TYPICAL STARTING DOSE
10 minutes

Description

Alternate nostril breathing is a yoga breathing technique that involves inhaling and exhaling through one nostril at a time while blocking the other. It is believed to promote relaxation, balance energy, and improve focus and mental clarity.

How it helps

In a non-placebo-controlled trial of 130 schoolchildren, practicing alternate nostril breathing for 10 days increased hand grip strength [\[R\]](#).⁴

Alternate nostril breathing can improve lung function and respiratory endurance, enhancing your overall strength by increasing your body's oxygen utilization. The technique can also promote calmness and relaxation, which are beneficial for muscle recovery and growth.

64



Ashwagandha

IMPACT

1 / 5

EVIDENCE

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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%) [\[R\]](#).

In a placebo-controlled trial of 38 recreationally active men, supplementation with ashwagandha (500 mg/day) for 12 weeks improved muscle strength on squat (by 9.1 kg) and bench press (by 4.8 kg), average squat power, peak bench press power, 7.5 km time trial performance, and perceived recovery scores [\[R\]](#).

Ashwagandha may help through its adaptogenic properties. Its consumption can enhance muscle mass and reduce body fat, thus helping boost physical strength.

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Schisandra

IMPACT

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EVIDENCE

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How to implement

Take schisandra supplements in the form of capsules or powder. For general well-being, consume 1 to 3 grams of the powder daily, or as per the capsule product's instructions, typically ranging from 250mg to 500mg taken twice daily. It's recommended to follow this regimen for several months to observe benefits, always under the guidance of a healthcare professional.

TYPICAL STARTING DOSE

1 g

Description

Schisandra is a plant native to East Asia and is traditionally used in herbal medicine. Schisandra berries contain a variety of compounds, including lignans and antioxidants. These berries have been used for centuries in traditional Chinese medicine to promote overall health, boost energy, and support liver function.

How it helps

In a placebo-controlled trial of 54 older adults, supplementation with schisandra extract (1 g/day) for 12 weeks increased knee extensor strength by 10.2 Nm and left knee extensor strength by 6.7 Nm. The same treatment increased quadriceps muscle strength in a placebo-controlled trial of 45 postmenopausal women [\[R\]](#), [\[R\]](#).

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Rhodiola

IMPACT

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EVIDENCE

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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 10 resistance-trained men, supplementation with rhodiola extract (1500 mg/day) for the 3 days before a repeated bench press exercise and 500 additional mg 30 min before the test enhanced explosive resistance training performance (mean bench press velocity) but impaired upper body strength-endurance (number of repetitions) [\[R\]](#).

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Urolithin A

IMPACT

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EVIDENCE

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How to implement

Take Urolithin A as a dietary supplement in the form of a capsule or powder. The typical dosage ranges between 250 mg to 1,000 mg daily. It should be consumed with or after a meal to enhance absorption, and consistent daily usage over an extended period of months is recommended for best results.

TYPICAL STARTING DOSE
250 mg

Description

Urolithin A is a compound produced by the gut microbiota when digesting ellagic acid, a polyphenol found in certain fruits and nuts. It is studied for its potential to promote muscle health, improve mitochondrial function, and support cellular longevity.

How it helps

In a study of 88 older adults, urolithin A supplementation (at 500 mg or 1000 mg doses for 4 months) resulted in a significant 12% increase in muscle strength. It also showed meaningful improvements in aerobic endurance and physical performance, while reducing inflammation and enhancing mitochondrial efficiency. However, it did not significantly affect peak power output [\[R\]](#).

In another study of 66 older participants, 1000 mg of urolithin A supplementation for 4 months significantly increased muscle endurance compared to the placebo. It also lowered plasma levels of acylcarnitines, ceramides, and C-reactive protein. However, improvements in the 6-minute walk distance and maximal ATP production in the hand muscle were not significant [\[R\]](#).

Urolithin A assists in the removal of damaged mitochondria, a process known as mitophagy. Enhanced mitophagy can mean better energy production, leading to overall boosted physical performance.

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Grape Juice

IMPACT

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EVIDENCE

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How to implement

Consume 8-12 ounces of pure grape juice, preferably made from Concord grapes, daily. This can be done in one sitting or divided into smaller servings throughout the day. Continue this practice daily as part of your regular diet.

Description

Grape juice is made from the whole grape and is typically purple or white depending on the variety of grape used. Grape juice contains flavonoids and polyphenols that provide several health benefits [\[R\]](#)..

Fruit juices are naturally high in sugars, lack the fiber of whole fruit, and often contain added sugars. Care should be taken if sugar consumption is a concern.

How it helps

Grape juice is rich in antioxidants, such as resveratrol and flavonoids, which may support muscle recovery and strength by reducing inflammation and oxidative stress. Consequently, drinking it might aid in maintaining muscle strength, particularly after strenuous exercise.

A study with 20 judo athletes used grape juice and a placebo in a crossover design for 14 days. Upper limb strength was significantly higher in the grape juice group (p=0.003) [\[R\]](#).

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Stair Climbing

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How to implement

Incorporate stair climbing into your daily routine by choosing stairs over elevators or escalators whenever possible. Aim for at least 10 minutes of continuous stair climbing or multiple shorter sessions that add up to 10 minutes per day. This practice can be continued indefinitely to maintain or improve cardiovascular health and lower body strength.

TYPICAL STARTING DOSE

10 minutes

Description

Stair climbing is a great way to get a full-body workout, improve your cardiovascular health, and burn calories. It can also help to improve your balance and coordination.

How it helps

A 12-week weighted stair climbing exercise (SCE) program, compared to standard walking, improved double leg press peak power by 17% and stair climbing power by 12% in older adults with mobility limitations. Submaximal aerobic performance improved equally. SCE may enhance knee extension power and strength, but larger studies and comparisons with other resistance training are needed for confirmation [\[R\]](#).

However, in a randomized controlled trial with 15 elderly subjects, a 17-week progressive walking program increased thigh muscle size and strength for older adults. However, an added stair-climbing exercise may not provide additional training effects [\[R\]](#).

Stair climbing is a form of aerobic exercise that builds muscle strength in your legs, improves cardiovascular health, and enhances overall stamina.

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.

	Zinc	17.12 umol/L		9 Nov 2025
	Vitamin B12	687 pg/mL		9 Nov 2025
	Vitamin D, 25-Hydroxy, Total	58.59 ng/mL		9 Nov 2025
	Creatine Kinase	173 IU/L		9 Nov 2025
	Testosterone, Total	1500 ng/dL		9 Nov 2025