

Endurance

DNA Health Report

REPORT CATEGORY —



Sample Client

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DISCLAIMER

This report does not diagnose this or any other health conditions. Please talk to a healthcare professional if this condition runs in your family, you think you might have this condition, or you have any concerns about your results.

Personal information

NAME

Sample Client

SEX AT BIRTH

Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg



How this works

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



Similarly, our Trait Reports look at how your DNA influences your traits.



Your DNA is like an instruction manual — it contains a lot of information.
You can think of it as a blueprint for your body.

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



We use artificial intelligence and machine learning to analyze all this information.
We then summarize your results as a risk score or display it on a gauge.

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

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



Genotype color info:

AA

You don't have any risk alleles

AA

You have 1 risk allele

AA

You have 2 risk alleles

Your risk is also displayed as a percentile. This will tell you how your risks compare to our sample population. The lower your percentile number, the lower your risk. The "50th percentile" would be an average risk.

Similarly, the gauge tells you your relative risk score compared to our sample population, or it indicates a specific trait or haplotype you are more likely to have based on your genetic variants.

When applicable, we also list top evidence-based recommendations that may help lower your risk. The focus is on recommendations that may be of benefit to you, based on your genetics.

Our recommendations come in four categories: lifestyle, diet, supplements and drugs.
The following icons tell you which category a recommendation falls into:



Our team of scientists also ranks each recommendation.
We rank based on impact and the strength of evidence in the medical literature.

Impact shows how strongly a recommendation will affect your health in a certain area.
Evidence is how much scientific support there is for the recommendation. Rankings are from 1 to 5 (low to high):



Impact

Impact scores range from 1-5. These scores reflect how much of an effect each recommendation can have. An impact score of 5 predicts the biggest effect.

When a recommendation affects something we can measure, we use those measurements to assign the impact score. For example, a recommendation that decreases cholesterol by 20% will have a higher impact score than one that decreases it by 5%.

Some recommendations affect things that we cannot directly measure, like stress or mood. For these, the impact score is based on how well they work relative to other recommendations and standard treatments. The best ones get the highest scores.

If there is a lot of research that shows a recommendation works especially well for your genotype, the impact score gets increased.

Recommendation Evidence

5 / 5

Recommendations that are considered effective and generally recommended by experts and medical bodies.

4 / 5

Recommendations that are considered likely effective and that have multiple independent meta-analyses and a great many studies supporting them.

3 / 5

Recommendations that are considered possibly effective and have many studies supporting them

2 / 5

Recommendations that have insufficient evidence, with two or several clinical trials supporting them, or many studies but with ambiguous results.

1 / 5

Recommendations that have insufficient evidence, with a single clinical trial, or with many studies most of which didn't find support for the recommendation.

0 / 5

No evidence in humans.

Genotype-specific Evidence

High-quality

Direct evidence that a recommendation helps more in people with your gene variant (many clinical trials, a few large clinical trials, or a meta-analysis).

Medium-quality

Direct evidence that a recommendation helps more in people with your gene variant (a few clinical trials or one large clinical trial).

Low-quality

Direct evidence that a recommendation helps more in people with your gene variant (a single clinical trial or more trials with inconsistent results).

Indirect

A recommendation may help more in people with your gene variant because it targets a specific gene or protein affected by your variant (e.g., MTHFR, dopamine).

In theory

A recommendation may help more in people with your gene variant because it targets a specific mechanism affected by your variant (e.g., inflammation, oxidative stress).

Some things to keep in mind:

- Genetics doesn’t play a considerable role in a condition or a trait.
- There is not enough research available to estimate a genetic predisposition.
- There are technical limitations to estimating or presenting a genetic predisposition.
- The topic is sensitive, and a genetic predisposition should only be estimated and presented by a healthcare professional.

Introduction

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

- **Endurance: the ability to produce less intense movements for a longer period of time (e.g., cycling, running, swimming)**
- 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 is made up of two elements [\[R\]](#), [\[R\]](#), [\[R\]](#):

- **Cardiorespiratory endurance:** the ability of the heart and lungs to deliver oxygen to muscles during prolonged activity
- **Muscular endurance:** the ability of muscles to contract over extended periods of time without fatigue

Our muscles are made up of fibers. The type of fibers determines what a muscle is good at. Fast-twitch fibers support rapid movements, but they fatigue quickly. These fibers are more common in power athletes. **Slow-twitch fibers support milder long-term movements, and are more resistant to fatigue. They are more common in endurance athletes** [\[R\]](#), [\[R\]](#).

The type of fibers in your muscles mostly depends on your genetics and exercise habits [\[R\]](#).

Genetics of Endurance

PERSONALIZED TO GENES

Based on the genetic variants we looked at, you likely have increased endurance.

Take advantage of your genes, and consider focusing on endurance training! Alternatively, you may want to focus on improving other types of performance you aren't as strong in.

Endurance is the ability to produce low-intensity movements for a long period of time (e.g., cycling, running, swimming). It is made up of **cardiorespiratory endurance** (the ability of the heart and lungs to deliver enough oxygen to muscles during prolonged activity) and **muscular endurance** (the ability of muscles to contract over an extended period of time without fatigue) [R, R, R].

Some people have greater endurance than others. **Up to 70% of people's differences in endurance may be due to genetics.** Genes associated with endurance affect [R, R, R, R, R, R, R, R]:

- Muscle composition and efficiency (slow-twitch vs. fast-twitch muscle fibers)
- The body's ability to use oxygen
- Heart function

Some tips that may help you build endurance include:

- Getting at least 150 min of cardio per week
- Doing the same exercise regularly and letting your body adapt to it over time
- Slowly increasing the amount and intensity of your workouts over time
- Switching between periods of high-intensity training and resting. This is called high-intensity interval training (HIIT).

Great news is that **endurance can actually improve as we age!** For example, peak endurance age for ultra-marathoners often occurs in the late 30s and 40s, potentially even the 50s [R, R, R, R].



HIGHER

Predisposed to higher endurance based on 36 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
HFE	rs1799945	CC
GABPB1	rs7181866	AA
GABPB1	rs8031031	CC
ACTN3	rs1815739	TC
SLC16A1	rs1049434	TT
TTN	rs10497520	CC
KDR	rs1870377	TT
PRDM1	rs10499043	CC
ADRB3	rs4994	AA
CHRNA3	rs4950	AA
GSTP1	rs1695	AA
HIF1A	rs11549465	CC
TSHR	rs7144481	TT
NFE2L2	rs35652124	TT
DES	rs7564856	GA
SATB1	rs4973706	CT
PPARGC1A	rs8192678	TC
GALNTL6	rs558129	GA
ADRB2	rs1042713	GA
ADRB2	rs1042714	GC
COL5A1	rs12722	TC
GNB3	rs5443	CT
BDKRB2	rs1799722	CT
RBFOX1	rs7191721	GA
CNDP2	rs6566810	AT
PKDREJ	rs4253778	GC
AGTR2	rs11091046	C
CKM	rs8111989	CT
DEF6	rs2016520	CT
PPARGC1A	rs7665116	TC
PPARGC1A	rs2970869	TC
NR1H3	rs7120118	TT

GENE	SNP	GENOTYPE
ACE	rs4343	AA
GABPB1	rs12594956	AA
MYBPC3	rs1052373	CC
CYFIP1	rs8029108	AA
NFIA	rs1572312	GG
TTC23	rs1464430	AA
KCNA4	rs1323860	GG
PPARA	rs1800206	CC
PPARGC1A	rs3774923	CC
HIF1A	rs2301113	AA

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

Your Recommendations

Your recommendations are prioritized according to the likelihood of it having an impact for you based on your genetics, along with the amount of scientific evidence supporting the recommendation.

You’ll likely find common healthy recommendations at the top of the list because they are often the most impactful and most researched.

DOSAGE		DOSAGE			
1	Power Training	1 hour	2	Aerobic Exercise (Cardio)	1 hour
3	Strength Training	1 hour	4	Drink at Least 8 Glasses of Water a Day	
5	Airway Muscle Training	30 minutes	6	Carbohydrates	
7	Tennis		8	Sleep for 7+ Hours	
9	Beta-Alanine	2 g	10	Transcranial Direct Current Stimulation (tDCS)	30 minutes
11	Tai Chi	1 hour	12	Sprint Interval Training (SIT)	1 hour
13	Taurine	500 mg	14	Dietary Nitrates	
15	Tart Cherries		16	Yoga	30 minutes
17	Dietary Protein		18	Capsaicin	
19	Intermittent Fasting		20	Pilates	30 minutes
21	Dance	30 minutes	22	Rhodiola	500 mg
23	Core-Strengthening Exercises	20 minutes	24	Blackcurrant Supplement	
25	Low-Level Laser Therapy (LLLT)	30 seconds	26	Blackcurrants	
27	Walking	30 minutes	28	Breathing Techniques	10 minutes
29	Beetroot Juice		30	Zumba	1 hour

31	Spinach		32	Betaine (TMG)	500 mg
33	Beetroot		34	Quercetin	200 mg
35	Ecklonia Cava	100 mg	36	Nicotinamide Mononucleotide (NMN)	250 mg
37	Yerba Mate	1 g	38	Urolithin A	250 mg
39	Cold Exposure	1 minutesute	40	Olive Polyphenols	250 mg
41	Watermelon		42	Almonds	
43	Stability Training	30 minutes	44	Concord Grape Juice	
45	Spirulina	500 mg	46	Lactobacillus Plantarum	10 billion CFU
47	Resistant Starch	40 g Hi-Maize	48	Acetyl-L-Carnitine	500 mg
49	Amaranth		50	Alanylglutamine	1 g
51	Walking Meditation	30 minutes	52	Tryptophan	500 mg
53	Cashew Apple		54	Rhodiola and Ginkgo	200 mg
55	Chlorella	3 g	56	Cordyceps	500 mg
57	Astaxanthin	12 mg	58	Stair Climbing	10 minutes
59	Theacrine And Caffeine		60	Alpha-GPC Choline	300 mg
61	Chair Yoga	30 minutes	62	Exercise At Least One Hour a Day	1 hour
63	Aquatic Exercise	1 hour	64	Dietary Iron	
65	Phosphatidylserine	300 mg	66	Apple Juice And Cashews	
67	Berries		68	Red Light Therapy	20 minutes
69	Pycnogenol	100 mg	70	Collagen Peptides	10 g

71	N-acetylcysteine (NAC)	1200 mg	72	Pomegranate Extract	250 mg
73	Silk Amino Acid Hydrolysate		74	Bananas	
75	Carob	5 g	76	L-Carnitine	500 mg
77	Ginkgo	120 mg	78	Theacrine	
79	Hydroxytyrosol	5 mg			

Power Training

IMPACT

5 / 5

EVIDENCE

5 / 5

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

- Weightlifting [[R](#), [R](#), [R](#)]
- Plyometric exercises [[R](#), [R](#), [R](#)]
- Repeated sprint training [[R](#)]
- Jumping training [[R](#), [R](#), [R](#)]
- Eccentric cycling [[R](#)]

The power improvement from different exercises may also depend on the load's weight, as follows [R, R]:

- Moderate loads for squat and bench press
- Light loads for jump squat
- Heavy loads for power clean and hang power clean

Both machine exercises and free weights may offer similar benefits in power improvement [R].

2

Aerobic Exercise (Cardio)

IMPACT

4 / 5

EVIDENCE

5 / 5

How to implement

Engage in at least 150 minutes of moderate-intensity aerobic exercise or 75 minutes of vigorous-intensity activity each week. Distribute this time over at least 3 days per week, avoiding consecutive days of vigorous exercise to allow for recovery.

TYPICAL STARTING DOSE

1 hour

Description

Engaging in regular aerobic exercise, such as running, swimming, or cycling, offers numerous health benefits, including improved cardiovascular fitness, weight management, and mood enhancement. It supports overall physical and mental well-being while reducing the risk of chronic diseases.

Cardio, short for cardiovascular exercise, is any type of physical activity that temporarily increases your heart rate. Examples include **running, cycling, swimming, and brisk walking**.

Regular cardio exercise has many benefits for your overall health. It can help lower your risk of heart disease and diabetes, support weight loss, and improve your mood and energy levels. To get the most out of cardio, try to do it for at **least 30 minutes, 3-5 times a week**.

Interval training is a type of cardio that combines periods of high-intensity training with brief rest periods.

How it helps

Physical exercise improves endurance and other components of exercise performance. For instance, workplace and school-based exercise interventions may improve muscle and cardiorespiratory endurance in adults and children [\[R, R, R, R, R\]](#).

Aerobic exercise may be most effective at improving endurance, especially when practiced at high intensity and separately from strength training [\[R, R, R\]](#).

The combination of aerobic and strength training may also improve cardiorespiratory endurance, especially when practiced in sessions of 60-90 minutes [\[R\]](#).

Aerobic exercise may help by strengthening your heart and lungs. This increases oxygen delivery to the muscles during prolonged physical activity.

3

Strength Training

IMPACT

4 / 5

EVIDENCE

5 / 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 may improve local muscular endurance, walking endurance, middle- and long-distance performance, running economy, time-trial performance, and time to exhaustion in older and middle-aged participants and endurance athletes. However, high-repetition strength training may not improve endurance in competitive athletes [R, R, R, R, R, R].

Power (explosive) and strength (heavy-weight) training (for at least 4 weeks) may offer similar benefits [R].

In people with spinal cord injury, strength training improves local muscular endurance and other fitness components [R].

The combination of cardio and strength training (60-90 min) may improve cardiorespiratory endurance [R].

4



Drink at Least 8 Glasses of Water a Day

IMPACT

4 / 5

EVIDENCE

4 / 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

Hypohydration may reduce muscle endurance by about 8% [\[R\]](#).

Similarly, exercise-induced dehydration of at least 2% of body weight may also impair endurance [\[R\]](#).

In line with this, drinking water (at a rate of 0.15-0.2 mL/kg) may improve endurance performance at moderate-intensity, 1- to 2-hour cycling by at least 2%. Drinking water faster (at a rate of 0.14-0.27 mL/kg or as desired) may improve the performance of longer (over 2 hours) exercise by at least 3% [\[R\]](#), [\[R\]](#).

5



Airway Muscle Training

IMPACT

4 / 5

EVIDENCE

4 / 5

How to implement

Perform airway muscle training exercises daily for at least 30 minutes. This can involve using specific devices designed to resist airflow in and out, thereby strengthening the respiratory muscles, or practicing breathing exercises that focus on inhaling and exhaling against resistance. Consistency is key, so aim to integrate this practice into your daily routine for ongoing respiratory health.

TYPICAL STARTING DOSE

30 minutes

Description

Airway muscle training is exercise that builds strength in the throat and tongue muscles. This can involve anything from controlled breathing to singing long notes. People use airway muscle training to improve sleep apnea, respiratory conditions, and exercise performance.

Airway muscle training is exercise that builds strength in the throat and tongue muscles. This can involve anything from controlled breathing to singing long notes. People use airway muscle training to improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Sleep apnea
- Respiratory conditions like COPD
- Exercise performance

How it helps

Two meta-analyses found that respiratory muscle training enhances endurance exercise performance, particularly in less fit individuals and during longer sports activities. The training is equally effective for both athletes and non-athletes and combining inspiratory muscle strength and respiratory muscle endurance training can amplify the benefits [\[R\]](#), [\[R\]](#).

Respiratory muscle training benefits athletes, improving performance in time trials, exercise endurance, and Yo-Yo tests (21 studies). Inspiratory muscle training, especially with acute and chronic combined treatment, enhances the metaboreflex, reduces fatigue sensation, and alleviates dyspnea in intermittent sports (10 studies). Additionally, linear workload device-based inspiratory muscle training boosts maximal inspiratory pressure by 29.42 cmH2O and sports performance in 207 athletes (25 studies) [\[R\]](#), [\[R\]](#), [\[R\]](#).

Inspiratory muscle training using the PowerBreath improves sports performance and respiratory function according to a meta-analysis of 6 studies [\[R\]](#).

Airway muscle training strengthens the muscles used for respiration, enabling you to breathe more efficiently during strenuous activities.

6



Carbohydrates

IMPACT

3 / 5

EVIDENCE

4 / 5

How to implement

Incorporate a variety of carbohydrates into your daily meals, aiming for at least 130 grams per day, which is the recommended daily amount for the average adult. Focus on whole grains, fruits, vegetables, and legumes, spreading intake evenly throughout the day to maintain energy levels and support bodily functions.

Description

Carbohydrates are a primary source of energy in the diet and are essential for brain function and physical activity. Choosing complex carbohydrates like whole grains and vegetables can provide sustained energy and support overall nutritional well-being.

How it helps

Acute carbohydrate ingestion (3-10%, 30-80 g/h) during exercise may increase endurance performance [\[R, R\]](#).

Similarly, the long-term ingestion of carbohydrate solutions may increase muscle endurance. These solutions may help the most in people with high cardiorespiratory fitness and when consumed during the sports event [\[R\]](#).

Combining carbohydrate ingestion with caffeine or proteins may increase endurance performance slightly better than carbohydrates alone [\[R, R, R\]](#).

7



Tennis

IMPACT

3 / 5

EVIDENCE

3 / 5

Description

Tennis is a great way to get exercise, improve your cardiovascular health, and burn calories. It can also help you build strength, improve your coordination, and relieve stress.

How it helps

A meta-analysis of 16 studies found moderate beneficial effects of elite tennis playing on lower extremity muscle power, agility, and endurance, and small beneficial effects on speed compared to non-elite playing [\[R\]](#).

8



Sleep for 7+ Hours

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

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

Description

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

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

- Support brain health [\[R\]](#) [\[R\]](#)
- Maintain a healthy weight and appetite [\[R\]](#) [\[R\]](#) [\[R\]](#)
- Regulate blood pressure [\[R\]](#) [\[R\]](#)
- Balance blood sugar [\[R\]](#) [\[R\]](#)

Ways to sleep better include [\[R\]](#):

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

How it helps

Sleep loss may reduce endurance and other fitness aspects. Performance may keep decreasing for every hour awake before engaging in physical activity [\[R\]](#).

A study examined the cumulative influence of sleep time on endurance performance, specifically looking at the effects of sleep extension and restriction on endurance cycling performance. It found that three consecutive nights of sleep extension (more than 8 hours) led to better maintenance of endurance performance compared to normal or restricted sleep [\[R\]](#).

9



Beta-Alanine

IMPACT

3 / 5

EVIDENCE

3 / 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

Supplementation with beta-alanine (100-245 mg/day for 7-49 days) may improve exercise performance, including muscular and isometric endurance. Older people may also benefit [\[R\]](#), [\[R\]](#).

10



Transcranial Direct Current Stimulation (tDCS)

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Use a tDCS device for 20 to 30 minutes per session, targeting specific brain areas depending on the desired outcome. Sessions can be daily or a few times a week, under the guidance of a medical professional or trained specialist to ensure safety and effectiveness.

TYPICAL STARTING DOSE

30 minutes

Description

Transcranial Direct Current Stimulation (tDCS) is a non-invasive brain stimulation technique that uses a low electrical current to modulate neural activity. It has been investigated for its potential in cognitive enhancement, mood regulation, and pain management.

How it helps

A single dose of tDCS may acutely improve muscle endurance and enhance running and cycling time-to-exhaustion performance during time-to-exhaustion but not during endurance-time trials [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

11



Tai Chi

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Practice Tai Chi for 30 to 60 minutes at least twice a week. Choose a quiet, spacious area and follow along with a qualified instructor, either in person at a class or through an online video tutorial, to ensure proper technique and maximum benefit.

TYPICAL STARTING DOSE

1 hour

Description

Tai Chi is a traditional Chinese mind-body practice involving slow, flowing movements and deep breathing. It is known for its potential to reduce stress, improve balance, and enhance overall physical and mental well-being.

Tai chi involves gentle movements and breathing to strengthen and relax the mind and body. Practicing tai chi may help [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Manage pain
- Improve fitness
- Increase well-being
- Improve sleep and mood

How it helps

Tai chi may improve cardiorespiratory endurance in healthy adults [\[R\]](#).

12



Sprint Interval Training (SIT)

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

TYPICAL STARTING DOSE

1 hour

Description

Sprint Interval Training (SIT) is a highly effective form of exercise that involves short bursts of intense activity followed by periods of rest or low-intensity exercise.

Unlike High-Intensity Interval Training (HIIT), which includes varied periods of moderate to high-intensity effort, SIT focuses specifically on short, sharp bursts of maximal effort, typically lasting from 10 to 30 seconds [\[R\]](#).

SIT may improves cardiovascular health, increases metabolic rate, and enhances insulin sensitivity. Additionally, SIT has been shown to boost fat loss and increase muscle strength in a shorter duration compared to traditional workouts [\[R\]](#), [\[R\]](#).

How it helps

Sprint interval training may improve aerobic capacity and endurance performance as much as aerobic exercise [\[R\]](#), [\[R\]](#).

13



Taurine

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

Take 1-4 g of taurine supplement daily, divided into two or three doses with meals for optimal absorption. It can be taken continuously, with periodic evaluations of its effects and benefits.

TYPICAL STARTING DOSE

500 mg

Description

Taurine is an amino acid found in various foods and often used in energy drinks and supplements. It plays a role in neurological and cardiovascular health and can help support energy metabolism.

[Taurine](#) is the most abundant free amino acid in humans. It's not essential, which means we can produce it. We can also get it from protein-rich foods, such as [\[R\]](#):

- Seafood
- Meat
- Dairy

Taurine is a popular additive in energy drinks and can also be taken as a supplement [\[R\]](#).

Taurine plays an important role in [\[R\]](#), [\[R\]](#):

- Bile production
- Calcium metabolism

It is also well-known for its antioxidant and anti-inflammatory properties [\[R\]](#).

How it helps

A single dose of taurine (1-6 g) may improve overall endurance performance [\[R\]](#).

Energy drinks improve muscle endurance and performance at endurance tests. The improvement may be associated with the taurine dosage [\[R\]](#).

14



Dietary Nitrates

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Incorporate foods high in dietary nitrates, such as beets, spinach, arugula, and celery, into your daily meals. Aim for about 300-400 mg of dietary nitrates daily, which equates to roughly 2 cups of nitrate-rich vegetables.

Description

Nitrates found in foods like leafy greens and beets can convert into nitric oxide in the body, which may help dilate blood vessels, lower blood pressure, and enhance exercise performance.

How it helps

Dietary nitrates (300-600 mg/day for up to 15 days) have small but significant benefits on muscular endurance performance, time to exhaustion, and distance traveled. The effects seem to be independent of training level, muscle group, or type of contraction. Nitrates may offer greater benefits in male non-athletes [\[R, R, R, R, R, R, R\]](#).

15



Tart Cherries

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Consume about 200 grams (7 ounces) of tart cherries or drink 240 ml (8 ounces) of tart cherry juice daily. This can be done at any time of the day but consuming it in the evening might improve sleep quality. It is recommended to continue daily consumption for at least 4 weeks to observe benefits such as reduced muscle pain, improved sleep, and potential reduction in inflammation.

Description

Tart cherries, often available in the form of juice or supplements, has vitamin C, as well as anthocyanins and melatonin, known for their potential to reduce inflammation and improve sleep quality. They are rich in antioxidants and may aid in recovery from exercise-induced muscle soreness.

Cherries are stone fruits with numerous species. Tart or “sour” cherries (*Prunus cerasus*) are native to parts of Europe and Asia [\[R\]](#), [\[R\]](#).

They are close to regular, sweet cherries (*Prunus avium*) but more acidic. Hence, people do not eat them fresh but dried or in syrups, salads, pies, or liqueurs.

People consume tart cherries to help with [\[R\]](#):

- Gout
- Exercise recovery
- Blood sugar control
- Blood pressure

How it helps

A meta-analysis of 10 studies and 147 participants concluded that consuming tart cherry juice or concentrate for 7 days to 1.5 hours before exercise improves endurance performance [\[R\]](#).

16



Yoga

IMPACT

3 / 5

EVIDENCE

2 / 5

How to implement

Practice yoga for at least 20 to 30 minutes a day, most days of the week. Choose a style that matches your fitness level and goals, and consider attending a class or using online resources to guide your practice.

TYPICAL STARTING DOSE

30 minutes

Description

Yoga is a mind-body practice that combines physical postures, breathing exercises, and meditation. It enhances flexibility, strength, and mental well-being and is used for stress reduction, relaxation, and overall health improvement.

[Yoga](#) combines breathing, stretching, and relaxation techniques. Practicing yoga may help [\[R, R, R\]](#):

- Reduce [stress](#)
- Improve fitness
- Lower blood pressure and heart rate
- Manage pain

How it helps

Yoga may improve endurance performance by enhancing respiratory regulation and reducing the ventilatory response to exercise. A study showed that yoga practitioners had increased endurance capacity compared to non-yogic individuals. Additionally, a pilot study confirmed that yoga significantly boosts cardiorespiratory efficiency [\[R, R\]](#).

17



Dietary Protein

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

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

Description

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

Foods that are high in protein include:

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

How it helps

Protein supplementation may improve aerobic capacity and time trial performance during chronic endurance training in healthy and clinical populations [\[R\]](#).

Ingesting carbohydrates and proteins may improve endurance performance better than carbohydrates alone [\[R\]](#), [\[R\]](#).

18



Capsaicin

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Apply a capsaicin cream or gel to the affected area up to 4 times daily. Make sure the skin is intact and not broken. Start with a lower concentration (0.025%) and gradually increase to 0.075% if needed for pain relief. Use continuously for at least 4 weeks to evaluate its effectiveness.

Description

Capsaicin, found in chili peppers, is known for its potential to boost metabolism and promote weight loss. It can also provide pain relief when used topically in certain creams and ointments.

How it helps

Supplementation with capsaicin or capsiate (12 mg, 45 min before exercise) may acutely enhance muscle endurance [\[R\]](#).

19



Intermittent Fasting

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

Limit your daily eating to a specific window of time, typically within an 8-hour period such as from 12 pm to 8 pm, and fast for the remaining 16 hours of the day. Repeat this daily or for at least 3-4 days per week.

Description

Intermittent fasting is an eating pattern that involves cycling between periods of fasting and eating. It may help with weight management, improve metabolic health, and offer potential benefits for certain health conditions when done under proper guidance.

[Intermittent fasting](#) (IF) is a pattern of eating that alternates between periods of eating and fasting. The most popular IF method is called the 16/8 method, where you fast for 16 hours and eat during an 8-hour window.

People mainly practice IF to lose weight. Besides benefits related to weight reduction, IF may help lower the risk of [\[R\]](#):

- Alzheimer's disease
- Joint pain
- Asthma
- Multiple sclerosis
- Stroke

Some types of intermittent fasting, such as Ramadan fasting, are also practiced for religious reasons.

How it helps

A systematic review of 28 studies found that time-restricted feeding improved maximum oxygen uptake but Ramadan intermittent fasting reduced it. Intermittent fasting had mixed effects on body composition, muscle strength, and anaerobic capacity [\[R\]](#).

Intermittent fasting may help by training your body to efficiently use its energy sources, especially stored fat.

20



Pilates

IMPACT

2 / 5

EVIDENCE

3 / 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 9 trials concluded that Pilates performed on the mat or apparatus 2x-3x/week for 5-12 weeks improves abdominal muscle endurance in healthy individuals. Another meta-analysis (12 trials and 569 participants) found low-quality evidence that Pilates improves cardiorespiratory fitness when practiced for at least 1440 min (equivalent to 2x/week for 3 months or 3x/week for 2 months). Similarly, a meta-analysis of 9 studies found large effects of Pilates on cardiorespiratory endurance in older adults [\[R, R, R\]](#).

In a non-placebo-controlled trial of 33 healthy volunteers, a 6-week online mat Pilates program improved core muscle endurance. In a non-placebo-controlled trial of 32 trained runners, practicing Pilates for 12 weeks improved performance in a 5-km run. In a non-placebo-controlled trial of 35 sedentary women with dyslipidemia, practicing Pilates for 10 weeks improved cardiorespiratory fitness [\[R, R, R\]](#).

Pilates may help by strengthening your core muscles and improving your cardiovascular fitness through whole-body exercises.

21



Dance

IMPACT

2 / 5

EVIDENCE

3 / 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 interventions may improve endurance performance and mobility in older adults [\[R, R\]](#).

22



Rhodiola

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

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

TYPICAL STARTING DOSE

500 mg

Description

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

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

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

- Fatigue
- Burnout
- Low mood

How it helps

An acute dose of rhodiola (3 mg/kg) taken 1 hour before exercise improved endurance performance and reduced heart rate responses in 2 placebo-controlled trials of 30 participants [\[R\]](#), [\[R\]](#).

The combination of rhodiola (1400 mg/day) and cordyceps (600 mg/day) taken for 2 weeks improved aerobic performance in a placebo-controlled trial of 18 participants. However, the same combination taken for 25 days failed to improve endurance in a placebo-controlled trial of 17 cyclists [\[R\]](#), [\[R\]](#).

Another supplement with rhodiola and ginkgo (270 mg, 4x/day for 7 weeks) improved endurance performance by increasing oxygen consumption and protecting against fatigue in a placebo-controlled trial of 67 healthy volunteers [\[R\]](#).

In a placebo-controlled trial of 112 healthy volunteers, both ginkgo and rhodiola supplementation improved working memory accuracy. Their combination further improved this cognitive aspect [\[R\]](#).

23



Core-Strengthening Exercises

IMPACT

2 / 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

Non-placebo-controlled trials demonstrated the benefits of core strengthening programs on endurance performance. Cross-country runners who engaged in a 6-week pelvic and core strengthening program experienced reduced race times. Untrained students benefited from 6 weeks of core strengthening exercises in terms of improved trunk endurance. A 12-week core stabilization exercise program reduced total trunk endurance time in healthy volunteers. Cricket players also saw improvements in core endurance after 6 weeks of core strengthening exercises. Additionally, both core strengthening and endurance training had similar effects on trunk flexor and extensor endurance in untrained students [\[R, R, R, R, R\]](#).

Core-strengthening exercises may help by enhancing your body's ability to sustain lengthy physical efforts.

24



Blackcurrant Supplement

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take a blackcurrant supplement containing 300mg of blackcurrant extract daily, preferably with a meal to enhance absorption. Continue this regimen for at least 8 weeks to observe potential benefits.

Description

Blackcurrant supplements are often used to harness the health benefits of blackcurrants in a convenient form. They can provide a concentrated source of antioxidants and nutrients that support various aspects of well-being.

Black currant oil contains between 150-200mg of GLA per gram.

How it helps

Blackcurrant supplements can enhance endurance by improving blood flow and reducing muscle fatigue. They can also aid recovery by reducing muscle soreness and stress caused by physical exertion.

A total of 16 separate studies met the criteria for inclusion in the systematic review, with 9 studies contributing to this sport performance meta-analysis. There was an improvement in sport performance when supplementing with blackcurrant. The effective dose appears to be between 105 and 210 mg of total blackcurrant anthocyanins, prior to exercise [\[R\]](#).

25



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) is beneficial to endurance as it aids in repairing tissues and reducing inflammation, hence enhancing muscle performance and recovery. Therefore, it can potentially increase one's endurance capacity for physical activities.

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].

26



Blackcurrants

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Incorporate about 1/2 cup of fresh or frozen blackcurrants into your daily diet. You can add them to your morning yogurt, oatmeal, or smoothies. For those who prefer, blackcurrant juice or preserves can also be consumed, but be mindful of added sugars in processed forms.

Description

Blackcurrants are small, nutrient-dense berries packed with vitamins, minerals, and antioxidants. They are known for their potential to promote heart health, improve cognitive function, and provide essential nutrients for overall vitality.

How it helps

New Zealand blackcurrant extract has been shown to improve performance in high-intensity intermittent running by increasing total running distance and affecting post-exercise lactate dynamics, suggesting benefits for sports involving high-intensity efforts [\[R\]](#).

There is evidence that blackcurrant extract may improve cycling time-trial performance and facilitate a higher tolerance for lactate during intensive exercise, suggesting a potential for enhancing endurance in cycling and similar sports [\[R\]](#).

27



Walking

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Incorporate at least 30 minutes of brisk walking into your daily routine, aiming for a minimum of five days a week. This can be done in one continuous session or broken into shorter periods, such as three 10-minute walks throughout the day.

TYPICAL STARTING DOSE

30 minutes

Description

Walking is a low-impact form of exercise that can contribute to cardiovascular fitness, weight management, and improved overall health. It is used to support physical activity goals, enhance mood, and promote better cardiovascular health.

How it helps

Walking improves endurance by gradually increasing your body's ability to sustain long periods of physical activity. Regular walks boost your cardiovascular health, strengthen your muscles, and enhance lung function, which collectively contributes to improved endurance.

A meta-analysis of 16 studies on walking interventions for elderly individuals found positive effects on the chair stand test (CST), 6-minute walking (6MW), and standing/sitting reach test (SRT), with weighted effect sizes of 1.06, 0.41, and 0.29, respectively. The study also noted varying impacts based on chronic disease status, intervention methods, and type of residence. Overall, walking significantly improves physical function in older adults, offering a convenient and effective exercise option [\[R\]](#).

28

Breathing Techniques

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Practice deep breathing exercises for 10 minutes daily, preferably in a quiet space where you won't be disturbed. Sit or lie down in a comfortable position, slowly inhale through your nose, allowing your chest and lower belly to rise, hold the breath for a moment, and then exhale slowly through your mouth or nose. This can be done at any time of day to reduce stress and improve focus.

TYPICAL STARTING DOSE

10 minutes

Description

Breath awareness and specific breathing techniques, such as deep breathing or mindfulness-based practices, can help reduce stress, improve focus, and enhance overall mental well-being. These techniques are valuable tools for managing anxiety and promoting relaxation.

Most breathing techniques involve taking slow and even breaths. Their main goal is to prevent rapid breathing (**hyperventilation**) [\[R\]](#).

Breathing techniques tend to help with [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Stress
- Anxiety
- Sleep problems
- Asthma

One example is the **Buteyko breathing technique**. It's often used by people with asthma or other conditions that affect the lungs [\[R\]](#).

Another example is **yogic breathing**. [Yoga](#) is a practice that combines breathing techniques with exercise and meditation [\[R\]](#), [\[R\]](#).

How it helps

Breathing exercises that enhance the endurance of inspiratory muscles may potentially increase the time limit for maintaining a target inspiratory muscle workload, thus impacting overall endurance performance. This effect is evident in both sedentary people and athletes [\[R\]](#).

Respiratory training has been demonstrated to increase breathing endurance even in endurance-trained subjects. After respiratory training, subjects showed a reduction in minute ventilation for a given exercise intensity, which prolonged performance at their anaerobic threshold [\[R\]](#).

29



Beetroot Juice

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Consume 200-250ml of beetroot juice daily, at least 1-2 hours before engaging in physical activity or as part of your breakfast routine. This regimen should be maintained consistently for at least 2 weeks to start noticing benefits in terms of increased stamina and blood pressure regulation.

Description

Beetroot juice is a concentrated source of dietary nitrates, known for their potential to enhance athletic performance and improve blood pressure regulation. It is often consumed by athletes to enhance stamina and aid in recovery.

Beetroot (*Beta vulgaris*) contains iron, nitrates, sodium, potassium, and betalaine [R].

Beets are an inexpensive and mineral-rich vegetable that are widely used in Western cooking. Compared to other vegetables with high iron content, beets have a low price and are easy to store [R].

How it helps

In trained athletes, high doses of nitrate from beetroot juice consumed two hours before exercise improved 2000-m rowing performance. This suggests a potential benefit for endurance sports that require both strength and stamina [R].

Acute supplementation of beetroot juice improved muscular endurance during resistance training exercises, such as back squats, demonstrating its potential benefit beyond traditional endurance activities [R].

While some studies indicate improved performance in high-intensity intermittent exercise with beetroot juice supplementation, the benefits vary across sports and individual responses. For example, improvements were seen in high-intensity cycling sprints, but not necessarily in team sports or activities that require repeated sprints [R].

In certain sports, like tennis, beetroot juice did not enhance physical performance, suggesting that the effectiveness may be highly specific to the type of exercise and the athlete's condition [R].

30



Zumba

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Participate in a Zumba class at least 3 times per week for a duration of one hour each session. Choose a class appropriate for your fitness level to ensure safety and effectiveness.

TYPICAL STARTING DOSE

1 hour

Description

Zumba is a fitness program that combines dance and aerobic movements set to energetic music. It's popular for its potential to improve cardiovascular fitness, coordination, and overall physical health through a fun and engaging workout.

How it helps

A study investigated the effects of Zumba training on endurance, trunk strength, balance, flexibility, jumping performance, and quality of life in women. It found that Zumba training improved endurance and enhanced trunk strength endurance [R].

Another study assessed the effectiveness of Zumba exercises on the physical outputs sought by the physical and health education course offered at the university level. The results showed that Zumba exercises improved factors of speed, muscle strength, agility, and periodic respiratory endurance [R].

31



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 9 healthy volunteers, supplementation with sodium nitrate (0.1 mmol/kg/day, equivalent to 100-300 g spinach) **reduced VO2max but increased time to exhaustion during endurance training** [R].

Spinach is high in dietary nitrates that convert into nitric oxide. This molecule aids in boosting endurance by enhancing muscle oxygenation during exercise.

32



Betaine (TMG)

IMPACT2 / 5

EVIDENCE1 / 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, also known as Trimethylglycine (TMG), can improve physical endurance by reducing fatigue, making your muscles last longer during strenuous activities. It also supports cardiovascular health by reducing harmful homocysteine levels which, in high amounts, can lead to heart diseases.

In a double-blind RCT with 13 non-professional resistance trained men, betaine supplementation (2.5 g of betaine mixed in 500 mL of Gatorade for 14 days) **improved upper-body muscular endurance** (10 sets of bench press exercise to failure), measured as total repetitions and total volume load, **by 6.5%** from pre-intervention to post-intervention [\[R\]](#).

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

33



Beetroot

IMPACT

1 / 5

EVIDENCE

3 / 5

How to implement

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

Description

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

How it helps

A meta-analysis of 118 studies found that nitrate and polyphenol-rich foods had small but significant benefits on exercise performance in well-trained males, not females. Beetroot showed beneficial effects among nitrate-rich foods [\[R\]](#).

A pooled analysis found no significant effect of dietary NO3- supplementation overall. However, time-to-exhaustion trials showed a moderate, significant benefit, while graded exercise tests had a small, non-significant effect [\[R\]](#).

Another review analyzed 17 studies on nitrate supplementation's impact on exercise performance. It found a moderate improvement in time-to-exhaustion tests with nitrate supplementation, especially with chronic use. Effects on time trials and graded exercises were smaller and not statistically significant, but still potentially meaningful for elite athletes [\[R\]](#).

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

Beets are high in nitrates, which your body converts into nitric oxide; this expands blood vessels and increases blood flow, thereby enhancing your capacity to exercise longer. Additionally, beets provide a good source of antioxidants, promoting overall health and recovery after workouts.

How to implement

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.

Good sources of quercetin include [R]:

- Apples
- Onions
- Tea

People mainly use quercetin supplements to relieve allergies [R, R, R].

How it helps

A meta-analysis of 11 studies and 254 human subjects found that quercetin supplementation improved VO2max and endurance performance. However, the magnitude of the effect was small (≈2%) [R].

Another meta-analysis of 7 articles and 288 subjects showed that a daily intake of 960 mg of quercetin for up to 50 days improved exercise performance by 0.74%. This effect was **significant in untrained individuals** but not in trained ones, and independent of treatment duration [R].

However, quercetin supplementation (1,000 mg/day for 8.5 days) showed **no significant improvement** in aerobically demanding performance in a double-blind study involving 16 male soldiers [R].

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

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

35



Ecklonia Cava

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take a supplement of Ecklonia Cava extract, typically available in capsule format, with a standard dose ranging between 100-400 mg daily. It can be taken with or without food, but consistency in timing can help maintain stable levels in your body. It's generally recommended to start with the lower end of the dosing spectrum and adjust based on personal tolerance and efficacy. Continue taking daily for at least a few weeks to gauge the full effect.

TYPICAL STARTING DOSE

100 mg

Description

Ecklonia cava is a type of brown seaweed often used in supplements for its potential antioxidant and anti-inflammatory properties, which may support cardiovascular health and overall well-being.

Ecklonia cava, also known as “sea trumpet”, is a brown seaweed that grows along the coasts of Korea and Japan. People use it as a food, fertilizer, and supplement [R, R].

Ecklonia cava is traditionally used to fight [R, R, R]:

- Urinary diseases
- Hemorrhoids
- Constipation

How it helps

Ecklonia Cava, a type of seaweed, contains various antioxidants that may improve physical endurance by reducing fatigue and enhancing energy production at the cellular level. Its anti-inflammatory qualities also support muscle recovery after exercise, potentially enhancing overall exercise endurance.

In a placebo-controlled trial of 20 men, supplementation with Ecklonia cava 30 minutes before an endurance exercise trial **increased time to exhaustion (by 2.39 min)** [R].

36



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 involving middle-aged healthy adults, NMN supplementation for 60 days improved walking distance during a 6-minute walking test. However, NMN supplementation for 24 weeks did not improve walking speed or grip strength in a separate trial with older patients with type 2 diabetes. Another trial with recreationally trained runners showed that NMN supplementation enhanced aerobic capacity during exercise training [\[R, R, R\]](#).

NMN is a molecule known to boost NAD+ levels. Higher NAD+ levels can stimulate energy production in muscles, thus improving endurance.

37



Yerba Mate

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take yerba mate as a supplement by consuming 1 to 3 grams of the dried leaves in capsule form daily, or by drinking 1 to 3 cups of yerba mate tea. Do this consistently for at least 4 to 8 weeks to observe potential benefits.

TYPICAL STARTING DOSE

1 g

Description

Yerba mate is a South American herbal tea known for its caffeine content and antioxidant properties. It provides a boost in alertness and mental clarity and is used for its potential to enhance focus and energy.

Yerba mate is a traditional South American beverage made from the dried leaves of the yerba mate plant (*Ilex paraguariensis*). It is commonly consumed in countries like Argentina, Uruguay, Paraguay, and Brazil, and has a long history of cultural significance and social bonding.

Yerba mate is traditionally sipped through a *bombilla*, a special metal straw, from a gourd-shaped container. This results in a flavorful and stimulating drink often shared among friends and family.

How it helps

In a placebo-controlled trial of 11 well-trained male cyclists, ingesting yerba mate (5 g/day) for 5 days improved endurance performance and increased fat utilization [\[R\]](#).

Yerba mate contains caffeine, which boosts energy levels and endurance. Its antioxidants and amino acids may further enhance physical performance, delay fatigue, and speed up recovery.

38



Urolithin A

IMPACT

1 / 5

EVIDENCE

1 / 5

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

39

Cold Exposure

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Gradually expose yourself to cold temperatures for short periods, starting with 1-2 minutes and increasing up to 5-10 minutes. This can be achieved through cold showers, outdoor exposure in cold weather, or ice baths. Aim to do this 2-3 times per week.

TYPICAL STARTING DOSE

1 minutesute

Description

Cold exposure, when done safely and gradually, can have potential health benefits like increased calorie burn, improved circulation, and enhanced resilience to cold temperatures. Cold exposure techniques, such as cold showers or outdoor winter activities, may help boost metabolism and promote overall well-being when practiced mindfully.

Please note: rapid instead of gradual cold exposure causes dangerous, and even fatal, changes in the breath and heart rates, known as the cold shock response. Be cautious with any form of sudden temperature change in your environment, especially if you have heart disease or other chronic conditions [\[R\]](#).

How it helps

Nine trained male runners completed familiarization and three randomized 5-km running time trials on a non-motorized treadmill **in the heat (33°C)**. The trials included pre-cooling by cold-water immersion (CWI), mid-exercise cooling by intermittent facial water spray (SPRAY), and a control of no cooling (CON). Performance time was significantly faster with CWI and SPRAY compared to CON [\[R\]](#).

Cold exposure increases cardiovascular strain, which can improve your body's ability to deliver oxygen to muscles during endurance activities. It also enhances your mental toughness, as persisting through the discomfort helps build resilience.

Please note: *Rapid cold exposure can cause life-threatening changes to your breathing and heart rate. This is called the cold-shock response. Be cautious of any form of sudden temperature change to your environment, especially if you have heart disease or other health conditions* [\[R\]](#).

40



Olive Polyphenols

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take olive polyphenol supplements with a meal, ideally containing fats to enhance absorption. Dosages typically range from 250 to 1000 mg daily, based on the product's concentration and purity. It is advised to follow the specific dosage recommended on the supplement's label or by a healthcare professional. For ongoing benefit, incorporate it into your daily routine.

TYPICAL STARTING DOSE

250 mg

Description

Olive polyphenols are plant compounds found in olives and olive products. They have been associated with a reduced risk of chronic diseases, including heart disease, by supporting healthy blood vessels and reducing oxidative stress.

How it helps

Olive polyphenols may help by promoting better blood flow, reducing inflammation, and increasing energy utilization during prolonged physical activities.

In a placebo-controlled trial of 29 recreationally active participants, supplementation with an olive fruit water phytocomplex (28 mL, 2x/day) for 16 days improved endurance performance and acute recovery while reducing exercise-induced oxidative stress [\[R\]](#), [\[R\]](#).

The study examined the effects of OliPhenolia® supplementation, rich in hydroxytyrosol, on exercise performance and recovery in 29 recreationally active individuals over 16 days. OliPhenolia® may enhance aerobic exercise performance and acute recovery due to its phenolic compounds, including hydroxytyrosol [\[R\]](#).

The study evaluated the bioavailability of hydroxytyrosol (HT) from OliPhenolia® in 15 healthy volunteers and its short-term impact on oxidative stress markers in 29 recreationally active participants. OliPhenolia® consumption reduced exercise-induced oxidative stress [\[R\]](#).

41



Watermelon

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate fresh watermelon into your diet, aiming to consume about 1-2 cups of cubed watermelon daily, either as a snack or part of your meals. It is best consumed fresh to maximize its hydrating effects and nutritional benefits.

Description

Watermelon is a refreshing fruit known for its high water content and being a good source of vitamins A and C. It is used to help stay hydrated and may support skin health due to its antioxidant properties.

How it helps

Eating watermelon can improve endurance because it's rich in L-citrulline, an amino acid that helps with muscle soreness and improves oxygen transport to the muscles. This results in enhanced endurance and faster recovery between workouts.

A study with 19 healthy men found that consuming watermelon with L-citrulline and pomegranate reduced muscle damage markers, maintained exercise force, and reduced post-workout soreness [\[R\]](#).

42



Almonds

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate a handful of almonds (about 23 kernels) into your daily diet. You can eat them as a snack, add them to your breakfast cereals or yogurt, or include them in salads and other dishes. Do this consistently for ongoing health benefits.

Description

Almonds are a good source of omega-6s, protein and vitamins, making for a great snack food. A 1-ounce serving provides 3700 mg of omega-6.

Almonds are nutritious tree nuts that originate from the *Prunus dulcis* tree. They are packed with essential nutrients, including healthy fats, fiber, vitamin E, and magnesium, which collectively contribute to heart health, support weight management, and may help regulate blood sugar levels.

How it helps

Almonds are packed with healthy fats, protein, and fiber that provide sustained energy, helping to improve endurance. They also contain magnesium and potassium, which aid muscle function and recovery.

In a study with five physically active males, almond supplementation 2 hours before cycling resistance training sessions led to increased NEFA levels (0.09 mg·dL⁻¹) and improved performance (5389 W vs. 4470 W with placebo) [\[R\]](#).

43



Stability Training

IMPACT

1 / 5

EVIDENCE

1 / 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 six-week CST intervention effectively increased the isometric strength and endurance of selected core muscles but did not significantly enhance throwing velocity compared to standard training [R].

Another 6-week core stabilization training program improved balance and endurance in 13 healthy high school track and field athletes, supporting its use for similar athletes [R].

Stability training may help by strengthening the core muscles, which helps optimize body balance and stability.

44



Concord Grape Juice

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Drink 8-12 ounces of 100% Concord grape juice daily. Continue this practice as part of your daily diet to see potential health benefits.

Description

Concord grape juice is rich in antioxidants and may offer cardiovascular benefits by supporting heart health and potentially reducing blood pressure. Consuming this juice in moderation as part of a balanced diet may contribute to overall cardiovascular well-being.

How it helps

Supplementation with purple grape juice in recreational runners increases time-to-exhaustion, enhances antioxidant activity, and potentially reduces inflammatory markers, as observed in a study with 28 volunteers [R, R].

45



Spirulina

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

500 mg

Description

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

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

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

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

- Cholesterol
- Blood pressure
- Blood sugar

How it helps

In a [placebo-controlled trial of 9 moderately trained men](#), supplementation with spirulina (6 g/day) for 4 weeks **increased time to fatigue after a 2-hour run (by 65 minutes)**, decreased carbohydrate oxidation rate by 10.3%, and increased fat oxidation rate by 10.9% [\[R\]](#).

46



Lactobacillus Plantarum

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take a probiotic supplement containing *Lactobacillus plantarum* 299V daily. The typical dosage is 10 billion colony-forming units (CFUs). Continue for at least 4 weeks to assess benefits on digestive health.

TYPICAL STARTING DOSE
10 billion CFU

Description

Lactobacillus plantarum is a [probiotic](#) bacterium found in many fermented plant products such as sauerkraut, pickles, brined olives, and Korean kimchi [\[R\]](#).

People take *L. plantarum* supplements to improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Diarrhea
- Skin appearance
- IBD
- High cholesterol

How it helps

Lactobacillus Plantarum, a probiotic, aids in improving the balance of bacteria in your gut, which can enhance nutrient absorption, helping provide sustained energy for better endurance. Additionally, it may help reduce inflammation in the body, promoting quicker recovery post exercise.

In [2 placebo-controlled trials of 70 healthy adults](#), supplementation with L. plantarum TWK10 (3-9 x 10¹⁰ cfu/day) for 6 weeks **increased endurance performance, muscle mass, glucose content in a maximal treadmill running test while reducing fatigue and body fat** [\[R\]](#), [\[R\]](#).

47



Resistant Starch

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Incorporate 40g of Jo's resistant starch into your daily diet. This can be done by adding it to smoothies, yogurt, or baked goods. Ensure to spread the intake throughout the day for better tolerance.

TYPICAL STARTING DOSE

40 g Hi-Maize

Description

Resistant starch is a type of starch that resists digestion in the small intestine, making it a prebiotic fiber that can benefit gut health. It can be found in foods like green bananas, legumes, and certain grains.

[Resistant starch](#) is starch that doesn't get digested in the small intestine [\[R\]](#) [\[R\]](#).

Some types of resistant starch include [\[R\]](#):

- **Type 1** occurs naturally in foods such as whole grains
- **Type 2** can be isolated from foods such as corn and green banana
- **Type 3** is created during the cooking and cooling process of starchy foods like potatoes

Resistant starch doesn't increase blood sugar like typical digestible starches do [\[R\]](#) [\[R\]](#).

Instead, it feeds good bacteria in the colon that [\[R\]](#) [\[R\]](#):

- Support healthy gut function
- Support immunity
- Reduce inflammation

How it helps

Resistant starch can enhance endurance by acting as a slow-release energy source, sustaining energy over long periods of physical activity. Additionally, it supports gut health, which can aid nutrient absorption and overall stamina.

In a [non-placebo-controlled trial of 10 male competitive cyclists](#), consuming resistant starch (1 g/kg) 30 minutes prior to endurance exercise **maintained higher rates of total carbohydrate oxidation and provided an ergogenic benefit** [\[R\]](#).

48



Acetyl-L-Carnitine

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take 500-1,000 mg of Acetyl-L-Carnitine per day, split into 2 or 3 doses, with or without food. Joe prefers taking 500 mg in the morning. It can be taken indefinitely for chronic conditions or for a period of several months for acute concerns.

TYPICAL STARTING DOSE
500 mg

Description

Carnitine is a protein building block (amino acid). It comes in many forms, such as acetyl-L-carnitine. Acetyl-L-carnitine may help with nerve damage and mood problems.

Carnitine is a protein building block (amino acid). It comes in many forms, such as acetyl-L-carnitine [R, R, R].

Acetyl-L-carnitine may help with [R, R, R]:

- Nerve damage
- Mood problems
- Cognitive decline

Doctors are also studying its potential effect on drug addiction [R].

How it helps

Supplementation with L-carnitine before physical exercise was found to prolong exhaustion times and decrease lactate and heart rate responses during exercise in professional footballers, suggesting improved endurance capacity [R].

However, other research shows no significant improvement in performance from carnitine supplementation. A study on trained endurance athletes found that L-carnitine supplementation did not improve performance time in a 5000 m race, despite increasing blood carnitine levels [R].

Another study highlighted that while carnitine supplementation may alter muscle metabolism, it does not necessarily enhance overall endurance performance. The study reported no significant changes in muscle fuel metabolism or physical performance from combined L-carnitine supplementation and exercise training [R].

49



Amaranth

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate amaranth into your diet by adding it to your daily meals. You can use amaranth grains as a substitute for rice in dishes, add them to your morning porridge, or use amaranth flour in your baking recipes. Aim to include amaranth 2-3 times per week to reap its benefits.

Description

Amaranth is a nutritious, gluten-free grain-like seed that has been a staple in the diets of various cultures for centuries. It is rich in protein, fiber, vitamins, and minerals like calcium and iron. Amaranth is used to promote heart health, support digestion, and provide sustained energy.

How it helps

In a placebo-controlled trial of 13 physically active men, consuming dietary nitrates from amaranth for 6 days improved aerobic capacity (maximum oxygen consumption and the first ventilatory threshold) during an increasing cycling exercise [R].

Amaranth is rich in essential nutrients like protein and fiber, which can bolster your endurance by providing long-lasting energy sources for your body. Additionally, the iron it contains helps to optimize oxygen transport.

50



Alanylglutamine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take alanylglutamine as a dietary supplement by mixing the prescribed dose, typically around 1 to 3 grams, into a beverage of your choice, such as water or juice. Consume this mixture once daily, preferably post-exercise or as directed by a healthcare professional.

TYPICAL STARTING DOSE

1 g

Description

Alanylglutamine is a dipeptide composed of the amino acids alanine and glutamine. It is used as a dietary supplement and is believed to support gut health and recovery from exercise.

How it helps

Alanylglutamine supplementation can improve endurance by aiding the recovery of muscle tissues after exercise and reducing fatigue. It does this via maintaining cellular hydration and energy production, contributing to improved overall stamina.

In a non-placebo-controlled trial of 10 physically active, dehydrated men, rehydration with L-alanyl-L-glutamine (0.05 or 0.2 g/kg) improved performance at a cycle ergometer test better than water. In 10 women, rehdration with L-alanyne-L-glutamine (1-2 g/500 mL) improved basketball shooting performance, reduced fatigue, and increased visual reaction time better than water, but had no effect on power [R, R].

51



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 cardiorespiratory endurance and vascular reactivity [R].

Walking meditation may help by gently exercising your muscles and cardiovascular system. Additionally, the mindful aspect can improve mental endurance, helping you persevere through discomfort or fatigue.

52



Tryptophan

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 500 mg of tryptophan supplement daily. This dosage can be taken all at once, preferably before bedtime to support sleep, or as directed by a healthcare professional.

TYPICAL STARTING DOSE

500 mg

Description

Tryptophan is an essential amino acid found in various protein-rich foods. It serves as a precursor for serotonin, a neurotransmitter that plays a role in mood regulation. Tryptophan is used in dietary supplements to potentially support mood and sleep disorders, although its effectiveness can vary among individuals.

[Tryptophan](#) is an amino acid. Your body uses it to make proteins and some hormones. **Humans can’t make tryptophan, so we need to get it from protein-rich foods** [\[R, R\]](#).

Your body uses tryptophan to make [serotonin](#) and [melatonin](#). **These brain chemicals are important for mood and sleep** [\[R, R\]](#).

An average adult needs at least **250-425 mg** of tryptophan per day, which is the amount you can get from [\[R\]](#):

- A pound of turkey or chicken
- Two cups of milk
- An ounce of canned tuna
- Two cups of oatmeal

Other foods high in tryptophan include **cheddar cheese, peanuts, pumpkin seeds, and seafood**. Most people get enough tryptophan from their diets, but supplements are also available [\[R, R\]](#).

How it helps

Tryptophan, an essential amino acid, may boost endurance by increasing serotonin levels in the brain, which leads to improved mood and perception of exertion during prolonged exercise. Still, more scientific evidence is needed to confirm this benefit.

In [2 placebo-controlled trials of 32 healthy sportsmen](#), supplementation with tryptophan (300 mg) **increased total exercise time on a treadmill or cycle ergometer (by 49.4%) and the distance covered during the last 20 min of the trial (by 567 m)** [\[R, R\]](#).

53



Cashew Apple

IMPACT

1 / 5

EVIDENCE

1 / 5

Description

The cashew apple, often overshadowed by the popular cashew nut, is a vibrant tropical fruit packed with impressive health benefits. Rich in vitamin C, cashew apples can boost your immune system, helping to fend off colds and other infections [R].

They also contain antioxidants that fight against free radicals, reducing the risk of chronic diseases such as heart disease and cancer. Additionally, the high levels of dietary fiber in cashew apples promote digestive health and can aid in weight management by making you feel fuller for longer [R, R].

With a unique, tangy flavor, cashew apples can be enjoyed fresh, juiced, or used in various culinary dishes, making them a versatile and nutritious addition to your diet.

How it helps

A study demonstrated that consumption of cashew apple juice (over 12 weeks) led to improvements in physical fitness, particularly in muscle strength of lower extremities and cardiopulmonary endurance. This enhancement in fitness was partly attributed to the improved oxidative stress status facilitated by the antioxidant properties of cashew apple juice [R].

Another study investigated the effect of cashew apple juice supplementation on substrate utilization during high-intensity exercise. It was found that supplementation led to increased fat oxidation and a corresponding decrease in carbohydrate oxidation during exercise in both trained and untrained men [R].

54



Rhodiola and Ginkgo

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 200-600 mg of Rhodiola in the morning, ideally 30 minutes before breakfast, to combat fatigue and improve focus. Add 120-240 mg of Ginkgo Biloba extract, divided into two or three doses throughout the day, preferably with meals to enhance cognitive function and circulation.

TYPICAL STARTING DOSE
200 mg

Description

[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

[Ginkgo](#) (*Ginkgo biloba*) is an ancient tree used in traditional Chinese medicine [\[R\]](#), [\[R\]](#).

According to limited evidence, ginkgo leaf extract may help with [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Anxiety
- Dementia
- Eye problems
- Blood vessel problems
- Vitiligo

How it helps

A supplement with rhodiola and ginkgo (270 mg, 4x/day for 7 weeks) improved endurance performance by increasing oxygen consumption and protecting against fatigue in a study of 67 healthy volunteers [\[R\]](#).

55



Chlorella

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 3 to 5 grams of chlorella in tablet or powder form daily, ideally before meals to improve digestion. Continue this supplementation for at least 2 to 3 months to observe benefits.

TYPICAL STARTING DOSE

3 g

Description

[Chlorella](#) is a **microalga from freshwater**. People consume chlorella in rice, pancakes, or tea. It can also be found as a supplement [\[R\]](#) [\[R\]](#).

Chlorella is **rich in protein** and several micronutrients. It may be useful to [\[R\]](#) [\[R\]](#) [\[R\]](#) [\[R\]](#) [\[R\]](#) [\[R\]](#) [\[R\]](#) [\[R\]](#):

- Reduce blood sugar
- Lower cholesterol
- Reduce blood pressure
- Improve immunity

How it helps

In a placebo-controlled trial of 10 healthy participants, supplementation with chlorella (15 tablets, 2x/day) for 4 weeks improved aerobic endurance capacity [\[R\]](#).

56



Cordyceps

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 500-1000 mg of Cordyceps extract in supplement form once daily, preferably with a meal to enhance absorption. This dosage is commonly recommended for general wellness and should be continued on a long-term basis, as effects accumulate over time.

TYPICAL STARTING DOSE

500 mg

Description

Cordyceps is a type of medicinal mushroom known for its potential to boost endurance and enhance respiratory function. It's used in traditional medicine and dietary supplements to support physical performance and overall vitality.

[Cordyceps](#) are a group of fungi (mushrooms) that grow on insects. Some species, like *O. sinensis* and *C. militaris*, are used in supplements [\[R\]](#).

O. sinensis grows on a moth caterpillar. Extracts and teas made from the fungus-caterpillar combination are often used in traditional Chinese medicine. They are thought to boost sex drive, reduce fatigue, and support kidney health [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

Cordyceps, a type of mushroom, is believed to increase the body's production of the molecule adenosine triphosphate (ATP), which is essential for delivering energy to the muscles. This could potentially help to improve the way your body uses oxygen, especially during exercise, and increase endurance levels.

In a [placebo-controlled trial of 20 elderly subjects](#), supplementation with *C. sinensis* extract (1000 mg/day) for 12 weeks **increased the metabolic threshold (above which lactate accumulates) by 10.5% and the ventilatory threshold (above which unbuffered H(+) stimulates ventilation) by 8.5%** [\[R\]](#).

However, *C. sinensis* (3 g/day for 5 weeks) **failed to improve endurance performance or aerobic capacity** in a [placebo-controlled trial of 22 male cyclists](#) [\[R\]](#).

A combination of *Rhodiola crenulata* and *Cordyceps sinensis* (20 mg/kg/day) for 8 weeks improved body composition changes during endurance training in one study with 14 participants. In another trial with 18 men, *Rhodiola* (1400 mg/day) and *Cordyceps* (600 mg/day) supplementation for 2 weeks increased exhaustive run time by 2.2% and preserved parasympathetic activity during altitude training. [\[R\]](#), [\[R\]](#)

However, consuming a *rhodiola* (1000 mg/day) *cordyceps* (300 mg/day) combination for 2 weeks **failed to improve cycling performance** in a [placebo-controlled trial of 17 competitive cyclists](#) [\[R\]](#).

57



Astaxanthin

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take an astaxanthin supplement daily, with a typical dosage ranging from 4 to 12 mg. It is best taken with a fat-containing meal to enhance absorption.

TYPICAL STARTING DOSE

12 mg

Description

Astaxanthin is a powerful antioxidant found in certain microalgae and seafood. It is known for its potential benefits in reducing oxidative stress, supporting skin health, and promoting eye health.

[Astaxanthin](#) is a naturally-occurring orange-red pigment carotenoid found in algae, shrimp, lobster, crab, and salmon [\[R\]](#). As an antioxidant, astaxanthin is **10 times stronger than zeaxanthin, lutein and [beta-carotene](#), and 100 times stronger than [vitamin E](#)** [\[R\]](#). People take astaxanthin to:

- Support skin health [\[R, R\]](#)
- Reduce exercise fatigue [\[R, R\]](#)
- Prevent heart disease [\[R, R, R\]](#)

How it helps

Astaxanthin, a potent antioxidant, can improve endurance by reducing muscle damage and inflammation caused by strenuous exercise, thus enhancing recovery and performance. It can also boost fat metabolism during exercise, reducing reliance on glycogen stores and hence prolonging endurance.

In a [placebo-controlled trial of 42 older adults](#), supplementation with astaxanthin (12 mg/day) for 3 months **improved muscle endurance and exercise efficiency (measured as fat oxidation)** [\[R\]](#).

The same dose taken for 7 days **improved the time to complete a 40-km cycling time trial (by 1.2%), fat oxidation (0.09 g/min), and the respiratory exchange ratio (by 0.03)** in a [placebo-controlled trial of 12 recreationally trained male cyclists](#). In another [placebo-controlled trial of 21 competitive cyclists](#), supplementation with astaxanthin (4 mg/day) for 28 days **improved the time to complete a 20-km cycling time trial** [\[R, R\]](#).

58



Stair Climbing

IMPACT1 / 5

EVIDENCE1 / 5

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

In a study involving 39 healthy seniors, stair-climbing interventions (one-step and two-step strategies) did not improve strength and power but reduced resting heart rate, improved dynamic balance, and lowered perceived exertion, suggesting potential benefits for overall fitness and fall risk reduction [\[R\]](#).

A study of 22 sedentary young women over 7 weeks showed that stair-climbing improved HDL cholesterol, reduced total:HDL ratio, lowered VO2, heart rate during climbing, and blood lactate levels, indicating enhanced cardiovascular health and fitness [\[R\]](#).

Regular stair climbing improves cardiovascular fitness, thus enabling your body to use oxygen more efficiently. It also strengthens the leg muscles.

59



Theacrine And Caffeine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a theacrine supplement, commonly found in doses ranging from 50mg to 300mg, daily in the morning. It's advisable to start with a lower dose to assess tolerance before gradually increasing to a more effective dose. Theacrine is typically taken for periods of up to eight weeks followed by a break to prevent habituation.

Consume 100 to 200 mg of caffeine supplement daily, ideally in the morning to avoid interference with sleep. This can be in the form of a pill or powder, taken with water. Avoid exceeding 400 mg per day to prevent side effects.

Description

Theacrine is a natural compound found in certain tea leaves and kucha tea. It is structurally similar to caffeine but has a smoother, longer-lasting effect without the typical jitters or crashes, making it a potential stimulant and cognitive enhancer.

Caffeine is a natural stimulant found in coffee, tea, and certain other beverages and foods. In moderate amounts, it can help increase alertness and concentration, potentially enhancing cognitive function and physical performance.

How it helps

A study indicated that the combination of Theacrine and caffeine may enhance endurance and cognitive performance during simulated physical activities, suggesting that Theacrine may offer some performance benefits when used in conjunction with other supplements [\[R\]](#).

60



Alpha-GPC Choline

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 300-600 mg of Alpha-GPC choline supplement daily, preferably in the morning or early afternoon to avoid interference with sleep. It can be taken with or without food. Continue this supplementation for at least 4-6 weeks to assess its effectiveness.

TYPICAL STARTING DOSE
300 mg

Description

Alpha-GPC (L-alpha glycerylphosphorylcholine) is a natural compound that can be found in small amounts in various foods, including soy, and is also produced in the body. It is a choline-containing compound that may support cognitive function and memory.

How it helps

Alpha-GPC Choline can improve muscular endurance by enhancing the body's muscle contraction process, due to its role in the synthesis of acetylcholine, a neurotransmitter essential for skeletal muscle movement. Furthermore, it contributes to fat metabolism, which provides energy during exercise.

In a study of 30 trained male cyclists, 7-day supplementation with BCAAs (8 g/day), L-citrulline (6 g/day), and A-GPC (300 mg/day) boosted peak power (by 11%) in a 20 km cycling time trial and extended time to fatigue (by 36.2%) during a high-intensity endurance cycling test, without affecting completion time, average power, or perceived exertion [\[R\]](#).

61



Chair Yoga

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Practice chair yoga for at least 20 minutes, three times a week. Find a comfortable chair without arms, wear loose clothing, and follow a guided chair yoga session focusing on gentle stretches and breathing exercises.

TYPICAL STARTING DOSE
30 minutes

Description

Chair yoga is a modified form of yoga designed for individuals with limited mobility or physical challenges. It offers a range of physical and mental health benefits, including improved flexibility, reduced stress, and enhanced relaxation, making it accessible to a wide range of individuals.

How it helps

In a non-placebo-controlled trial of 56 patients with psychiatric disorders, practicing chair yoga (20 min, 2x/week) for 12 weeks improved flexibility, hand grip, lower limb muscle endurance, and risk of falling [\[R\]](#).

Chair yoga may help by gently enhancing cardiovascular fitness and muscular strength.

62



Exercise At Least One Hour a Day

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Dedicate a minimum of 60 minutes to moderate-intensity activities such as brisk walking, swimming, or cycling. Do this most days of the week, aiming for at least 5 days to optimize benefits.

TYPICAL STARTING DOSE

1 hour

Description

[Exercise](#) can do wonders for your health. It can help you lose weight, improve your heart health, boost your mood, and more [\[R\]](#).

There are many ways you can be active. You can walk, run, swim, dance, or play team sports. **Everything counts, and it's never too late to start!**

Try to get at least **60 minutes of moderate physical activity on most days**, including walking. **Getting a mix of cardio (min 150 min/day) and strength training (min 2 times a week) may be optimal.**

How it helps

Regular endurance training contributes to better maintenance of exercise performance and physiological adaptations even in older adults, demonstrating the long-term benefits of consistent physical activity [\[R\]](#).

63



Aquatic Exercise

IMPACT

1 / 5

EVIDENCE

1 / 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

Another study compared the effects of aquatic exercises with and without a high-intensity component on the functional status and muscle endurance of people with chronic low back pain. It found that adding deep-water running to aquatic exercises improved lumbar muscle endurance and performance [\[R\]](#).

64

Dietary Iron

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate iron-rich foods into your daily meals, such as red meat, chicken, turkey, fish, beans, lentils, tofu, cooked spinach, and fortified cereals. Aim for at least 18 mg of iron per day for adult women and 8 mg per day for adult men. It's also beneficial to pair these foods with vitamin C-rich foods like oranges, strawberries, or bell peppers to enhance iron absorption.

Description

Iron (Fe) is an essential mineral. It helps make [hemoglobin](#), a protein that carries oxygen to cells. In this way, iron **increases energy** and supports **brain and immune system function** [\[R\]](#), [\[R\]](#), [\[R\]](#).

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

- Oysters
- White beans
- Beef
- Chocolate
- Spinach
- Fortified cereals

Women should be getting **8-18 mg** of iron per day, while **men** should be getting **8 mg** [\[R\]](#).

Groups at risk of iron deficiency include [\[R\]](#):

- Menstruating women
- Children
- Vegetarians
- Routine blood donors

How it helps

A study found that increasing iron status through dietary supplementation in iron-depleted, sedentary women increases endurance performance at both near-maximal and submaximal exercise intensities. The supplementation led to significant improvements in endurance capacity, which was measured by increased time to exhaustion and better oxygen utilization during exercise [\[R\]](#).

Another review discusses the critical role of iron in exercise performance, especially in women athletes who are often at increased risk of iron deficiency due to factors like menstruation and dietary restrictions. The review recommends dietary treatment methods, such as an iron-rich diet, to maintain adequate iron status, which is crucial for optimal performance in endurance sports [\[R\]](#).

65



Phosphatidylserine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 100 mg of phosphatidylserine three times daily with meals. Continue this regimen for up to 6 months to evaluate its effectiveness.

TYPICAL STARTING DOSE

300 mg

Description

Phosphatidylserine is a naturally occurring phospholipid found in cell membranes, primarily in animal-based sources such as meat and fish. It is commonly used as a dietary supplement to potentially support cognitive function and memory, as well as age-related cognitive decline and improving focus and mental clarity.

[Phosphatidylserine](#) is a major component of all cell membranes. It’s found in high amounts in the brain, and it helps support brain function.

People use phosphatidylserine as a supplement to improve mental focus, memory, and mood.

How it helps

Phosphatidylserine is a phospholipid that supports cellular function and communication, crucial for physical performance. It may improve endurance by speeding recovery, reducing muscle soreness, and potentially improving well-being following strenuous exercise.

Fourteen active males underwent intermittent cycling at varying intensities. They were later given either phosphatidylserine (PS) or a placebo. The study revealed that PS significantly increased exercise time to exhaustion at 85% VO2max (P = 0.005). PS increased the time, while the placebo group remained unchanged. [\[R\]](#)

66



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 provides carbohydrates for quick energy and hydration that can improve endurance. Cashews are a source of healthy fats and protein that aid in sustained energy and muscle recovery.

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 [\[R\]](#).

67



Berries

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate a variety of berries such as strawberries, blueberries, raspberries, and blackberries into your daily diet. Aim for at least one cup of fresh or frozen berries every day, either as a snack, part of your breakfast (such as in oatmeal or yogurt), or as a dessert.

Description

Berries, such as strawberries, blueberries, and raspberries, are packed with antioxidants, vitamins, and fiber. Regular consumption of berries may support heart health, improve cognitive function, and contribute to overall well-being.

How it helps

Ingestion of Haskap berries, which are high in anthocyanins, resulted in improvements in both submaximal running efficiency and 5 km time trial performance [\[R\]](#).

68



Red Light Therapy

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Position yourself or the specific area of your body that needs treatment about 6 inches away from a red light therapy device. Use the device for 10 to 20 minutes daily. It is recommended to continue this daily regimen for at least several weeks to notice benefits.

TYPICAL STARTING DOSE

20 minutes

Description

Red light therapy involves exposure to low-level red or near-infrared light, which may promote skin rejuvenation, reduce inflammation, and improve circulation when used for therapeutic purposes in skin care and wellness treatments.

How it helps

In a placebo-controlled trial of 20 female athletes, 2 weeks of red light therapy improved sleep quality and endurance [\[R\]](#).

69



Pycnogenol

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 100 mg of pycnogenol supplement daily. This can be taken in a single dose or divided into two doses of 50 mg each, one in the morning and one in the evening.

TYPICAL STARTING DOSE
100 mg

Description

Pycnogenol (pine bark extract) is derived from the bark of the maritime pine (Pinus pinaster). It has been used in traditional n European folk medicine for centuries, and more recently as a supplement. The extract contains a group of bioactive compounds known as proanthocyanidins, which may be beneficial in supporting cardiovascular health, promoting skin health, and aiding in the management of various conditions related to inflammation and oxidative stress.

Pycnogenol comes from the bark of pine trees that grow in the Mediterranean [R, R].

It may improve [R, R, R, R, R, R]:

- Athletic performance
- Seasonal allergies
- Cognitive function
- Joint health
- Varicose veins

How it helps

Pycnogenol improves blood flow and oxygen supply to muscles, enhancing endurance by reducing fatigue. It also supports recovery by reducing muscle pain and cramps.

In a placebo-controlled trial of 145 volunteers, supplementation with pycnogenol (100 mg/day) for 8 weeks during a training program **improved 2-mile running time, and number of push-ups and sit-ups**. In another placebo-controlled trial of 54 athletes training for a triathlon from the same study, supplementation with pycnogenol (150 mg/day) for 4 weeks **reduced total triathlon time by ~6 min** [R].

70



Collagen Peptides

IMPACT1 / 5

EVIDENCE1 / 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

In a 12-week study, recreationally active women who took 15g of SCP daily during concurrent training (CT) showed greater endurance performance improvement compared to the placebo group. There were also improvements in fat-free mass (FFM) and heart rate at the anaerobic threshold in the treatment group [\[R\]](#).

71



N-acetylcysteine (NAC)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 600 mg of N-Acetylcysteine (NAC) supplement daily with water. It can be taken at any time of the day, but try to take it at the same time each day for best results.

TYPICAL STARTING DOSE
1200 mg

Description

NAC is a supplement that contains a form of the amino acid cysteine, a protein building block that your body uses to make the antioxidant glutathione. It is used for its potential antioxidant properties and its ability to support lung, gut, and mental health.

[N-acetylcysteine](#) (NAC) is converted to cysteine in the body. Cysteine is a protein building block (amino acid) that helps make the antioxidant glutathione [\[R\]](#).

People take NAC to potentially support [\[R\]](#), [\[R\]](#):

- Mental health
- Ovarian health and pregnancy outcomes
- Lung health
- Gut health

How it helps

In a [placebo-controlled trial of 8 participants](#), supplementation with NAC (1800 mg) 45 minutes prior to a heavy discontinuous exercise test **reduced respiratory muscle fatigue** [\[R\]](#).

72



Pomegranate Extract

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 250 to 500 mg of pomegranate extract once daily, preferably with a meal to enhance absorption. This should be continued consistently for at least 4 weeks to observe potential health benefits.

TYPICAL STARTING DOSE

250 mg

Description

Pomegranate extract is derived from the fruit of the pomegranate tree, a plant that has been used traditionally for thousands of years, from the Mediterranean to Asia. Pomegranate extract is often used today in supplements due to its high levels of antioxidants like punicalagins and anthocyanins, which may support heart health and reduce inflammation.

[Pomegranates](#) are red fruits that contain seeds covered by edible sweet coats. They are rich in antioxidants [\[R\]](#), [\[R\]](#).

Pomegranate may reduce inflammation and support heart health. People use pomegranate seed oil and peel in cosmetics and traditional medicine [\[R\]](#), [\[R\]](#).

How it helps

In a placebo-controlled trial of 19 healthy volunteers, supplementation with pomegranate extract 30 min before exercise enhanced vessel diameter and blood flow, and delayed fatigue [\[R\]](#).

73



Silk Amino Acid Hydrolysate

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take silk amino acid hydrolysate supplements orally, usually in the form of capsules or powder. If using powder, mix with water or a beverage of your choice. The typical dosage ranges from 500mg to 2g per day, divided into two doses. Consult the product label or a healthcare provider for the exact dosage suitable for your needs. Use consistently for at least one month to start noticing benefits.

Description

Silk amino acid hydrolysate is a type of protein that is broken down into smaller peptides and amino acids. It is a good source of essential amino acids and may help to improve gut health and reduce inflammation, among other benefits.

How it helps

Silk Amino Acid Hydrolysate can help with endurance by improving your body's muscle strength and delaying fatigue. It achieves this by encouraging the formation of new muscle cells and reducing muscle breakdown during intense physical activities.

In a placebo-controlled trial of elite male fin-swimmers, supplementation with silk amino acid hydrolysate (500 mg/kg body mass dissolved in 250 mL drink, 3x/day, 30 minutes before training) lowered serum lactic acid 7 times more than the control treatment, increased swimming velocity by 0.05 m/s, and lowered lactate by 4 mmol/L [\[R\]](#).

74



Bananas

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

Description

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

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

How it helps

Eating bananas can boost endurance because they are rich in carbohydrates, which provide lasting energy, and in potassium, which helps prevent muscle cramps during extended periods of exercise. As such, they are a beneficial fuel source before or during prolonged physical activity.

In a study with male athletes cycling 75 km, consuming bananas (BAN) or pears (PEAR) with 0.6 g carbohydrate/kg each hour led to performance times that were 5.0% and 3.3% faster compared to just water (WATER), with reductions in cortisol, IL-10, and total leukocytes as well [\[R\]](#).

In a study with trained cyclists, consuming bananas (BAN) or carbohydrates (CHO) during 75-km cycling trials showed similar performance and blood glucose levels. Both groups exhibited increased inflammatory markers, oxidative stress, and immune activity, with some differences in cytokine levels (IL-10, IL-8, and FRAP) favoring BAN. Metabolite analysis indicated common patterns of glutathione production and substrate utilization, with higher dopamine levels in the BAN group [\[R\]](#).

75



Carob

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 1 to 2 teaspoons (approximately 5 to 10 grams) of carob powder daily. It can be mixed into water, a smoothie, or sprinkled on foods such as yogurt or cereal. Continue this practice daily as part of your dietary supplement routine.

TYPICAL STARTING DOSE

5 g

Description

Carob is a nutritious and caffeine-free alternative to chocolate. It's often used in culinary applications and can be a part of a healthy diet as it contains vitamins, minerals, and dietary fiber.

How it helps

In a placebo-controlled trial of 23 taekwondo athletes, supplementation with carob extract (40 g carbo powder per day) for 6 weeks improved aerobic performance [R].

Carob is rich in fiber and antioxidants that could increase energy levels and improve physical performance.

76



L-Carnitine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

500 mg

Description

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

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

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

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

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

How it helps

L-carnitine aids in transporting fatty acids into your cells to be used as energy, potentially improving endurance.

14 healthy male volunteers (cycling): Following visit one, volunteers ingested either 80 g of CHO (Control) or 2 g of l-carnitine-l-tartrate and 80 g of CHO (Carnitine) twice daily for 24 weeks. The Carnitine group increased work output by 11% from baseline in the performance trial, while Control showed no change [\[R\]](#).

26 candidate professional footballers who volunteered to take part in the study. Athletes were given a glass of fruit juice 1 hour before applying L-carnitine. Then, 12 participants were given 3 g of L-carnitine, and the remaining 14 were given 4 g. The results show that 3 or 4 g of L-carnitine taken before physical exercise prolonged time to exhaustion [\[R\]](#).

Two double-blind trials examined L-carnitine supplementation's impact on exercise capacity in untrained subjects. The first trial (2 weeks) showed a slight improvement in submaximal performance, but the second (4 weeks) did not replicate this result. Overall, L-carnitine had minimal and inconsistent effects on exercise performance [\[R\]](#).

77



Ginkgo

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 120 mg of Ginkgo supplement daily, preferably with meals to aid absorption. This dosage is typically split into two 60 mg doses taken in the morning and evening for best results.

TYPICAL STARTING DOSE

120 mg

Description

[Ginkgo](#) (*Ginkgo biloba*) is an ancient tree used in traditional Chinese medicine [\[R\]](#), [\[R\]](#).

According to limited evidence, ginkgo leaf extract may help with [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Anxiety
- Dementia
- Eye problems
- Blood vessel problems
- Vitiligo

How it helps

In a study of 18 healthy, active men, supplementation with ginkgo extract (160 mg/day for 6 weeks) improved endurance performance, VO2 max, and blood antioxidant capacity [\[R\]](#).

78



Theacrine

IMPACT

0 / 5

EVIDENCE

1 / 5

How to implement

Take a theacrine supplement, commonly found in doses ranging from 50mg to 300mg, daily in the morning. It's advisable to start with a lower dose to assess tolerance before gradually increasing to a more effective dose. Theacrine is typically taken for periods of up to eight weeks followed by a break to prevent habituation.

Description

Theacrine is a natural compound found in certain tea leaves and kucha tea. It is structurally similar to caffeine but has a smoother, longer-lasting effect without the typical jitters or crashes, making it a potential stimulant and cognitive enhancer.

How it helps

A study indicated that the combination of Theacrine and caffeine may enhance endurance and cognitive performance during simulated physical activities, suggesting that Theacrine may offer some performance benefits when used in conjunction with other supplements [R].

However, theacrine alone may not enhance physical endurance performance [R, R].

79



Hydroxytyrosol

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take a hydroxytyrosol supplement at a dose of 5 to 10 mg per day, with or without food. This supplement should be taken daily for at least 8 to 12 weeks to observe potential health benefits.

TYPICAL STARTING DOSE

5 mg

Description

Hydroxytyrosol is a natural phenolic compound found in extra virgin olive oil. It is known for its antioxidant properties and may contribute to the health benefits associated with the Mediterranean diet.

How it helps

In a placebo-controlled trial of 29 recreationally active participants, supplementation with an olive fruit water phytocomplex (28 mL, 2x/day) for 16 days improved endurance performance and acute recovery while reducing exercise-induced oxidative stress [R, R].

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.

	Ferritin	102.2 ng/mL		9 Nov 2025
	Vitamin D, 25-Hydroxy, Total	58.59 ng/mL		9 Nov 2025
	Hematocrit	51.8 %		9 Nov 2025
	Hemoglobin	17.1 g/dL		9 Nov 2025
	Potassium, Serum	5.2 mmol/L		9 Nov 2025
	hs-CRP	1.6 mg/L		9 Nov 2025
	Iron	228 mcg/dL		9 Nov 2025