

ACTN3 (Power)

Gene Report

REPORT CATEGORY —



Sample Client

Report date: 15 January 2026

Powered by

omicsedge

Table of Contents

03 How this works

- 04 Impact
- 05 Evidence
- 06 Some things to keep in mind

07 Introduction

08 Your genetics

09 Your recommendations

53 Next Steps

- 53 Your Lab Results

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

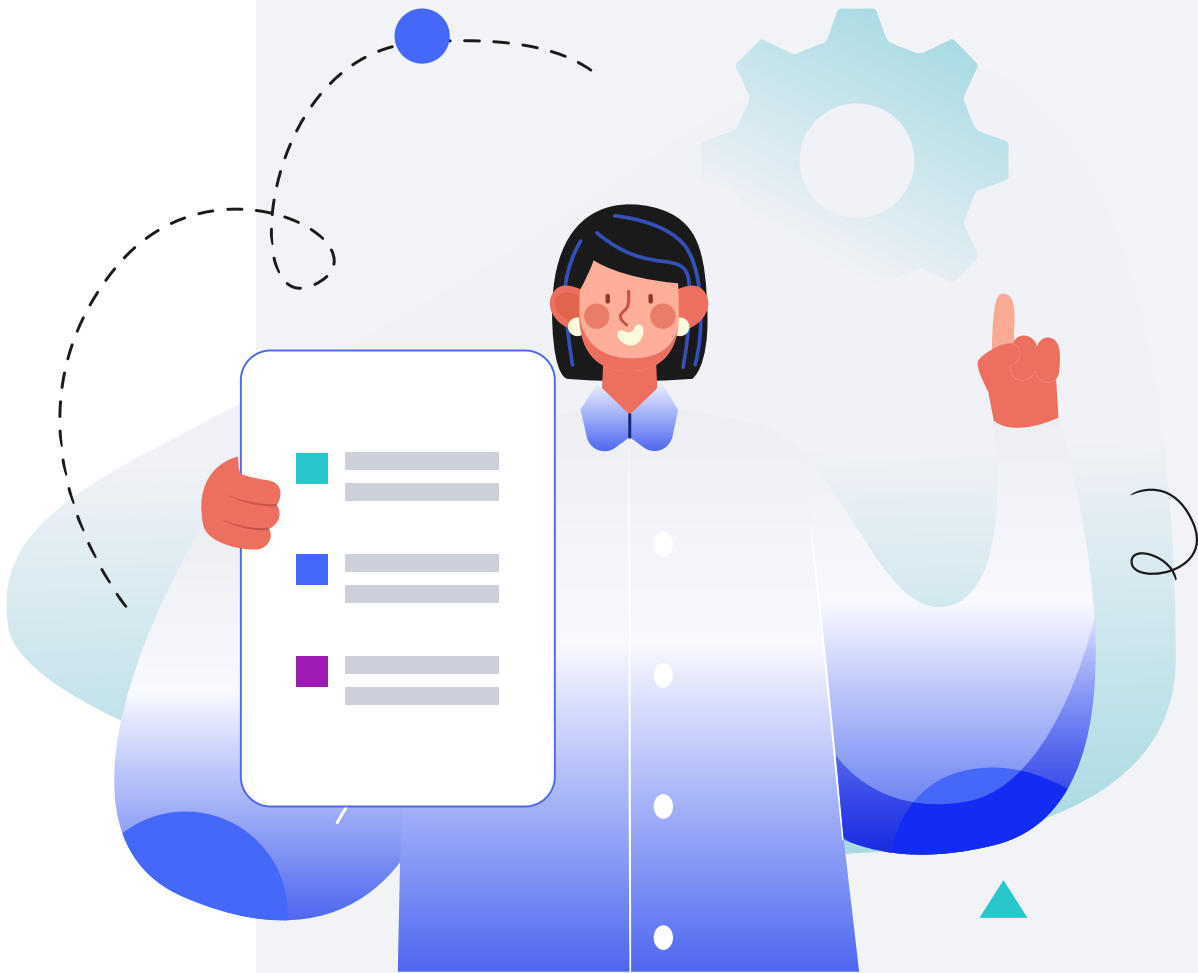
Male

HEIGHT

5ft 5" 165cm

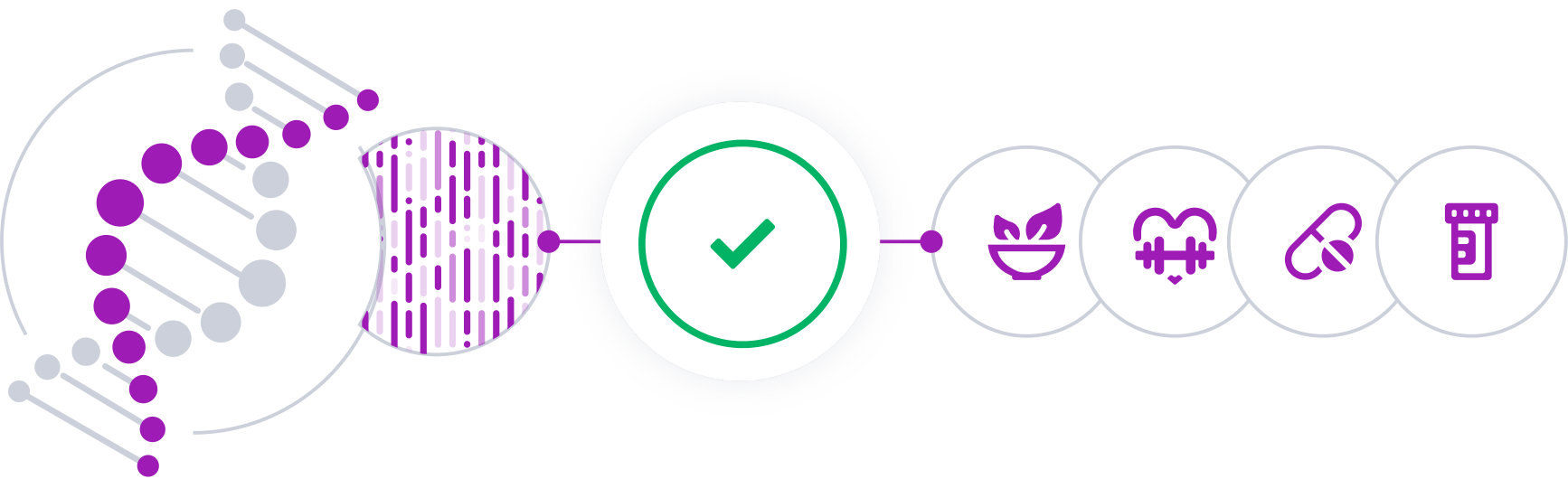
WEIGHT

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.

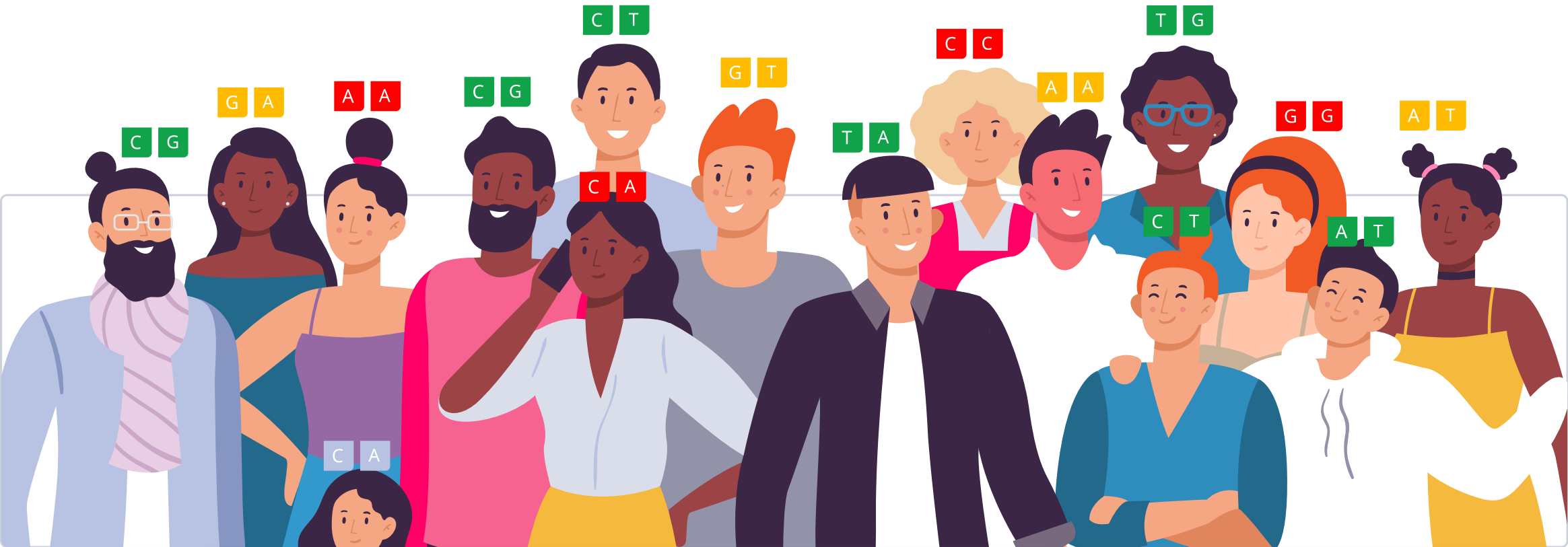


Similarly, our Trait Reports look at how your DNA influences your traits.



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

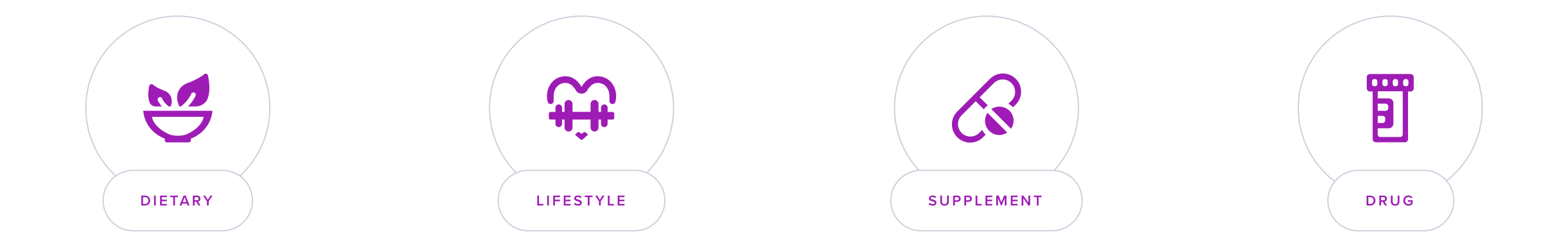
You have 2 risk alleles

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

Muscles enable your every movement and influence your athletic performance. They also help you breathe, talk, and much more.

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

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

Our muscles are made up of fibers. The type of fibers determines what a muscle is good at. **Fast-twitch fibers support rapid movements, and they are more common in power athletes.** Slow-twitch fibers support milder long-term movements, and 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 Power

PERSONALIZED TO GENES

You carry one copy of the [ACTN3](#) variant linked to increased muscle power. People with one copy of this variant are more likely to be elite power athletes than those without it.

If you're interested in power training, stick with it! Try to combine it with strength and endurance training for an optimal balance.

Power is the ability to produce short, intense movements (e.g., sprinting, jumping, throwing). Our muscles are made up of fibers. The type of fibers determines what a muscle is good at. **Fast-twitch fibers support rapid movements and are more common in power athletes** [\[R\]](#), [\[R\]](#), [\[R\]](#).

Fast-twitch muscle fibers contain higher amounts of a specific protein (alpha-actinin-3) that supports muscle power. The gene that helps make this protein is called [ACTN3](#) [\[R\]](#).

A specific *ACTN3* gene variant determines whether people produce this protein or not. People who produce this protein tend to have increased power performance. They are more likely to be elite power athletes [\[R\]](#), [\[R\]](#), [\[R\]](#).

On the other hand, people with more slow-twitch muscle fibers may be more suitable for endurance sports. They may also have better cold adaptation.

However, fitness level and other lifestyle factors have a strong effect on your power. The impact of genetics is more pronounced in elite athletes because they have improved all other factors [\[R\]](#).

Also, other gene variants not included in this report may influence power performance.



TYPICAL ACTIVITY

Likely typical ACTN3 activity based on the genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
ACTN3	rs1815739	TC

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	Strength Training	1 hour	2	Power Training	1 hour
3	Exercise At Least One Hour a Day	1 hour	4	Tennis	
5	Whole-Body Vibration	15 minutes	6	Sleep for 7+ Hours	
7	Dietary Nitrates		8	Sufficient Calorie Intake	
9	Core-Strengthening Exercises	20 minutes	10	Creatine	2 g
11	Carbohydrates		12	Beta-Alanine	2 g
13	Stretching	15 minutes	14	Low-Level Laser Therapy (LLLT)	30 seconds
15	Stability Training	30 minutes	16	Myofascial Release	5 minutes
17	Blackcurrant Supplement		18	Colostrum	20 g
19	Betaine (TMG)	500 mg	20	Protein Supplement	20 g
21	Dietary Protein		22	Alpha-GPC Choline	300 mg
23	Leucine	2 g	24	Stair Climbing	10 minutes
25	Resveratrol	150 mg	26	Saffron	20 mg
27	L-Citrulline	3 g	28	Vitamin E	200 iu
29	Mangiferin and Quercetin	150 mg	30	Rhodiola	500 mg
31	Mangiferin and Luteolin	150 mg	32	Hydrogen Water	

33	Pycnogenol	100 mg	34	Flexibility Training	20 minutes
35	Collagen Peptides	10 g	36	Mitoquinone Mesylate (MitoQ)	
37	Behavioral Sleep Extension		38	Pickleball	
39	Hesperidin	500 mg	40	Citrus Bioflavonoids	500 mg
41	Quercetin	250 mg	42	Black Chokeberry	
43	N-acetylcysteine (NAC)	1200 mg	44	Ashwagandha Sensoril	125 mg
45	Ashwagandha	120 mg	46	Tryptophan	500 mg
47	Carnosine	1000 mg	48	Dance	30 minutes
49	Blackcurrants		50	Mangiferin	150 mg

1



Strength Training

IMPACT

5 / 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 power across various populations, including athletes, middle-aged, older adults, and even people with spinal cord injuries [R, R, R, R, R, R, R, R, R].

Studied strength training techniques include [R, R, R, R]:

- Traditional strength training
- High-velocity training
- Acute variable strength training
- Strength training combined with endurance training

Supervised training may be more beneficial, especially for older people. Moreover, the combination of strength training and vitamin D supplementation may improve power performance better than strength training alone in elderly people [R, R].

Despite the benefits of strength training in muscle strength and physical function, it may not help with power in overweight and obese people. Additionally, power may decline when strength training is ceased, especially in older and inactive people [R, R].

2



Power Training

IMPACT



EVIDENCE



How to implement

Engage in power training exercises, such as squats, lunges, and bench presses, at least twice per week. Each session should include 3-5 sets of 6-10 repetitions for each exercise, with a focus on explosive, powerful movements. Rest for at least 48 hours between power training sessions to allow for muscle recovery.

TYPICAL STARTING DOSE

1 hour

Description

Power training, also known as strength or resistance training, involves exercises designed to increase muscle strength and power. It contributes to improved muscle tone, bone density, and overall physical fitness.

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].

Some power training exercises include [\[R\]](#):

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

Benefits of power training include [\[R\]](#):

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

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

How it helps

Power training may improve power. Different training modalities may help, including [R, R, R]:

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

Jumping training may be a safe option for the elderly [R, 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].

3



Exercise At Least One Hour a Day

IMPACT

5 / 5

EVIDENCE

5 / 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

Research involving 43,796 people showed that increased physical activity is associated with enhanced muscle power. Different exercise modalities may help [\[R, R, R, R\]](#):

- Strength training [\[R, R, R, R, R, R, R, R, R\]](#)
- Nontraditional military training [\[R\]](#)
- Endurance combined with strength training [\[R\]](#)
- Power training (e.g., weightlifting, plyometric exercises) [\[R, R, R, R, R, R, R\]](#)

Power training with machines or free weights may offer similar benefits. High-intensity interval training (HIIT) may be especially helpful in improving aerobic and lower-body power [\[R, R, R, R, R\]](#).

Exercise may also help the elderly and people with spinal cord injury. The combination of strength training and vitamin D supplementation may improve power performance better than strength training alone in elderly people [\[R, R, R, R\]](#).

4



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 [\[R\]](#).

5



Whole-Body Vibration

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

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

TYPICAL STARTING DOSE

15 minutes

Description

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

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

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

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

How it helps

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

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

6



Sleep for 7+ Hours

IMPACT3 / 5

EVIDENCE3 / 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 lower anaerobic power while decreasing speed and power endurance, especially when exercising later in the day. Moreover, performance may worsen every hour spent awake after sleep loss [\[R\]](#).

7



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 nitrate (about 5.6-17.6 mmol/day), usually in the form of beetroot juice, may increase power performance by increasing the production of nitric oxide. Nitric oxide may lead to improved oxygen transport and uptake in muscles during exercise [\[R\]](#), [\[R\]](#), [\[R\]](#).

8



Sufficient Calorie Intake

IMPACT

3 / 5

EVIDENCE

2 / 5

How to implement

Consume a daily amount of calories that meets your body's energy needs based on your age, sex, weight, height, and physical activity level. Use an online calorie calculator or consult a dietitian to determine your specific caloric needs. Aim to distribute your calorie intake evenly across meals throughout the day.

Description

Calories measure the amount of energy supplied by food. Your body needs this energy to support all of its functions [\[R\]](#).

You get calories from eating foods rich in carbs, fat, and protein. These calories can be used for energy or stored as fat. Fat is used for energy during a calorie deficit. This may happen when there’s a low intake of calories or when calories are lost with exercise [\[R\]](#).

The average adult needs 30-40 calories per kilogram of body weight to have enough energy for the day. Exact needs can vary widely depending on age, gender, and physical activity. Not eating enough calories may result in [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Weight loss
- [Nutrient deficiency](#)
- Fatigue

How it helps

An energy balance deficit is associated with reduced power performance [\[R\]](#), [\[R\]](#).

9



Core-Strengthening Exercises

IMPACT

3 / 5

EVIDENCE

2 / 5

How to implement

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

TYPICAL STARTING DOSE

20 minutes

Description

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

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

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

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

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

How it helps

Non-placebo-controlled trials demonstrated the benefits of core strengthening exercises in various athletic groups. Cricket players who followed a 6-week core strengthening program experienced increased throwing velocity and core endurance. Soccer players saw improvements in sprinting ability and kicking performance after a 9-week core strength-training program. Female soccer players who engaged in pelvic and core strength training for 8 weeks showed enhanced vertical drop jump performance [\[R, R, R\]](#).

Core-strengthening exercises may help by providing a stronger base for your limbs to generate momentum.

10



Creatine

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

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

TYPICAL STARTING DOSE

2 g

Description

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

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

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

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

- Red meat
- Seafood
- Supplements

How it helps

Supplementation with creatine (20-30 g/day for 3-7 days followed by 5 g/day for 9 weeks or 3 mg/kg/day for 14 days) may improve muscle power. Creatine may help by supporting energy storage in the muscles [\[R, R\]](#).

11



Carbohydrates

IMPACT

2 / 5

EVIDENCE

3 / 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

Eating carbohydrates or doing carbohydrate mouth rinses when exercising longer than 90 min improves power in cyclists [\[R, R\]](#).

12



Beta-Alanine

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

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

TYPICAL STARTING DOSE

2 g

Description

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

How it helps

Beta-Alanine can enhance your performance by increasing exercise capacity and decreasing muscle fatigue. It does this by increasing the concentration of carnosine in muscles, which can help to buffer acid in muscles, leading to improved overall power.

In a study, 18 men did incremental running tests and then underwent 4 weeks of HIIT. Afterward, they were divided into two groups: one received β -alanine supplementation, while the other had a placebo. β -Alanine improved repeated sprint performance [\[R\]](#).

Twenty-three highly-trained judo athletes were randomly assigned to receive either beta-alanine (6.4gday-1) or placebo (dextrose, same dosage) for 4 weeks. Beta-alanine supplementation improved the number of throws per set and the total number of throws [\[R\]](#).

In a study with 30 healthy individuals, half received a placebo, and the other half received 6.4g/day of β -alanine during 5 weeks of strength training. β -Alanine increased power output during lifting, especially at maximal strength or maximum power output [\[R\]](#).

Twenty male basketball players, divided into β -alanine and placebo groups, used 6.4g/d of β -alanine or maltodextrin. The study found reduced CRP and IL-6 levels and increased anaerobic peak power in the β -alanine group compared to placebo [\[R\]](#).

Beta-alanine also Improved sprint and throwing measurements in water polo players [R](#), [R](#), [R](#).

However, in a 10-week study with 24 untrained men, where β -alanine or placebo was ingested during 6 weeks of high-intensity interval training, β -Alanine increased muscle carnosine content but did not affect performance or mitochondrial markers, possibly due to training intensity or an insufficient supplementation protocol [\[R\]](#).

13



Stretching

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

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

TYPICAL STARTING DOSE

15 minutes

Description

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

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

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

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

How it helps

Static stretching may have small beneficial effects on power, especially in older adults [\[R\]](#).

14



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

Applying low-level laser therapy (LLLT) before exercise **may improve muscle power**. Different phototherapy techniques may help, such as [\[R\]](#), [\[R\]](#).

- Light-emitting diode therapy (LED therapy)
- Light Amplification by Stimulated Emission of Radiation therapy (LASER therapy),

Laser therapy may also lower blood lactate levels. The greatest benefits may come from [\[R\]](#):

- Wavelength: 655 to 950 nm
- Energy dose for small muscle groups: 20 to 60 Joules
- Energy dose for large muscle groups: 60 and 300 Joules
- Maximum power output: 200 mW per diode.

However, not all studies support LED therapy benefits. A low to moderate level of evidence supports LLLT at the moment [\[R\]](#).

15

Stability Training

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

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

TYPICAL STARTING DOSE

30 minutes

Description

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

How it helps

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

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

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

16



Myofascial Release

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

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

TYPICAL STARTING DOSE

5 minutes

Description

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

How it helps

Power is not a recognized medical condition. Please provide a valid medical condition relating to myofascial release.

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

17



Blackcurrant Supplement

IMPACT2 / 5

EVIDENCE2 / 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 is rich in antioxidants, which may enhance energy and physical performance.

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].

18



Colostrum

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take colostrum supplements orally, typically 20 to 60 grams daily, split into two to three doses. It is recommended to start with a lower dose and gradually increase as needed. This supplement can be taken for varying durations, from a few weeks to several months, depending on the health goals and responses observed.

TYPICAL STARTING DOSE

20 g

Description

Colostrum is the first milk produced by mammals, including humans, after giving birth. It is rich in nutrients and antibodies and is believed to support newborns' immune systems and overall health.

Colostrum, or “first milk,” is the very first type of milk produced right after a mammal gives birth. It supports the newborn’s immune system and provides a rich source of nutrients and growth factors [R].

People take colostrum to boost immunity and exercise performance [R].

How it helps

The term "Power" is not recognized as a specific medical condition. Please provide the correct medical condition you're inquiring about.

In a study involving 51 males undergoing 8 weeks of resistance and plyometric training, those who consumed 60 g/day of bovine colostrum saw a significant increase in peak anaerobic power. However, it had no impact on alactic anaerobic work capacity, 1-RM, or plasma IGF-I levels [R].

Seventeen female and 18 male elite field hockey players, including players from the Dutch national team, received either 60 g of colostrum or whey protein daily. It is concluded that in elite field hockey players, colostrum supplementation improves sprint performance better than whey. However, there were no differences with regard to body composition or endurance performance [R].

19



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, may aid in enhancing strength and power in your workouts by boosting muscle protein synthesis, thus assisting in muscle growth and recovery. However, it's pivotal to note that no single factor or supplement can completely prevent the loss of power; it should be paired with appropriate exercise and diet.

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

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

Health Effects:

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

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

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

20



Protein Supplement

IMPACT

1 / 5

EVIDENCE

2 / 5

How to implement

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

TYPICAL STARTING DOSE

20 g

Description

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

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

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

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

How it helps

Protein supplements may help athletes and active adults enhance muscle mass and strength. Supplements may also boost both aerobic and anaerobic power [\[R\]](#).

21



Dietary Protein

IMPACT1 / 5

EVIDENCE2 / 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

Eating protein after exercise may increase the gains in muscle mass and power performance during long-term training [\[R\]](#).

22



Alpha-GPC Choline

IMPACT1 / 5

EVIDENCE2 / 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 supplements increase the production of acetylcholine, a neurotransmitter that improves brain functions. This could benefit those with Power condition by improving cognitive functions like memory, focus, and brain health.

In an [RCT with 48 healthy, college-aged males](#), A-GPC (250 mg or 500 mg/day, 2 doses) in comparison to placebo and caffeine (200 mg/day) was found to **increase maximum velocity and maximum mechanical power on countermovement jump (CMJ)**. 500 mg also reduced TSH levels. It did not have any effect on isometric strength and psychomotor function [\[R\]](#).

In a study involving 30 male cyclists, a 7-day supplementation with BCAAs, L-citrulline, and A-GPC improved peak power (11%) and time to fatigue (36.2%) during cycling tests but did not affect other performance metrics [\[R\]](#).

In a study of 13 males, alpha-GPC supplementation (600 mg/day for 6 days) improved lower body force, as evidenced by an increase in isometric mid-thigh pull peak force, but had no impact on upper body force. [\[R\]](#).

However, a [randomized cross-over study with 20 college-aged trained males](#) found that alpha glycerophosphocholine (500 mg/day), 250 mg uridine-5'-monophosphate, and DHA (1500 mg) **did not improve anaerobic exercise performance or cognition** [\[R\]](#).

23



Leucine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 2 to 3 grams of leucine supplement per day, with meals to enhance its absorption, particularly after resistance exercise to stimulate muscle protein synthesis. Consistency is important, so continue daily for at least several months to gauge effectiveness.

TYPICAL STARTING DOSE

2 g

Description

Leucine is an essential, branched-chain amino acid found in protein-rich foods that plays a key role in muscle protein synthesis and overall muscle health. It is commonly used by athletes and fitness enthusiasts to support muscle recovery and growth.

[Leucine](#) is a branched-chain amino acid (BCAA). It's essential, which means we can't produce it and must get it from food. Leucine is found in all protein-rich foods, such as [\[R\]](#):

- Red meat and poultry
- Fish
- Dairy products
- Eggs
- Legumes (e.g., beans and peas)
- Nuts (e.g., pistachios, almonds, and cashews)
- Cereals (e.g., corn, millet, semolina, and spelt)

How it helps

In a small study of competitive outrigger canoeists, supplementation with leucine (45 mg/kg/day for 6 weeks) increased upper body power [\[R\]](#).

24



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

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

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

Climbing stairs strengthens leg muscles like the quadriceps, hamstrings, and calves, which are crucial for mobility.

25



Resveratrol

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

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

TYPICAL STARTING DOSE
150 mg

Description

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

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

- Berries
- Red grapes
- Red wine
- Peanuts

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

How it helps

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

26



Saffron

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

20 mg

Description

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

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

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

- Gut conditions
- Heart health
- Mental health

How it helps

Saffron, packed with antioxidants, is claimed to improve mood, which could help with mental aspects of certain conditions. However, there are no direct, scientifically-proven benefits of saffron specifically for a condition called "Power", as such a medical condition doesn't exist.

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

27



L-Citrulline

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

3 g

Description

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

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

- Watermelon
- Pumpkins
- Cucumber
- Bitter melon

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

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

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

How it helps

In a placebo-controlled trial of 22 trained male cyclists, supplementation with L-citrulline (2.4 g/day) for 7 days reduced the time it took to complete a 4-km time trial by 1.5%. L-citrulline also improved concentration and reduced muscle fatigue after the trial [R](#).

L-citrulline can increase nitric oxide production, which improves blood flow to the muscles. It also helps remove ammonia, a substance that causes muscle fatigue.

28



Vitamin E

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

200 iu

Description

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

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

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

- Wheat germ
- Sunflower seeds
- Almonds
- Plant oils

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

How it helps

Vitamin E is an antioxidant, it protects cells from damage, but "Power" isn't a recognized medical condition. Could you please provide more details?

In a study involving 36 male physical education students over 3 weeks, daily supplementation of 400 mg vitamin E, 1000 mg vitamin C, and a combination of both significantly improved aerobic power compared to a control group given a placebo. [\[R\]](#).

Please note: *While dietary vitamin E is generally considered safe, vitamin E supplements have been linked to prostate cancer. They may also not be the best option for pregnant people. Those who have heart disease, bleeding disorders, or other conditions may also need to avoid them. Consult your doctor before taking vitamin E supplements [\[R\]](#).*

29



Mangiferin and Quercetin

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

To implement this recommendation, take a supplement containing mangiferin and quercetin daily. The typical dose is 150-300 mg of mangiferin and 500-1000 mg of quercetin, preferably with meals to enhance absorption. It's advisable to start with the lower dose and adjust based on tolerance and effectiveness. Continue this regimen consistently for at least 4-6 weeks to evaluate its benefits.

TYPICAL STARTING DOSE

150 mg

Description

Mangiferin is a natural compound found in mangoes and several other plants.

Researchers are interested in its potential benefits for blood sugar control, liver health, heart health, and more. However, the available evidence to support its use as a supplement is limited [\[R\]](#).

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

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

- Apples
- Onions
- Tea

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

How it helps

A study of 40 physically active people found that taking a mango leaf extract rich in mangiferin (140 ng), combined with quercetin (140 mg) 1 hour before strenuous exercise improved repeated-sprint ability [\[R\]](#).

This combination may help by improving the muscles' ability to use oxygen during periods of limited blood flow. It may also reduce blood lactate levels [\[R\]](#).

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

30



Rhodiola

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

500 mg

Description

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

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

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

- Fatigue
- Burnout
- Low mood

How it helps

Supplementation with rhodiola extract (1500 mg/day) for the 3 days before a repeated Wingate Anaerobic Test and 500 additional mg 30 min before the test improved mean anaerobic power, anaerobic capacity, and total work, but not fatigue, in a placebo-controlled trial of 11 physically active women [\[R\]](#).

31



Mangiferin and Luteolin

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take mangiferin and luteolin supplements with water, ideally with a meal to enhance absorption. For general health benefits, consume mangiferin in doses of 150 mg to 300 mg and luteolin in doses of 100 mg to 200 mg daily. Continue this supplementation routine daily for at least several weeks to assess benefits.

TYPICAL STARTING DOSE
150 mg

Description

Mangiferin is a natural compound found in mangoes and several other plants.

Researchers are interested in its potential benefits for blood sugar control, liver health, heart health, and more. However, the available evidence to support its use as a supplement is limited [\[R\]](#).

Luteolin is a flavonoid with potential anti-inflammatory and antioxidant properties, and it is found in various fruits and vegetables. Incorporating luteolin-rich foods into your diet may help reduce inflammation and support overall health.

How it helps

Similarly, the combination of mango leaf extract (140-420 mg/day) and luteolin (50-100 mg/day) taken for 15 days improved sprint performance, muscle oxygen extraction, and brain oxygenation in a placebo-controlled trial of 12 physically active men [\[R\]](#).

32



Hydrogen Water

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

Description

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

How it helps

Hydrogen-rich water acts as an antioxidant, scavenging harmful free radicals from your body which can improve general health. However, it doesn't treat a condition called "Power," as it's not recognized as a medical condition.

In a placebo-controlled trial of 8 male cyclists, drinking hydrogen-rich water (2L/day) for 2 weeks helped maintain peak power output in repetitive sprints to exhaustion over 30 minutes. In a placebo-controlled trial of 16 male soccer players, pre-exercise supplementation with hydrogen-rich water improved sprint times at 15 m for the 14th and 15th sprints (by 3.4% and 2.7%, respectively) and sprint time at 30 m (by 1.9%). However, neither lactate concentrations nor ratings of perceived exertion were significantly different [\[R\]](#), [\[R\]](#).

33



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" is not known to treat a condition called "Power". It's usually used to manage conditions related to inflammation and circulation. Can you please provide the correct name of the condition?

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

34

Flexibility Training

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

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

TYPICAL STARTING DOSE

20 minutes

Description

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

How it helps

Non-placebo-controlled trials reveal the benefits of flexibility training on power performance. Soccer players practicing it 4 times a week for 4 weeks improved explosiveness and speed. In men, 10 weeks of flexibility training increased jump height, and drop jump height when combined with resistance training. Among older adults, both flexibility and endurance training effectively improved lower extremity power and physical function [\[R\]](#), [\[R\]](#), [\[R\]](#).

Including flexibility training in your fitness routine may improve the range of motion around your joints and reduce the chances of muscle stiffness, injuries, and lower back pain.

35



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

Collagen peptides supply the body with amino acids that are used to make new collagen, a key protein for maintaining skin, bone, and joint health. Regular consumption of these supplements can potentially alleviate symptoms of conditions such as osteoarthritis by rebuilding the cartilage that cushions your joints.

In a double-blinded study, 50 healthy male athletes (aged 18-25) were given either HC + C (20 g hydrolyzed collagen + 50 mg vitamin C) or a placebo (20 g maltodextrin) for 3 weeks. The HC + C group showed improved Rate of Force Development (explosive strength) in squat and countermovement jump exercises during their training [\[R\]](#).

36



Mitoquinone Mesylate (MitoQ)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take MitoQ supplement by swallowing one capsule each morning with water, preferably on an empty stomach to aid in its absorption. This should be done daily for an extended period, often several months, to notice a significant benefit in conditions related to mitochondrial dysfunction or to support overall mitochondrial health.

Description

Mitoquinone mesylate is a novel antioxidant compound that targets mitochondria, the energy-producing organelles in cells. It has the potential to support cellular health and may have applications in promoting overall well-being.

How it helps

Supplementation with mitoQ (20 mg/day) in two separate trials demonstrated performance benefits. In one placebo-controlled trial, untrained men experienced enhanced peak power improvements after HIIT cycling. Another trial with recreationally trained men showed that mitoQ supplementation reduced completion time in an 8-km cycling trial and increased power output compared to placebo [\[R, R\]](#).

MitoQ targets the mitochondria, potentially helping it function more effectively and enhance overall energy levels. Its antioxidant properties may also protect cells from oxidative stress, potentially slowing the progression of conditions linked to decreased cellular energy like fatigue.

37



Behavioral Sleep Extension

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

To implement behavioral sleep extension, aim to increase your total sleep time by going to bed 15 to 30 minutes earlier than your usual bedtime, or by allowing yourself to sleep later in the morning. Gradually increase this time as needed to reach a target of 7 to 9 hours of sleep per night, consistently, including on weekends. Adjust your daily schedule to accommodate this change, making sleep a priority.

Description

Behavioral sleep extension involves adopting healthier sleep habits to extend the duration and improve the quality of sleep. It can lead to improved cognitive function, mood, and overall well-being by addressing sleep deficiency.

How it helps

In a non-placebo-controlled trial of 50 tactical athletes, undergoing four sleep extension nights improved standing broad jump distance. In a non-placebo-controlled trial of 11 students at the men’s basketball team, a 5- to 7-week sleep extension period increased sprinting speed [\[R, R\]](#).

38



Pickleball

IMPACT

1 / 5

EVIDENCE

1 / 5

Description

A meta-analysis of 13 studies concluded that practicing pickleball improves happiness, depression, life satisfaction, well-being, and stress in people older than 50 years old [R].

How it helps

In a non-placebo-controlled trial of 20 participants aged 50-75, practicing pickleball 3x/week for 6 weeks improved cognition, vertical jump height, and self-reported pain [R].

39



Hesperidin

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 500 mg of hesperidin supplement daily with water, preferably with a meal for better absorption. This should be maintained for at least a few weeks to gauge effectiveness, and adjustments should be made based on personal tolerance and results.

TYPICAL STARTING DOSE

500 mg

Description

Hesperidin is a flavonoid, a type of plant compound that has antioxidant and anti-inflammatory properties. It is found in citrus fruits, such as oranges, grapefruits, lemons, and tangerines.

People take hesperidin to reduce [R, R, R, R, R]:

- Inflammation
- Blood sugar
- Cholesterol

How it helps

Hesperidin, a bioflavonoid found in citrus fruits, is often recommended for its anti-oxidative and anti-inflammatory properties. For those with Powassan (POW) virus, a condition you may have meant, it could potentially support the immune response against infection, but its efficacy specifically for POW virus is not clinically proven.

In a study with 92 healthy participants, 400 mg and 500 mg of citrus flavonoid extract (CFE) increased average and peak power output significantly after 4 weeks and 8 weeks compared to placebo [R].

In a double-blind study with 40 amateur cyclists, 500 mg/day of 2S-hesperidin supplementation for eight weeks improved estimated functional threshold power (FTP) and maximum power compared to a placebo, enhancing cycling performance. VO2 results showed no significant differences between groups [R].

40



Citrus Bioflavonoids

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a daily supplement containing 500 to 1,000 mg of citrus bioflavonoids, preferably divided into two doses with meals to enhance absorption. Continue this regimen daily for at least several months to notice potential benefits.

TYPICAL STARTING DOSE

500 mg

Description

Citrus bioflavonoids are natural compounds found in citrus fruits like oranges and grapefruits. They are known for their antioxidant properties and may support overall immune health, cardiovascular function, and skin health.

How it helps

The term "Power" is not recognized as a medical condition, hence I cannot provide an explanation for how Citrus Bioflavonoids would be beneficial.

In a study with 92 healthy participants, 400 mg and 500 mg of citrus flavonoid extract (CFE) increased average and peak power output significantly after 4 weeks and 8 weeks compared to placebo [\[R\]](#).

In a double-blind study with 40 amateur cyclists, 500 mg/day of 2S-hesperidin supplementation for eight weeks improved estimated functional threshold power (FTP) and maximum power compared to a placebo, enhancing cycling performance. VO2 results showed no significant differences between groups [\[R\]](#).

41



Quercetin

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

250 mg

Description

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

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

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

- Apples
- Onions
- Tea

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

How it helps

A study of 40 physically active people found that taking a mango leaf extract rich in mangiferin (140 ng), combined with quercetin (140 mg) 1 hour before strenuous exercise improved repeated-sprint ability [\[R\]](#).

This combination may help by improving the muscles' ability to use oxygen during periods of limited blood flow. It may also reduce blood lactate levels [\[R\]](#).

In another study, quercetin supplementation (1000 mg/day for 7 days) improved high-intensity cycling performance in healthy adults [\[R\]](#).

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

42



Black Chokeberry

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate black chokeberry (*Aronia melanocarpa*) in your diet by consuming 100-200 grams of fresh berries daily. If using a concentrated form like juice or extracts, follow the manufacturer's instructions, usually around 100 ml of juice or 500 mg of extract per day, for at least 8-10 weeks to observe potential health benefits.

Description

Black chokeberry is a fruit known for its high content of antioxidants and potential health benefits. It may support cardiovascular health and provide immune system support when incorporated into a balanced diet.

How it helps

The term "Power" doesn't refer to a recognized medical condition so I cannot provide a recommendation. Will you be able to provide more specifics or details?

In a [placebo-controlled trial of 22 male football players](#), supplementation with lyophilized black chokeberry extract (6 g/day) for 90 days **improved performance at a 20-m shuttle run, reduced IL-6, and increased IL-10** [\[R\]](#).

43



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 10 well-trained athletes](#), supplementation with NAC (1200 mg/day) for 9 days **improved sprint performance** during the cycle ergometer race simulation and reduced post-exercise inflammation and oxidative damage [\[R\]](#).

44



Ashwagandha Sensoril

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

125 mg

Description

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

How it helps

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

Ashwagandha Sensoril can aid in power performance by boosting energy levels and promoting muscle growth.

45



Ashwagandha

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

120 mg

Description

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

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

How it helps

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

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

46



Tryptophan

IMPACT1 / 5

EVIDENCE1 / 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

In a [placebo-controlled trial of 20 healthy sportsmen](#), supplementation with tryptophan (600 mg/day) for 4 days **increased power output, average anaerobic power output, and power output during the last 20 min of the trial** [\[R\]](#).

In a [placebo-controlled trial of 6 healthy volunteers](#), drinking caffeine-free coke with 30 mg/kg tryptophan **increased ergometric work output** [\[R\]](#).

47



Carnosine

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take 500 mg of carnosine twice daily with meals. Continue this regimen for at least 2 to 4 weeks to start noticing benefits. It can be taken as a capsule or powder form mixed with water or juice.

TYPICAL STARTING DOSE

1000 mg

Description

Carnosine is a naturally occurring compound found in muscle tissues and certain foods. It is believed to have antioxidant properties and may support muscle function and overall cellular health.

[Carnosine](#) (β -alanine-l-[histidine](#)) is a compound naturally produced by the body. We also get it from eating meat and fish. Carnosine is abundant in our [\[R\]](#), [\[R\]](#):

- **Muscles**
- Heart
- Brain
- Nose

Carnosine has several important functions in the body, including [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Being an antioxidant
- Improving muscle function
- Removing toxic metals

During exercise, **carnosine may prevent muscle fatigue and boost athletic performance**. It may also help improve sugar metabolism [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

Carnosine has antioxidant effects, helping to reduce oxidative stress and inflammation which can contribute to mental fatigue and poor concentration in individuals with ADHD. However, there's no substantial evidence it directly treats or aids Power, possibly implying strength or physical energy.

In a study with twelve participants, Carn-BA (L-carnosine and β -alanine) ingestion before exercise improved MVC and CMJ after fatigue, enhanced CMJ during continuous jumping, reduced perceived effort, and increased muscle pain 24 hours later [\[R\]](#).

Two double-blind, placebo-controlled crossover studies examined the impact of preexercise ANS + CARN (20 mg/kg body wt each) supplementation on Wingate test performance. Study A saw a 6% increase in power during the initial 5 seconds, while Study B showed a 3% boost in peak power during three consecutive Wingate tests [\[R\]](#).

48



Dance

IMPACT

1 / 5

EVIDENCE

1 / 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

Aerobic dance may improve power performance more in people with certain gene variants [\[R\]](#).

 PERSONALIZED TO YOUR GENES

Aerobic dance may improve power performance more in people with your **AGT** gene variant [\[R\]](#).

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
AGT	rs699	GG	

49



Blackcurrants

IMPACT

0 / 5

EVIDENCE

1 / 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

In a study involving 15 young, active people, New Zealand blackcurrant (NZBC) extract (for 7 days) increased power and fat oxidation while decreasing systolic blood pressure post-exercise. However, another study did not find these benefits [\[R\]](#), [\[R\]](#).

50



Mangiferin

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take a mangiferin supplement of approximately 150-300 mg daily, ideally with a meal to enhance absorption. The duration of use depends on the specific health concern being addressed and recommendations from a healthcare provider.

TYPICAL STARTING DOSE

150 mg

Description

Mangiferin, a natural compound found in mangoes and other plants, is known for its antioxidant and anti-inflammatory properties. It has the potential to protect cells from oxidative stress and inflammation, promoting overall well-being.

Mangiferin is a natural compound found in mangoes and several other plants.

Researchers are interested in its potential benefits for blood sugar control, liver health, heart health, and more. However, the available evidence to support its use as a supplement is limited [\[R\]](#).

How it helps

A study of 40 physically active people found that taking a mango leaf extract rich in mangiferin (140 ng), combined with quercetin (140 mg) 1 hour before strenuous exercise improved repeated-sprint ability [\[R\]](#).

This combination may help by improving the muscles' ability to use oxygen during periods of limited blood flow. It may also reduce blood lactate levels [\[R\]](#).

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.