

Memory Performance

DNA Health Report

REPORT CATEGORY —



COGNITION

Sample Client

Report date: 15 January 2026

Powered by

 omicsege

Table of Contents

03 How this works

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

07 Introduction

08 Your genetics

10 Your recommendations

11 Next Steps

- 111 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

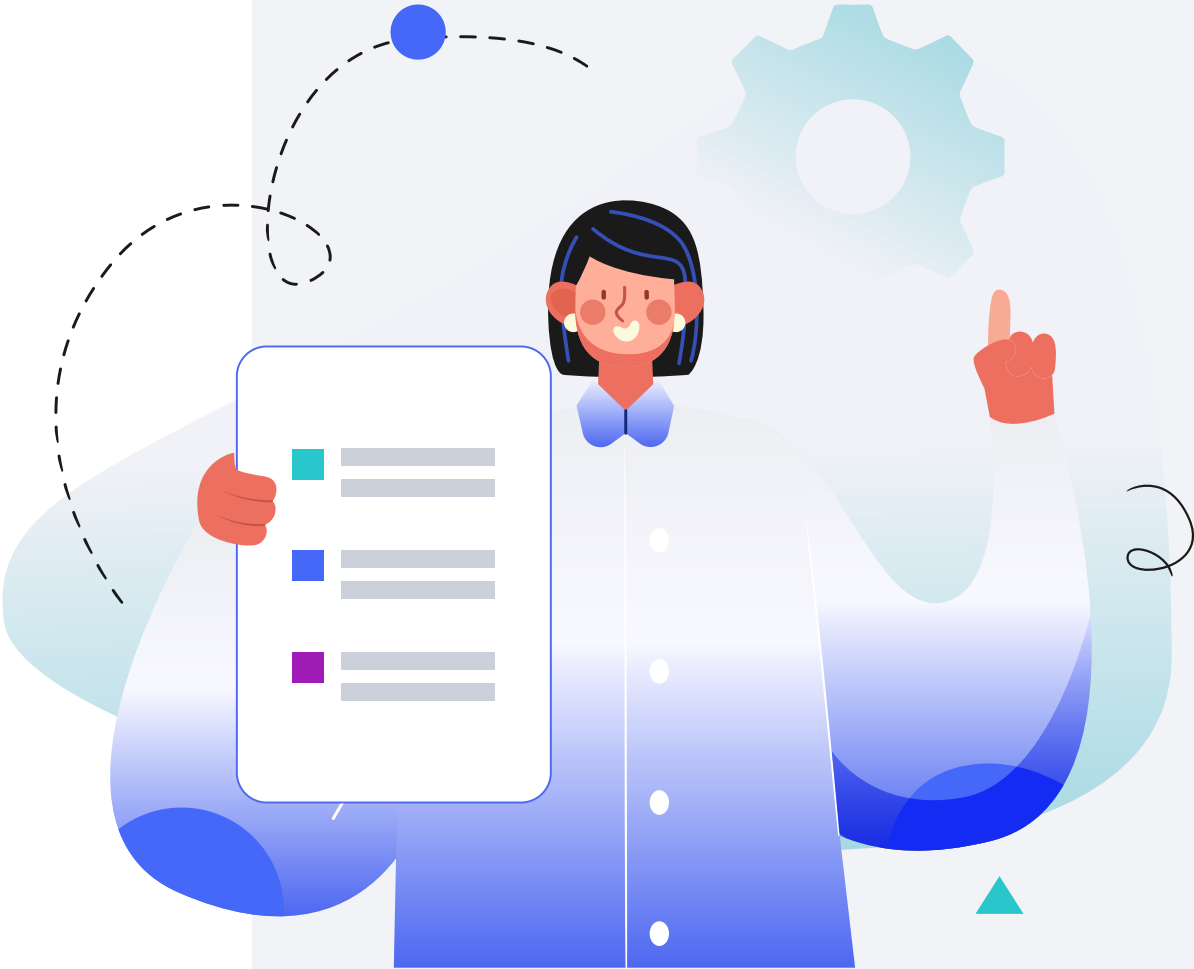
Male

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

Memory is the ability of our brain to **learn, store and recall information**. Memory performance refers to how good your brain is at doing this [\[R\]](#), [\[R\]](#).

There are different types of memory, such as [\[R\]](#), [\[R\]](#):

- **Short-term memory:** stores small bits of information temporarily
- **Working memory:** uses information stored in short-term memory for tasks such as solving problems
- **Long-term memory:** stores information more permanently

For example, when you check the prices of two bags of apples, you store the numbers in your short-term memory. If you want to calculate the price difference between the bags, you need to use your working memory. If you want to remember that price difference an hour from now, that requires long-term memory.

Two of the most important parts of the brain for memory are the [\[R\]](#):

- *Hippocampus*, which helps strengthen and store memories
- *Amygdala*, which attaches emotions to memories

Let’s say you cross the street and almost get hit by a red truck. The hippocampus helps you remember what the truck looked like, and the amygdala makes this a fearful memory. Because of this experience, you might be more vigilant when crossing the street for a while.

Memory is **crucial for learning, reasoning, language, problem-solving, and our sense of self**. It allows us to navigate the world, communicate, and change our behavior based on past experiences.

Genetics of Memory Performance

PERSONALIZED TO GENES

Based on the genetic variants we looked at, you likely have typical memory performance. However, your lifestyle and other environmental factors may also impact your memory.

Memory performance refers to how good your brain is at storing and recalling information [R, R, R].

About 30-70% of differences in people’s memory performance may be due to genetics. Genes involved in memory may influence [R, R, R, R]:

- The way brain cells grow and develop
- Brain cell communication

Ways to boost your memory performance include [R, R, R, R]:

- Being physically active
- Getting 7-9 hours of good-quality sleep every night
- Eating a healthy diet
- Spending time with family and friends
- Engaging your mind (e.g, reading, solving puzzles, learning new skills)

If you want to go the extra mile, there are specific techniques you can use to train your memory (e.g. mind palace). There is even a world memory championship!



TYPICAL

Predisposed to typical memory performance based on 7,166,380 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
HDGFL1	rs9466427	GG
HDGFL1	rs9348530	AA
HDGFL1	rs9358578	GG
HTATIP2	rs10741845	TA
/	rs9345419	TT
TMEM63A	rs6426075	GA
NT5DC2	rs4687625	CT
NT5DC2	rs2015971	CT
NT5DC2	rs11711421	CT
ITIH1	rs3774354	GA
ITIH1	rs1961958	AG
ITIH1	rs3774355	GA
ITIH1	rs6778844	TC
ITIH1	rs12487445	AC
ITIH1	rs6798246	GA
ITIH1	rs1961959	GC
PBRM1	rs17264436	TA
ITIH1	rs2289249	GA
GNL3	rs11177	GA
ITIH1	rs10865973	AT
ITIH1	rs2118540	TC
ITIH1	rs11717836	AG
ITIH1	rs6976	CT
ITIH1	rs2268027	GA
ITIH1	rs2239551	GA
CGGBP1	rs12492805	TG
ITIH1	rs2268025	AT
NEK4	rs1029871	GC
ITIH1	rs2286798	AC
TDRD3	rs4886229	CT
TEK	rs10757641	TC
TEK	rs633903	TG

GENE	SNP	GENOTYPE
TEK	rs581724	GT
MAT1A	rs4933327	GG
ZNF804A	rs1344706	AC
STARD3	rs879606	GG
COMT	rs4680	AG
DTNBP1	rs2619522	CA
TTC12	rs1076560	CA
SLC19A1	rs1051266	CT
SYNJ2	rs10945973	AG
LMX1A	rs4657412	AG
SYNJ2	rs2502601	AG
MAT1A	rs3851059	AG
SYNJ2	rs9356200	CT
SORL1	rs3824968	AT
COL4A2	rs4773144	AA
SYNJ2	rs10455935	GA
UBE2Z	rs15563	AA
WWC1	rs17070145	TT

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

Your Recommendations

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

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

DOSAGE		DOSAGE	
1	Sleep for 7+ Hours	2	Aerobic Exercise (Cardio)1 hour
3	Relaxation Techniques30 minutes	4	Exercise At Least One Hour a Day1 hour
5	Strength Training1 hour	6	Biofeedback
7	Mind-Body Exercise1 hour	8	N-Back Training20 minutes
9	Green Tea400 mg	10	Social Activity1 hour
11	Cognitive Training15 minutes	12	Leafy Green Vegetables
13	Tai Chi1 hour	14	Bacognize (Bacopa monnieri)300 mg
15	Avoid Pesticide Exposure	16	Mediterranean Diet
17	Maintain Optimal Iron Levels10 mg	18	Choline Supplements425 mg
19	Cocoa	20	Pyrroloquinoline Quinone (PQQ)20 mg
21	Yoga30 minutes	22	Eggs
23	Creatine2 g	24	Cognitive Activity15 minutes
25	Binaural Beats30 minutes	26	Blueberries
27	Phosphatidylserine300 mg	28	Mindfulness Meditation30 minutes
29	Meditation30 minutes	30	Pycnogenol100 mg
31	Soy Isoflavones40 mg	32	Dietary Iron

33	Whole Grains		34	Take Naps	20 minutes
35	Antioxidant Supplements		36	Ayurvedic Zinc	15 mg
37	Zinc	10 mg	38	Avoid Lead Exposure	
39	Mindfulness	30 minutes	40	Neurofeedback	1 hour
41	Ginkgo	120 mg	42	Rosemary	400 mg
43	D-Serine		44	Aromatherapy	30 minutes
45	Lemon Balm	500 mg	46	L-Tyrosine	500 mg
47	Avoid Phthalate Exposure		48	Avoid Mercury Exposure	
49	Enzogenol	200 mg	50	Phosphatidylserine And DHA	100 mg
51	Golf		52	Endurance Training	1 hour
53	Ashwagandha	120 mg	54	Spirulina	500 mg
55	Glycine	3 g	56	Breath Awareness	5 minutes
57	Boron	3 mg	58	Citicoline And Caffeine	
59	Mangiferin	150 mg	60	L-Pyroglutamic Acid	600 mg
61	Almonds		62	Bhastrika Yoga (Bellows Breathing)	5 minutes
63	Avoid BPA (Bisphenol A) Exposure		64	Tart Cherries	
65	Concord Grape Juice		66	Cognitive-Behavioral Therapy (CBT)	
67	Pilates and Endurance Training	1 hour	68	Avoid Exposure to Heavy Metals	
69	Omega-3 (Fish Oil)	500 mg	70	Phosphatidylcholine	420 mg
71	Bifidobacterium Longum	10 billion CFU	72	Green Tea Catechins and L-Theanine	200 mg

73	Sage Extract	300 mg	74	Curcumin Theracurmin	180 mg
75	Pomegranate Juice		76	Sensory Deprivation	40 minutes
77	Honey		78	Rosemary Oil Aromatherapy	2 drops
79	Eleuthero	300 mg	80	Black Seed (Black Cumin)	1000 mg
81	Fucoxanthin And Guarana		82	DHA (Omega-3)	200 mg
83	CBD	10 mg	84	L-Theanine and Caffeine	100 mg
85	Citicoline (CDP Choline)	250 mg	86	Boswellia	350 mg
87	Guided Imagery	30 minutes	88	Plasmalogens	
89	Phosphatidylserine And Phosphatidic Acid	300 mg	90	Pilates	30 minutes
91	Vinpocetine		92	Cyanidin	50 mg
93	Curcumin	500 mg	94	Lactobacillus Helveticus	10 billion CFU
95	Huperzine A	50 mcg	96	Alpha-GPC Choline	300 mg
97	Behavioral Sleep Extension		98	L-Theanine	100 mg
99	Avocado		100	Boswellia And Lemon Balm	300 mg
101	Kava	200 mg	102	Singing	20 minutes
103	Chicory		104	Avena Sativa	100 mg
105	L-Carnitine	500 mg	106	Alternate Nostril Breathing	10 minutes
107	BCAAs (Branched-Chain Amino Acids)	5 g			

1



Sleep for 7+ Hours

IMPACT

4 / 5

EVIDENCE

5 / 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

Short sleep worsens overall cognitive function, including memory. Specifically, sleep loss reduces short-term, long-term, procedural, and working memory [\[R, R, R, R\]](#).

Similarly, people with insomnia may have worse performance in episodic and working memory [\[R, R\]](#).

Taking short times during the day may also improve memory and other cognitive aspects. However, naps during night shifts may be ineffective at improving memory [\[R, R, R\]](#).

Sleep helps by promoting memory consolidation [\[R, R, R, R\]](#).

2



Aerobic Exercise (Cardio)

IMPACT

3 / 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

Studies show that [exercise](#) is one of the most important ways to support brain health. Exercise may improve [brain blood flow](#), reduce [inflammation](#), and stimulate the growth of new brain cells [[R](#), [R](#), [R](#), [R](#)].

Aerobic exercise may improve long-term memory, learning, and working memory, among other cognitive aspects [[R](#), [R](#), [R](#), [R](#), [R](#), [R](#), [R](#), [R](#)].

Exercise may be even more effective when combined with cognitive training and diet changes [[R](#), [R](#), [R](#)].

3

Relaxation Techniques

IMPACT3 / 5

EVIDENCE4 / 5

How to implement

Incorporate relaxation techniques such as deep breathing exercises, meditation, or yoga into your daily routine. Spend at least 15-30 minutes each day practicing one of these techniques, preferably in a quiet, comfortable space without interruptions.

TYPICAL STARTING DOSE

30 minutes

Description

Relaxation techniques encompass various methods like deep breathing, yoga, meditation, and progressive muscle relaxation, aimed at reducing stress and promoting mental and physical relaxation. Practicing these techniques regularly can help manage stress, improve mental clarity, and enhance overall emotional well-being.

We all get stressed from time to time.

[Stress](#) can help you deal with a challenge or avoid danger. However, **it’s not healthy to be stressed for a long time** [\[R\]](#), [\[R\]](#).

Relaxation techniques such as [yoga](#) and [meditation](#) can relieve stress in different ways. Most of them focus on breathing and help you get rid of negative thoughts and emotions [\[R\]](#).

People use relaxation techniques to improve conditions like [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Anxiety
- Depression
- Chronic pain

Progressive muscle relaxation is another relaxation technique. In this technique, you focus on tensing and relaxing different parts of your body. It is common to start with the toes and slowly work your way up to the neck and head [\[R\]](#), [\[R\]](#).

Autogenic training is a relaxation technique that a person may carry out on their own. It uses exercises that take the mind’s attention to bodily sensations such as warmth and heaviness [\[R\]](#), [\[R\]](#).

How it helps

Relaxation techniques may improve memory and other cognitive functions. These include:

- Yoga [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#)
- Meditation [\[R\]](#), [\[R\]](#), [\[R\]](#)
- Mindfulness [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#)

Relaxation techniques may help by:

- Reducing stress [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#)
- Improving focus [\[R\]](#), [\[R\]](#), [\[R\]](#)

4



Exercise At Least One Hour a Day

IMPACT

3 / 5

EVIDENCE

4 / 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 exercise may improve memory and other cognitive functions. Cardio may be the most helpful [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Exercise may also improve and preserve memory in older people, both healthy and with cognitive decline. Resistance training and mind-body exercises may be most effective in this age group [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Combining exercise with cognitive training may further help in older people with cognitive decline [\[R\]](#), [\[R\]](#).

Exercise may help by [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Improving [blood flow in the brain](#)
- Reducing [inflammation](#)
- Improving brain cell communication

 PERSONALIZED TO YOUR GENES

Your [PPP1R1B](#) gene variant is linked to poor memory performance. Exercise may help cancel out this effect [\[R\]](#). This variant also affects the [STARD3](#) gene.

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
GSDMB	rs907094	AA	

5

Strength Training

IMPACT3 / 5

EVIDENCE4 / 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

Regular exercise may improve memory and other cognitive functions. Cardio may be the most helpful [R, R, R, R, R, R, R, R].

Exercise may also improve and preserve memory in older people, both healthy and with cognitive decline. Resistance training and mind-body exercises may be most effective in this age group [R, R, R, R, R, R].

Combining exercise with cognitive training may further help in older people with cognitive decline [R, R].

Exercise may help by [R, R, R, R]:

- Improving [blood flow in the brain](#)
- Reducing [inflammation](#)
- Improving brain cell communication

6



Biofeedback

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Attend biofeedback sessions once or twice a week for about 8 to 10 weeks. During these sessions, a therapist will guide you through exercises to control different body functions, such as heart rate or muscle tension, using monitors that provide feedback on your physiological state. Practice the techniques learned during sessions at home daily to improve symptoms and manage your condition.

Description

Biofeedback is a type of therapy that teaches people how to control certain body functions, such as heart rate, blood pressure, and muscle tension. It can be used to treat a variety of conditions, including stress, anxiety, and chronic pain.

Biofeedback is a kind of “**brain training**” in which sensors are attached to your body. They detect information like your heart rate, temperature, and breathing rate. By seeing this information, you may be better able to control these functions [\[R\]](#), [\[R\]](#).

Biofeedback is used to help with [\[R\]](#), [\[R\]](#):

- Gut problems
- Chronic pain
- Migraines
- Insomnia
- Attention

[Neurofeedback](#) is a form of biofeedback that measures brain activity in real time [\[R\]](#).

How it helps

A meta-analysis of 11 studies concluded that theta neurofeedback training improves working memory and episodic memory [\[R\]](#).

Biofeedback may help gain better control over the brain waves linked with memory function.

7

Mind-Body Exercise

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Incorporate mind-body exercises such as yoga, tai chi, or meditation into your daily routine. Allocate at least 30-60 minutes per day to these activities, aiming for consistency over intensity. Choose a quiet, comfortable space and make it a regular part of your day, ideally at the same time each day to establish a routine.

TYPICAL STARTING DOSE

1 hour

Description

Mind-Body exercises like yoga and Tai Chi combine physical movement with mindfulness, offering benefits such as improved flexibility, balance, and mental focus. These practices promote holistic well-being by enhancing both physical and mental health.

How it helps

The regular practice of mind-body exercises (for at least 13 weeks) may improve memory and learning. Moderate-intensity practice may offer the greatest benefits [R, R, R, R, R].

8

N-Back Training

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

To implement n-back training, practice this cognitive exercise for 20 minutes daily over a period of at least 4 weeks. Use a computer program or mobile app designed specifically for n-back tasks, choosing a difficulty level that challenges you without causing frustration.

TYPICAL STARTING DOSE

20 minutes

Description

N-back training is a cognitive training exercise that involves memory and attention tasks, which may help enhance working memory, cognitive skills, and mental sharpness when practiced regularly.

How it helps

Two meta-analyses concluded that N-back training is effective in enhancing working memory, fluid intelligence, and cognitive control. This form of training has shown positive results in both healthy individuals and those with traumatic brain injury, as evidenced in a trial with 35 participants. In a study of 60 high worriers, N-back training over 10 sessions proved more beneficial than non-adaptive 1-back training in improving working memory. Additionally, two trials with 122 healthy participants found that N-back training enhances short-term memory. Moreover, a study with 60 participants found that 12 sessions of N-back training improved verbal fluency and general cognition in younger participants, and both long- and short-term memory and general cognition in older individuals. However, an 8-week N-back training program failed to show improvements in working memory or cognition in a trial with 55 middle-aged participants [R, R, R, R, R, R, R].

9



Green Tea

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Consume 400 mg of green tea extract daily. This can be taken in the form of capsules or tablets available that specify the amount of green tea extract. Ensure the supplement is taken according to the product's specific instructions, usually once a day with water.

TYPICAL STARTING DOSE

400 mg

Description

Tea is a beverage made by steeping the leaves of the *Camellia sinensis* plant in hot water. It comes in various types, including black, green, white, and herbal teas, and is known for its diverse flavors and potential health benefits due to antioxidants and other bioactive compounds.

[Green](#) and black tea are made from the same plant (*Camellia sinensis*). This plant is processed in different ways to make each type of tea [\[R\]](#), [\[R\]](#).

Tea contains antioxidants called **flavonoids**, which may help prevent [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Heart disease
- Cancer
- Diabetes

How it helps

Green tea, including decaffeinated tea, may improve memory and attention, which may be attributed to the combined influence of caffeine and l-theanine found in green tea. These two substances together may have a greater impact on cognitive function than when administered separately [\[R\]](#), [\[R\]](#).

Please note: polyphenols from green tea may bind to iron and form insoluble complexes, which reduces iron absorption in the gut. If you have anemia, consult your healthcare provider before using green tea [\[R\]](#).

10



Social Activity

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Participate in group activities or gatherings with friends, family, or community members at least twice a week. This could include joining clubs, attending local events, or scheduling regular outings with friends. Aim for these social engagements to last at least an hour each time to foster meaningful connections and conversations.

TYPICAL STARTING DOSE

1 hour

Description

Engaging in social activities, such as spending time with friends and family or participating in group events, can have numerous mental and emotional health benefits. It helps reduce feelings of loneliness, enhances mood, and promotes a sense of belonging and well-being.

Social activities involve physical and mental activities with others that you enjoy and find meaningful. There are plenty of ways to stay socially active and maintain social well-being as you age.

Research has shown that a socially active lifestyle [\[R\]](#):

- Makes you less likely to develop certain chronic conditions.
- May promote a longer lifespan.
- Can improve mood and mental health.
- Can improve memory and other aspects of cognition.

How it helps

Social activity is linked to improved cognitive functions across various domains including episodic memory, reasoning, and vocabulary. This relationship is mediated by cognitive activity, meaning that social engagement likely promotes participation in cognitively stimulating activities which in turn enhances cognitive performance [\[R\]](#).

Regular participation in social activities is associated with better global cognition and executive functioning. This suggests that social engagement can act as a protective factor against cognitive decline, supporting the notion that social interactions provide cognitive stimulation necessary for maintaining mental agility [\[R\]](#).

11



Cognitive Training

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Engage in exercises that challenge your brain for at least 15 minutes per day, five days a week. This can include puzzles, memory games, learning a new language, or playing a musical instrument.

TYPICAL STARTING DOSE

15 minutes

Description

Cognitive training involves structured exercises and activities designed to improve specific cognitive functions, such as memory, attention, and problem-solving skills. It can be beneficial for individuals looking to enhance cognitive abilities or address cognitive challenges associated with conditions like Alzheimer's disease or attention deficit hyperactivity disorder (ADHD).

Cognitive training programs guide you through challenging tasks. They aim to support some cognitive functions, including [\[R\]](#):

- Memory
- Attention
- Problem-solving skills

Some scientists like to think of the brain as a muscle. They say people should “use it or lose it.” In line with this, cognitive training can be considered “brain exercise.” It is often provided through computer programs [\[R\]](#), [\[R\]](#).

How it helps

Training working memory may improve this cognitive function in both adults and children [\[R\]](#), [\[R\]](#).

Cognitive training programs may modestly improve memory in older people [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

They may help by increasing [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Connections between brain cells
- Blood flow in the brain

However, there is disagreement about the effectiveness of cognitive training. Experts are also not sure if it provides real-life improvements [\[R\]](#), [\[R\]](#), [\[R\]](#).

 PERSONALIZED TO YOUR GENES

Individuals with your [DRD2](#) gene variant may see bigger memory improvements from cognitive training [\[R\]](#). This variant also affects the [ANKK1](#) and [TTC12](#) genes.
Cognitive training may improve memory more in people with your [COMT](#) gene variant [\[R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
ANKK1	rs1800497	GA	
COMT	rs4818	CG	

12



Leafy Green Vegetables

IMPACT

3 / 5

EVIDENCE

2 / 5

How to implement

Incorporate at least one serving of leafy green vegetables, such as spinach, kale, or Swiss chard, into your diet daily. This can be done by adding them to salads, smoothies, or as a side dish to your meals.

Description

Leafy green vegetables like spinach and kale are packed with vitamins, minerals, and antioxidants. Incorporating them into your diet can promote overall health by providing essential nutrients, supporting digestion, and reducing the risk of chronic diseases like heart disease and certain cancers.

Leafy green vegetables, also called leafy greens, or greens, are edible plant leaves, which can include stalks and shoots as well. Common examples include: lettuce, spinach, kale, chard, endive, and fennel.

Leafy greens contain a host of vitamins and minerals, as well as fiber. Most of them are a particularly good source of vitamin K.

How it helps

Eating about one serving per day of green leafy vegetables is linked with a slower rate of cognitive decline, comparable to being 11 years younger in age. This effect is attributed to the high levels of nutrients such as vitamin K, lutein, folate, and kaempferol found in these vegetables [\[R\]](#).

Higher intake of green leafy vegetables may also influence cognitive function, particularly in memory and mental processing speed. The benefits may stem from the antioxidants and bioactive compounds in these vegetables that help reduce inflammation and promote healthy brain function [\[R\]](#).

13



Tai Chi

IMPACT

2 / 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 help improve memory and cognitive function in adults with cognitive decline, especially when combined with cognitive training [\[R\]](#).

14



Bacognize (Bacopa monnieri)

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Take bacopa as a supplement in a dose of 300-450 mg per day, ideally with food to enhance absorption. It should be taken daily for at least 4-6 weeks to begin noticing benefits in cognitive function and stress reduction.

TYPICAL STARTING DOSE
300 mg

Description

Bacopa, also known as Brahmi, is an herb traditionally used in Ayurvedic medicine to support cognitive function and memory. It is believed to have neuroprotective properties and is used in herbal supplements for mental well-being.

[Bacopa](#) (*Bacopa monnieri*) grows as a weed in the rice fields of East Asia and the US [\[R\]](#).

Bacopa is used in Ayurveda (Indian traditional medicine) to support cognition [\[R\]](#).

Note that bacopa is fat-soluble. This means that **taking it with a fatty meal should help you absorb it better** [\[R\]](#).

How it helps

Bacopa extract (300-600 mg/day for 12 weeks) may improve several areas of memory. However, the evidence is limited and often of low quality [\[R, R, R, R\]](#).

Bacopa may help by [\[R\]](#):

- Increasing blood flow in the brain
- Reducing oxidative stress

15



Avoid Pesticide Exposure

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Purchase organic produce when possible, wash fruits and vegetables thoroughly under running water, and peel them if not organic. Use natural pest control methods instead of chemical pesticides at home and garden. Limit the use of non-organic lawn and garden chemicals.

Description

Pesticides include all chemicals used to kill weeds, insects, fungi, and microbes. Reducing pesticide exposure involves choosing organic or pesticide-free foods and using natural pest control methods to limit contact with potentially harmful chemical residues. It supports overall health by reducing the risk of pesticide-related health issues.

Pesticides include all chemicals used to kill weeds, insects, fungi, and microbes. They are widely used in agriculture to improve crop yields. Common groups of pesticides include:

- Organophosphates (glyphosate, parathion, malathion, chlorpyrifos, diazinon, phosmet)
- Neonicotinoids (imidacloprid, acetamiprid, thiacloprid, clothianidin)
- Pyrethroids (permethrin, alpha-cypermethrin)

Chronic exposure to pesticides has been linked to:

- Fertility problems [\[R\]](#)
- Cognitive problems [\[R\]](#)
- Alzheimer’s and Parkinson’s disease [\[R\]](#), [\[R\]](#)
- Thyroid problems [\[R\]](#)
- Obesity [\[R\]](#)
- DNA damage and cancer [\[R\]](#), [\[R\]](#), [\[R\]](#)

How it helps

Reducing pesticide exposure can improve memory performance as pesticides contain toxins that can damage brain cells involved in memory and learning. Avoiding these can keep your brain healthier and boost your memory performance.

This review of 23 prospective studies found that exposure to p,p'-DDE was associated with a slightly increased risk of type 2 diabetes and hypertension, particularly at low levels. No association was observed for gestational diabetes or p,p'-DDT and T2D [\[R\]](#).

A meta-analysis of 17 studies found significant declines in attention, visuomotor integration, verbal abstraction, and perception in exposed participants. Memory, sustained attention, and motor speed showed mixed results [\[R\]](#).

16



Mediterranean Diet

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

Incorporate a variety of primarily plant-based foods, such as fruits, vegetables, whole grains, nuts, and legumes, into every meal. Choose healthy fats, like olive oil, over saturated fats and consume fish and poultry at least twice a week. Limit red meat to a few times a month and include a moderate amount of dairy products. Opt for water and red wine in moderation as your beverages.

Description

The [Mediterranean diet](#) is based on the traditional cuisine from the Mediterranean regions. It moderates the intake of red meat and dairy, while being rich in fruits and vegetables, whole grains, and healthy fats ([olive oil](#)).

The [Mediterranean diet](#) focuses on traditional cuisine from the Mediterranean regions. It’s rich in [\[R\]](#):

- [Olive oil](#)
- Fruits and vegetables
- Whole grains
- Nuts and seeds
- Fish

This type of diet may **reduce inflammation and protect the brain and heart** [\[R, R, R, R\]](#).

Limited intake of animal products, saturated fat, and refined sugar likely contribute to the health benefits of the Mediterranean diet [\[R\]](#).

How it helps

High adherence to a Mediterranean diet is associated with better memory and other cognitive aspects. This diet may also slow down cognitive decline [\[R, R, R, R\]](#).

Adopting a Mediterranean diet for several years may help improve memory and cognition, especially if the diet is rich in [extra virgin olive oil](#) [\[R, R, R\]](#).

The Mediterranean diet is rich in antioxidants and omega-3 fatty acids. They help protect brain cells and blood vessels against oxidative stress and inflammation [\[R, R, R\]](#).

17



Maintain Optimal Iron Levels

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Check your iron levels. If they are below optimal, take a 10 mg iron supplement daily, preferably with a meal to enhance absorption and reduce stomach upset.

TYPICAL STARTING DOSE

10 mg

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 [\[R\]](#):

- Women
- Children
- Vegetarians
- Routine blood donors

Iron supplements are available for people who can't meet their needs through a balanced diet, but they should not be taken without consulting a doctor.

How it helps

In those who are deficient, supplementing with iron or eating iron-enriched foods may improve memory [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Iron may help by:

- Supporting [dopamine](#) activity [\[R\]](#), [\[R\]](#), [\[R\]](#)
- Supporting brain function [\[R\]](#)

Please note: *A high dose of iron can be toxic. If you are not deficient, it is best to get iron from food. Talk to your doctor before taking iron supplements* [\[R\]](#).

18



Choline Supplements

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Take choline supplements at a dosage of 425 mg to 550 mg daily, depending on age and gender, with a glass of water. It is best to consume choline supplements with a meal for optimal absorption. Continue this regimen daily as part of your dietary supplement routine.

TYPICAL STARTING DOSE

425 mg

Description

Choline is an essential nutrient that plays a crucial role in various bodily functions, including brain health, liver function, and metabolism. Incorporating choline-rich foods into your diet supports cognitive function and overall nutritional well-being.

[Choline](#) is a nutrient required for optimal health. Although the body makes some, we need to get choline from our diets to avoid deficiency [\[R\]](#).

It plays key roles in supporting [\[R\]](#), [\[R\]](#):

- DNA production
- Cell structure and function
- Brain, nerve, and heart health

Eggs and beef liver are the best sources of choline. If you can’t meet your daily requirements with food, consider taking a choline supplement such as [\[R\]](#):

- [Phosphatidylcholine](#) (PC)
- [Citicoline](#) (CDP-choline)
- [Alpha-GPC](#)
- [Lecithin](#)

They all supply choline, but each one has unique health perks you may prefer. Check out our posts on different choline-containing supplements to find out which one suits you best.

How it helps

People with the highest choline intake may have better performance in memory areas such as verbal memory, visual memory, and verbal learning [\[R\]](#), [\[R\]](#), [\[R\]](#).

A single dose of choline (500-2,000 mg) may improve working memory, verbal learning, verbal memory and other cognitive aspects. However, the evidence is weak and mixed [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Please note: Many supplement manufacturers source choline from soybeans and eggs. If you are allergic to these foods, read the labels carefully to avoid having a reaction. Medical bodies recommend against taking more than **3.5 g** of choline per day. High intake can cause complications such as low blood pressure and diarrhea [\[R\]](#).

19



Cocoa

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

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

Description

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

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

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

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

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

How it helps

People who regularly consume cocoa may have better visual-spatial and working memory [\[R\]](#).

In line with this, consumption of dark chocolate (providing 520-720 mg flavanols) may improve memory. However, the evidence is mixed [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

In older people, cocoa may help prevent cognitive decline and preserve memory [\[R\]](#), [\[R\]](#), [\[R\]](#).

20



Pyrroloquinoline Quinone (PQQ)

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take 20 to 40 mg of Pyrroloquinoline Quinone (PQQ) daily as an oral supplement, ideally with meals to enhance absorption. This dosage can be maintained indefinitely as part of your daily supplement routine.

TYPICAL STARTING DOSE

20 mg

Description

PQQ is a micronutrient found in foods like spinach, green tea, and kiwifruit. It acts as a cofactor for enzymes involved in energy metabolism and may support mitochondrial health, which is essential for overall cellular function and vitality.

Pyrroloquinoline quinone (PQQ), also known as methoxatin, is a compound that helps enzymes work better. PQQ is also involved in the production of new mitochondrias. By doing so, PQQ helps improve [\[R\]](#), [\[R\]](#):

- Energy levels
- Antioxidant protection
- Growth
- Reproduction

How it helps

In 2 placebo-controlled trials of 120 participants, supplementation with PQQ (20-21.5 mg/day) for 12 weeks improved composite memory and verbal memory among other cognitive aspects. PQQ may improve cognition by increasing activity in the right PFC, as seen in a placebo-controlled trial of 20 healthy subjects aged 50-70 [\[R\]](#), [\[R\]](#), [\[R\]](#).

PQQ is thought to stimulate the growth and development of mitochondria in brain cells, leading to improved cognition. In addition, PQQ works as an antioxidant that could protect the brain from harmful oxidative stress.

21



Yoga

IMPACT

2 / 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 (for 4-12 weeks) may improve and preserve memory, executive function, attention, and processing speed. Moreover, yoga (45 min, 2x/day) may enhance the benefits of memory training [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

A single session of specific yoga meditation, relaxation, and breathing techniques may already improve memory (both spatial and verbal), learning, and other cognitive aspects in healthy people [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

However, not all studies found these benefits in older people. Moreover, the quality of the studies and their number demand more research to confirm these benefits [\[R\]](#).

22



Eggs

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Incorporate eggs into your diet 3-4 times a week, preferably for breakfast or as part of a balanced meal. They can be boiled, scrambled, or made into omelets, ensuring they are cooked thoroughly.

Description

Eggs are a nutrient-dense food rich in protein, vitamins, and minerals. They support various aspects of health, including muscle development, brain function, and eye health.

Eggs are great nutrition sources, with protein, healthy fats, arachidonic acid, and numerous vitamins and minerals.

How it helps

A study found that consuming eggs at a moderate level (about 1 egg/week) was associated with a slower rate of memory decline in older adults compared to consuming fewer eggs [\[R\]](#).

Another study observed that higher egg intake among older adults was associated with better memory, especially in men [\[R\]](#).

23



Creatine

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

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

TYPICAL STARTING DOSE

2 g

Description

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

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

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

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

- Red meat
- Seafood
- Supplements

How it helps

Creatine aids memory performance by increasing the energy available for the brain to use, thus improving cognition and memory function. Regular intake helps maintain optimal levels of brain energy and supports learning capabilities and mental focus.

A systematic review of 10 RCTs found that creatine supplementation improved memory measures compared to placebo, with a standard mean difference (SMD) of 0.29. Subgroup analysis showed greater memory improvement in older adults (66-76 years) compared to younger individuals (11-31 years) [\[R\]](#).

24



Cognitive Activity

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Engage in mentally stimulating activities, such as puzzles, reading, or learning a new skill, for at least 15 minutes daily. Consistency is key, so incorporate these activities into your daily routine for ongoing cognitive health benefits.

TYPICAL STARTING DOSE

15 minutes

Description

Engaging in cognitive activities, such as puzzles, reading, or learning new skills, can help maintain mental sharpness and potentially reduce the risk of age-related cognitive decline. Staying mentally active supports cognitive health and overall quality of life.

Some scientists like to think of the brain as a muscle. They say people should “use it or lose it” [\[R\]](#).

In line with this, keeping the brain stimulated may help support cognition [\[R\]](#).

There are many ways to keep your brain active. These include [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Reading a book
- Solving a word or number puzzle (e.g., crossword, Sudoku)
- Completing a jigsaw puzzle
- Learning a new language

How it helps

A study highlighted that participation in activities such as reading, playing games, or engaging in social activities (for 6 months) may help maintain or improve memory and other cognitive functions in the elderly [\[R\]](#).

Research has shown that specific types of cognitive tasks can have varying effects on different aspects of memory and brain activity. For instance, tasks that require more complex cognitive functions may lead to improvements in working memory and other higher-order cognitive processes [\[R\]](#).

Continuous engagement in cognitive activities is associated with increased brain plasticity. This adaptability can enhance memory and learning capabilities, indicating that cognitive activities not only prevent decline but may also improve cognitive reserves. The stimulation from varied cognitive tasks contributes to maintaining and enhancing mental capabilities, particularly in older adults [\[R\]](#).

25



Binaural Beats

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Listen to binaural beats through headphones for 30 minutes to 2 hours daily. Choose frequencies that match your goal, such as relaxation or focus, and ensure a quiet, comfortable environment for the best experience.

TYPICAL STARTING DOSE

30 minutes

Description

Binaural beats are audio recordings that use specific sound frequencies to create a perception of a beating or pulsing sound in the brain. Some people use binaural beats for relaxation, meditation, and potential cognitive benefits.

[Binaural beats](#) are an **auditory illusion** perceived by the brain when two slightly different frequencies of sound are played into each ear (*bi* – two, *aural*- ear). When wearing earphones that are playing slightly different notes in each ear, our brain perceives the volume to pulse (oscillate) at a fixed rate. This is called a ‘beat.’

People use binaural beats to improve cognition, mood, and anxiety [\[R, R, R, R, R\]](#).

How it helps

In one non-placebo-controlled trial with 25 healthy adults, a 20-minute combination of mechanical massage and binaural beats enhanced verbal short-term and long-term memory, and non-verbal long-term memory. Another trial involving 58 healthy volunteers found that stimulation with 40 Hz binaural beats improved long-term memory [\[R, R\]](#).

Binaural beats involve listening to different sound frequencies in each ear, which can improve focus and promote relaxation. This mental state can enhance memory performance by encouraging the brain to forge and reinforce new connections.

26



Blueberries

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Incorporate a half to one cup of fresh or frozen blueberries into your daily diet. You can add them to your breakfast cereal, smoothies, or enjoy them as a snack on their own.

Description

Blueberries are a nutritious fruit packed with antioxidants, vitamins, and fiber. They are known for their potential to support brain health, reduce the risk of chronic diseases, and promote overall well-being.

[Blueberries](#) are enjoyed all around the world for their sweet taste and nutritional benefits. They may support [\[R\]](#):

- Heart health
- Cognitive function
- Normal blood sugar levels

How it helps

Drinking **blueberry juice (444-621 mL/day), concentrate (30 mL/day), or powder (500-1000 mg/day)** may improve memory in elderly people [\[R, R, R, R\]](#).

Blueberries may also improve memory in children [\[R, R, R\]](#).

Blueberry juice and extract may improve working memory and other cognitive aspects when combined with other fruits rich in polyphenols [\[R, R, R\]](#).

Blueberries are rich in antioxidants, which may help protect the brain from oxidative stress [\[R\]](#).

27



Phosphatidylserine

IMPACT

2 / 5

EVIDENCE

2 / 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 supplementation (300 mg/day) may improve memory in people with Alzheimer's disease. It may increase vocabulary, picture-matching scores, and learning memory ability, and reduce free radical levels in the brain [\[R\]](#).

Phosphatidylserine has also shown promise in treating (AAMI). A study found that people with age-associated memory impairment treated with phosphatidylserine showed improved performance on learning and memory tasks of daily life, especially in those who had lower performance levels before [\[R\]](#).

Phosphatidylserine containing omega-3 fatty acids may improve memory in elderly people with memory complaints, enhancing their quality of life and daily functioning [\[R\]](#).

28



Mindfulness Meditation

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Practice mindfulness meditation for 10-20 minutes daily. Find a quiet, comfortable place to sit or lie down, then focus on your breath, observing thoughts and sensations without judgment. Consistency is key, so try to incorporate it into your daily routine, perhaps in the morning or before bed.

TYPICAL STARTING DOSE

30 minutes

Description

Mindfulness meditation involves focused attention on the breath or a specific point of focus to cultivate mindfulness and reduce stress. Regular meditation practice is associated with improved mental clarity, emotional regulation, and overall well-being.

How it helps

Mindfulness (for 1 week) may improve working memory capacity and reduce the impact of stress on memory functioning. These benefits are particularly evident in high-stress environments where mindfulness meditation helps maintain memory performance levels [\[R\]](#).

Research has also shown that brief mindfulness meditation interventions can lead to improvements in visual short-term memory [\[R\]](#).

Mindfulness may be better at improving recognition memory but less than on other types of memory, such as autobiographical memory specificity, which involves the recall of specific personal events [\[R\]](#).

However, mindfulness meditation may also increase susceptibility to false memories. One study found that participants who engaged in mindfulness meditation were more likely to report critical non-studied items as being familiar, suggesting that while mindfulness might enhance certain aspects of memory, it may also make memories less reliable in specific contexts [\[R\]](#).

29



Meditation

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Set aside 10-20 minutes each day in a quiet space without distractions to practice meditation. Focus on your breath or perform guided meditation using an app or audio track.

TYPICAL STARTING DOSE

30 minutes

Description

Meditation is a mindfulness practice that can reduce stress, improve mental clarity, and promote relaxation. Regular meditation is associated with numerous mental and emotional health benefits, including reduced anxiety and enhanced emotional well-being.

Meditation is a relaxation technique that trains your mind to focus and redirect your thoughts. Some of the main types of meditation are [\[R\]](#):

- Mindfulness
- Focused
- Transcendental
- Mantra
- Moving

People use meditation to improve [\[R\]](#), [\[R\]](#):

- Stress and anxiety
- Mood
- Sleep disturbances
- Pain

How it helps

Different mindfulness meditation interventions improved working and autobiographical memory, both long- and short-term, in healthy people [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Mindfulness meditation may help by increasing gray matter density in several brain areas believed to play key roles in memory and attention, as well as connectivity between brain regions associated with executive function [\[R\]](#), [\[R\]](#).

30



Pycnogenol

IMPACT

2 / 5

EVIDENCE

2 / 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 (100-150 mg/day for 8-52 weeks) may boost memory. However, one study found no benefits [\[R, R, R, R, R, R\]](#).

Pycnogenol may help by reducing oxidative stress [\[R, R, R, R\]](#).

31



Soy Isoflavones

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take a soy isoflavone supplement containing 40 to 80 milligrams daily, ideally with food to improve absorption. This dosage can be continued on a daily basis for several months, but it's recommended to reevaluate its effectiveness and any potential side effects with a healthcare provider periodically.

TYPICAL STARTING DOSE

40 mg

Description

Soy isoflavones are natural compounds found in soybeans and soy products. They are phytoestrogens, which means they can mimic the effects of estrogen in the body and are associated with potential health benefits like menopausal symptom relief and improved heart health.

Soy is a common food in many cuisines around the world, especially Asian cuisines [\[R\]](#).

It's a great source of [\[R\]](#), [\[R\]](#):

- Plant-based protein
- Fiber
- Omega-3 fats
- Antioxidants (isoflavones)

Soy-based foods include [\[R\]](#):

- Tofu
- Tempeh
- Edamame
- Miso
- Natto

Soy protein and soy isoflavones are also available as supplements.

How it helps

Consuming soy isoflavones (100 mg/day) from a soy-rich diet or supplements for up to 24 weeks may improve memory and overall cognitive performance [\[R\]](#), [\[R\]](#), [\[R\]](#).

Soy isoflavones (60-110 mg/day) may also improve memory (especially verbal, visual, and short-term memory) and cognitive function in postmenopausal women. However, the evidence is mixed [\[R\]](#).

32



Dietary Iron

IMPACT2 / 5

EVIDENCE2 / 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

Eating iron-enriched foods (for 8-24 weeks) improved memory function, verbal learning, memory retrieval, spatial working memory, and other cognitive aspects in 6 studies of 466 people [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Please note: *Increased iron intake from meat is linked to higher odds of diabetes and heart disease. Try to find a balance between plant and animal iron sources* [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

33



Whole Grains

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Incorporate at least three servings of whole grains into your daily diet. This can include consuming foods such as whole grain bread, brown rice, whole grain pasta, and oats. Aim to replace refined grains with whole grains at each meal for optimal benefits.

Description

Whole grains encompass a variety of grains like wheat, oats, and quinoa, where the entire grain kernel is intact. They are rich in fiber, vitamins, minerals, and antioxidants, supporting heart health and reducing the risk of chronic diseases.

Unlike refined grains, whole grains contain nutritious parts of the grain like bran and germ.

Whole grains provide many crucial nutrients, including:

- Fiber
- B-vitamins
- Iron
- Magnesium
- Phosphorus

Due to their high fiber content, whole grains don’t tend to spike blood sugar like refined grains do.

How it helps

Consuming whole grains (especially above 3 servings/day) may be associated with a slower rate of cognitive decline. Higher consumption of whole grains has been linked to better scores in global cognition, perceptual speed, and episodic memory, especially among African American people [\[R\]](#).

34



Take Naps

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take short naps of about 20-30 minutes in the early afternoon, preferably between 1 pm and 3 pm, to avoid interfering with nighttime sleep.

TYPICAL STARTING DOSE

20 minutes

Description

Taking short naps, typically lasting 20-30 minutes, can improve alertness, mood, and cognitive performance. Napping can be a beneficial practice for combating fatigue and enhancing daytime productivity.

How it helps

Short daytime naps may improve cognitive performance, including declarative and procedural memory. However, napping may not help in older people or during night shifts [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

35



Antioxidant Supplements

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

Take an antioxidant supplement daily with a meal to enhance absorption. The specific dose may vary depending on the type of antioxidant (e.g., vitamin C, vitamin E, selenium), but a common multivitamin or antioxidant blend can be used as directed on the product label. Consult with a healthcare provider for personalized advice and dosage.

Description

Antioxidant supplements are dietary supplements that provide concentrated doses of antioxidants, such as vitamins C and E or coenzyme Q10, to help combat oxidative stress and reduce the risk of chronic diseases.

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

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

- High blood sugar
- Type 2 diabetes
- Heart disease

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

Some common antioxidants include [vitamin C](#) and [vitamin E](#). You can get most antioxidants from fresh fruits and vegetables. **Antioxidants are also available as supplements** [\[R\]](#), [\[R\]](#).

How it helps

A study on French adults who received daily supplementation with antioxidant vitamins and minerals at nutritional doses (for 7.5 years) found improved episodic memory. The beneficial effects on verbal memory were especially noted in nonsmokers or those with low vitamin C levels [\[R\]](#).

36



Ayurvedic Zinc

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

Take an Ayurvedic zinc supplement, specifically in the form of zinc picolinate, at a dose of 15-30 mg daily. This should be consumed with a meal to enhance absorption and reduce stomach upset. Recommend continuation for a period of 3 months before evaluating its benefits on your health.

TYPICAL STARTING DOSE

15 mg

Description

Ayurvedic zinc formulations are believed to support immune health and overall well-being through traditional Ayurvedic practices. They are used to balance bodily functions and enhance vitality.

How it helps

Ayurvedic Zinc is known to support cognitive functions by enhancing memory and learning capabilities. It does this by facilitating communication between neurons and influencing the brain's ability to form and recall memories.

Efficacy of snacks and the tablet was assessed in 180 schoolgirls from Pune City, India, who were randomly allocated to any of the 3 groups: (1) ayurvedic zinc tablet-J, (2) zinc-rich snacks-D, or (3) Control-C. Supplementation was given on every school day (6 days/wk) for 10 weeks. Supplementation of ayurvedic zinc and zinc-rich foods are effective in improving cognitive performance and the recognition threshold for salt of adolescent girls [\[R\]](#).

37



Zinc

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

Take a 15 mg zinc supplement daily, ideally with a meal to enhance absorption.

TYPICAL STARTING DOSE

10 mg

Description

Zinc is an essential mineral found in various foods, including meat, dairy, and nuts. It is crucial for immune function, wound healing, DNA synthesis, and maintaining healthy skin and nails. Zinc supplements are sometimes used to support immune health and manage zinc deficiencies.

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

- Defend against disease
- Protect DNA from damage
- Heal wounds
- Control blood sugar

Some of the best sources of zinc include **shellfish, pork, beef, and beans**. It is also available as a supplement [\[R\]](#).

Adults should get **8-11 mg of zinc** per day [\[R\]](#).

How it helps

Zinc plays a crucial role in maintaining healthy brain function, assisting learning and memory performance through its involvement in cell communication, growth, and differentiation. A balanced diet supplemented with zinc can thus enhance cognitive abilities and prevent memory impairment.

Efficacy of snacks and the tablet was assessed in 180 schoolgirls from Pune City, India, who were randomly allocated to any of the 3 groups: (1) ayurvedic zinc tablet-J, (2) zinc-rich snacks-D, or (3) Control-C. Supplementation was given on every school day (6 days/wk) for 10 weeks. Supplementation of ayurvedic zinc and zinc-rich foods are effective in improving cognitive performance and the recognition threshold for salt of adolescent girls [\[R\]](#).

In one study, for two out of eight dependent variables, there were significant interactions indicating a beneficial effect (at 3 months only) of both 15 and 30 mg/d of zinc on one measure of spatial working memory and a detrimental effect of 15 mg/d on one measure of attention [\[R\]](#).

38



Avoid Lead Exposure

IMPACT

1 / 5

EVIDENCE

3 / 5

How to implement

Prevent lead exposure by using cold water for drinking and cooking, regularly cleaning dust from windowsills and floors, and ensuring that your home's paint is not chipping if it was built before 1978. For occupations involving potential lead exposure, use protective gear and follow safety protocols. Test your home for lead if it's old or you're concerned about contamination.

Description

Lead is a heavy metal. It is naturally found in the environment in small amounts [\[R\]](#), [\[R\]](#).

Exposure to lead can cause it to build up in the body. A buildup of lead can contribute to oxidative stress and cell damage. This is called **lead poisoning** [\[R\]](#), [\[R\]](#).

Lead is no longer used in the manufacturing of some products like gasoline and paint. However, it can still be found in some pipes, batteries, and the wall paint of older homes [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

An analysis of 12 studies showed that occupational lead exposure is associated with neurological damage, and the main parameters evaluated for possible neurological damage were related to memory aspects, reaction time, intelligence, attention disorders, and mood changes [\[R\]](#).

A review of 2 meta-analyses on occupational lead exposure indicates impairments measured with two tests covering Logical Memory and Visual Reproduction, as well as Simple Reaction, Attention Test d2, Block Design, and Picture Completion [\[R\]](#).

39

Mindfulness

IMPACT

1 / 5

EVIDENCE

3 / 5

How to implement

Set aside 5-10 minutes each day to practice mindfulness meditation. Find a quiet place, assume a comfortable seated position, close your eyes, focus on your breathing, and observe your thoughts and sensations without judgment.

TYPICAL STARTING DOSE

30 minutes

Description

Mindfulness involves paying focused and non-judgmental attention to the present moment. It can reduce stress, improve emotional regulation, and enhance overall mental clarity and well-being.

Mindfulness is the practice of being aware of the present moment. When practicing mindfulness, a person acknowledges their thoughts, feelings, and sensations without any judgment [R].

Mindfulness and other types of [meditation](#) may improve [R]:

- Weight and anxiety
- Low mood
- Sleep disturbances
- Pain
- High blood pressure

How it helps

Mindfulness involves focusing on present experiences and accepting them without judgment, which can enhance cognitive capacities including memory performance. Regular practice of mindfulness exercises strengthens neural networking involved in memory processing and recall, resulting in improved memory capabilities.

In a meta-analysis of 45 studies, the cognitive effects of MBPs (Mindfulness-Based Programs) favored MBPs over comparators, with a small effect size of 0.15. When considering specific cognitive domains, MBPs showed significant benefits for executive function (effect size: 0.15) and working memory (effect size: 0.23). Notably, these effects were more pronounced in non-clinical samples and among adults aged over 60 [R].

A total of 34 studies were included. The outcomes were categorized into four cognitive domains: attentional functioning, memory, executive functioning, and higher-order function. A small effect was found across all cognitive domains. Separated analyses for each cognitive domain revealed an effect only in higher-order cognitive functions [R].

Mindfulness interventions positively impacted cognition (weighted Hedges' g = 0.36) by enhancing attention (g = 0.22), long-term memory (g = 0.32), and visuospatial processing (g = 0.22). These effects were consistent across cognitive status, with no publication bias. Healthy older adults had larger effect sizes than those with Mild Cognitive Impairment (MCI) [R].

The MBI had a null global effect. The attention and memory results showed a null effect size and a small effect size was found for executive function. The methodological quality of the studies, however, was poor, so the results need to be interpreted with caution [R].

40



Neurofeedback

IMPACT1 / 5

EVIDENCE3 / 5

How to implement

Attend neurofeedback sessions with a trained therapist, usually once or twice a week, for a minimum of 20 sessions. Each session typically lasts 30 to 60 minutes where sensors are placed on your scalp to monitor brainwave activity, and feedback is given in real-time to help you learn to control or alter your brain functions.

TYPICAL STARTING DOSE

1 hour

Description

Neurofeedback is a therapeutic technique that helps individuals regulate brain activity, potentially improving focus, reducing anxiety, and enhancing cognitive function by providing real-time feedback on brainwave patterns.

How it helps

Neurofeedback training helps enhance memory performance by training your brain to function more efficiently. This therapy uses real-time displays of brain activity, often in the form of games, helping in optimizing brain function which improves memory performance.

A systematic review and meta-analysis of 11 selected articles found that neurofeedback training targeting theta activity enhances working memory (Hedges' g = 0.56) and episodic memory (Hedges' g = 0.62) in healthy individuals. Theta NFT can be a valuable non-pharmacological tool to boost memory functions [R].

In a study involving 65 women with aMCI and 54 healthy elderly women, neurofeedback training (NFT) improved sustained attention and spatial working memory in comparison to exergame-based training and no active treatment, but had no significant effect on pattern recognition memory and short-term visual memory. Another study with individuals aged 66 found that those with higher levels of sensory processing sensitivity (SPS) in the treatment group showed superior improvements in memory and visual memory. In a separate study, app-based ABC games led to significant improvements in memory, verbal memory, and overall cognitive function in a group of 86 healthy adults [R, R, R].

41



Ginkgo

IMPACT

1 / 5

EVIDENCE

3 / 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

Ginkgo extract may improve memory and executive function (120-600 mg/day acutely or for 2-14 weeks) [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

However, not all studies found these benefits [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

42



Rosemary

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Take rosemary in supplement form, such as capsules, with a typical dose ranging from 400 to 600 milligrams once daily. It is best taken with food to improve absorption and reduce the risk of stomach irritation. Consult with a healthcare professional before starting, especially if pregnant, nursing, or on medication.

TYPICAL STARTING DOSE

400 mg

Description

Rosemary is a fragrant herb native to the Mediterranean region. It's a source of nutrients such as vitamin C, vitamin A, and dietary fiber. It contains antioxidants and compounds that may support digestion, improve memory, and have anti-inflammatory properties.

How it helps

Rosemary may help improve memory and memory speed. Studied forms include [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Powder (750 mg)
- Extract (500 mg, 2x/day)
- Rosemary water (250 mL)

However, larger doses (>1500 mg) of rosemary powder may reduce memory speed and quality of memory, according to one study in elderly people [\[R\]](#).

43



D-Serine

IMPACT

1 / 5

EVIDENCE

2 / 5

How to implement

Take d-serine as a dietary supplement in doses ranging from 30 to 120 milligrams per kilogram of body weight per day. It is typically consumed in capsule or powder form mixed with water or another beverage. Start with the lower end of the dosage range and adjust based on tolerance and effectiveness, not exceeding the recommended maximum unless directed by a healthcare provider.

Description

D-serine is an amino acid that plays a role in brain function and may be used in supplemental form to support cognitive health.

Serine is a non-essential amino acid that we generally get from our diet through protein sources. It is key to the production of proteins, enzymes and muscle tissue. Serine is needed for the proper metabolism of fats and fatty acids. It also helps in the production of antibodies [\[R\]](#).

Serine is used as a natural moisturizing agent in some cosmetics and skin care products, as well as for certain psychiatric and neurological disorders [\[R\]](#), [\[R\]](#).

How it helps

In a study of 35 healthy people, taking serine (2.1 g/day for 6 weeks) may improve visual retention, other cognitive aspects, anxiety, and depression [\[R\]](#).

A single dose of serine (30 mg/kg) improved spatial memory, learning, and problem-solving in a study of 57 healthy older adults [\[R\]](#).

Please note: *High doses of D-serine (120 mg/kg/day or about 8 g/day) may damage the kidneys. Make sure to consult your doctor before taking D-serine, especially if you have kidney disease [\[R\]](#).*

How to implement

TYPICAL STARTING DOSE

30 minutes

Description

Aromatherapy uses concentrated plant extracts known as **essential oils**. They can be inhaled using a diffuser (a device that releases small amounts of oil into the air) or applied to the skin using a roller [R].

- Reduce anxiety [[R](#)]
- Improve sleep quality [[R](#), [R](#)]
- Relieve pain [[R](#), [R](#)]

- Diluting them properly using a plant-based carrier oil (such as olive oil or almond oil)
- Using diffusers in a well-ventilated area for a maximum of 1 hour
- If using on the skin, testing a small area first and waiting a day before using more
- Keeping essential oils away from candles or other heat sources

How it helps

- Peppermint oil [\[R\]](#)
- English lavender oil [\[R\]](#)
- Sage oil [\[R\]](#)
- Rosemary oil [\[R\]](#)

45



Lemon Balm

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Take a 500 mg lemon balm supplement daily. This dosage can be consumed at once or divided into smaller doses throughout the day, according to personal preference or the guidance of a healthcare provider.

TYPICAL STARTING DOSE

500 mg

Description

Lemon balm is an herb known for its calming and soothing properties. It is often used in herbal teas and aromatherapy to reduce stress and anxiety, promote relaxation, and improve sleep quality.

[Lemon balm](#) (*Melissa officinalis*) is an herb used in gardening and traditional medicine. **It’s rich in antioxidants and relaxing components** [\[R\]](#), [\[R\]](#).

People use lemon balm as a tea or supplement to [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Relieve anxiety
- Improve sleep quality
- Reduce stress

How it helps

In studies on healthy people, supplementation with a single dose of lemon balm extract (300-1600 mg) improved the accuracy of [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Attention
- Memory performance
- Mathematical processing
- Calmness

However, the lowest doses reduced working memory and visual information processing in some of the studies.

How to implement

TYPICAL STARTING DOSE

500 mg

Description

Tyrosine is a **non-essential amino acid**. This means that our bodies can make it from other amino acids like [phenylalanine](#). We can also get tyrosine from **protein-rich foods**, such as [\[R, R\]](#):

- Red meat and poultry
- Dairy, especially cheese
- Legumes (e.g., soybeans and beans)
- Fish
- Nuts
- Eggs

Tyrosine can also be taken as a supplement. People often use it to maintain mental performance during demanding and stressful tasks [R, R, R].

How it helps

A systematic review of 15 trials investigated the effects of L-tyrosine loading – short bouts of higher doses – on cognition (especially working memory) and behavior. This dosing pattern **prevented catecholamine depletion and boosted mental function in stressful and demanding situations** [R].

In 8 small trials of 194 people, a single dose of L-tyrosine (0.5-2 g) showed **good results** in people exposed to:

- Cold temperatures [[R](#), [R](#), [R](#)]
- Multitasking and distractions [[R](#), [R](#)]
- Sleep deprivation [[R](#)]
- Harsh military training [[R](#)]
- Anorexia nervosa [[R](#)]

Conversely, L-tyrosine **may not improve cognitive performance under normal conditions**. In 34 older adults, L-tyrosine loading even produced the **opposite effects and *worsened* working memory** [R].

Please note: Long-term safety of L-tyrosine supplementation in daily doses above **150 mg/kg** is unclear. That is about **1 g/day** for a 70-kg person.

47



Avoid Phthalate Exposure

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

To avoid phthalate exposure, check product labels and choose phthalate-free options for personal care items, plastics (look for recycling codes 3 and 7 or the letters 'V' or 'PVC'), and household products. Additionally, reduce the use of plastic containers for food storage, especially those not marked as 'phthalate-free', and avoid microwaving food in plastic containers. Aim to make these changes consistently in your daily life for long-term health benefits.

Description

Avoiding phthalate exposure involves choosing phthalate-free products, such as personal care items and plastics, to minimize potential endocrine-disrupting effects and protect reproductive and hormonal health.

How it helps

835 individuals, NHANES: exposure to phthalates might be associated with bad performance in IRT and DRT in the U.S. elderly [\[R\]](#).

1791 elderly participants, NHANES: During the recent past week, 146 people (8.2%) had trouble remembering more than three times while 619 people (35.2%) had that for one to three times. These people had higher levels of urinary heavy metals, phthalates, pesticides and hydrocarbon concentrations [\[R\]](#).

48



Avoid Mercury Exposure

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Limit consumption of large fish such as shark, swordfish, king mackerel, and tilefish, which are known to have higher mercury levels. Opt for smaller fish like salmon, shrimp, pollock, and catfish, and limit seafood intake to 8-12 ounces (two to three servings) per week. Check and follow local advisories regarding the safety of fish caught by family and friends in your local lakes, rivers, and coastal areas.

Description

Avoiding exposure to mercury, a toxic heavy metal found in certain seafood and environmental sources, is essential to prevent adverse health effects, including neurological damage and developmental issues.

Mercury and other [heavy metals](#) are found in the soil, water, food, and some commonly-used household products. They adversely affect the environment and living organisms. According to some studies, mercury is considered **the most toxic heavy metal** in the environment [\[R\]](#), [\[R\]](#).

A major source of mercury exposure is seafood, especially large fish such as [\[R\]](#):

- Tuna
- Shark
- Swordfish

How it helps

Avoiding mercury exposure can help memory performance because mercury has toxic effects on our nervous system which includes the brain. High levels can lead to cognitive impairments, reducing memory function.

In all, 14 neuropsychological tests with 20 different tasks were analyzed. The results related to 686 exposed and 579 control subjects. Nine significant performance effects were shown for mean urinary concentrations between 18 and 34 mcg Hg/g creatinine. The effects sizes (D(W+)) referred to attention (D(W+)=-0.40 and -0.46), memory (D(W+)=-0.38 and -0.40), construction (D(W+)=-0.20) and motor performance (D(W+)=-0.24, -0.40, -0.44 and -0.47) [\[R\]](#).

An analysis of 18 studies involving 1,106 exposed and 1,105 control subjects showed a correlation of r=0.50 between effect sizes and exposure. Motor performance was notably more impaired than memory and attention in mercury-exposed workers [\[R\]](#).

According to the quantitative assessment, occupational mercury exposure may cause a great variety of signs and symptoms in the field of neuropsychological disorders, such as ataxia, tremor, or memory problems [\[R\]](#).

This cross-sectional study compared 64 dentists to a control group in terms of neurological symptoms, memory issues, and anxiety. Dentists had significantly higher scores for these symptoms, which correlated with urinary mercury levels. Dentists also had higher urinary mercury levels than the control group. Some dentists with high mercury levels experienced intentional tremors [\[R\]](#).

This study compared 43 dental staff with Hg vapor exposure to 43 control group members. The dental staff had higher Hg levels in their blood and urine. Urine Hg levels were associated with lower logical memory and total retention scores, as well as higher scores for anxiety and psychoticism in self-administered questionnaires [\[R\]](#).

In a study with an unspecified number of participants, exposed workers reported more symptoms and had more physical examination abnormalities. They also performed worse than unexposed subjects on tests related to vibration sense, motor speed, coordination, tremor, and cognitive function [\[R\]](#).

In a study involving 115 dental nurse graduates, the sample consisted of 43 mercury-exposed women and 32 matched controls. The two groups showed no significant differences in cognitive tasks and four of six mood subscales. However, differences were observed in current health symptoms and reproductive health, particularly early hysterectomy experiences. Occupational Overuse Syndrome reports were positively correlated with years of work [\[R\]](#).

49



Enzogenol

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 200-240 mg of Enzogenol daily, preferably with meals to enhance absorption. This supplement course can be continued consistently for ongoing support of cognitive health and antioxidant protection, but it's advisable to reassess your supplement needs and effects every 3-6 months.

TYPICAL STARTING DOSE

200 mg

Description

Enzogenol is a natural antioxidant derived from pine bark that may help protect cells from oxidative damage and support overall health. It is believed to have potential benefits for cardiovascular health and cognitive function.

Enzogenol is an extract of the pine bark (*Pinus radiata*) rich in antioxidants called proanthocyanidins [R].

People use enzogenol to [R]:

- Reduce inflammation
- Improve cognitive function
- Improve skin health

How it helps

Enzogenol supplementation (for 5 weeks) may improve the speed of response in spatial working memory and immediate recognition tasks in older people [R].

50



Phosphatidylserine And DHA

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a combined supplement of phosphatidylserine and DHA daily, with the phosphatidylserine dosage around 100 mg and DHA dosage around 500 mg. It is recommended to take this supplement with a meal to enhance absorption, and for ongoing support, consider taking it as part of your daily routine over an extended period, such as several months, to observe benefits.

TYPICAL STARTING DOSE

100 mg

Description

Phosphatidylserine is a naturally occurring phospholipid found in cell membranes, and plays a crucial role in cognitive function and memory support, and dietary supplements containing PS are often used to enhance mental clarity and focus. DHA is an omega-3 fatty acid primarily found in fatty fish like salmon, mackerel, and trout, and is known for supporting brain and heart health, and reducing inflammation.

How it helps

Phosphatidylserine and DHA help improve memory performance by enhancing nerve cell health and communication. They support cognitive functions, such as memory and concentration, by nourishing the brain and protecting it from damage.

A 3-month double-blind, placebo-controlled study assessed the influence of three PS+PA capsules/day, (300 mg PS + 240 mg PA/day) [phosphatidylserine (PS) and phosphatidic acid (PA)] or placebo on memory and mood in functioning, non-depressive elderly people with memory problems. In the elderly, PS+PA [per protocol (PP) n = 31], unlike placebo (PP n = 26), significantly improved memory and prevented "winter blues" in a pre-post comparison. [\[R\]](#)

In a study involving 157 participants, PS-DHA supplementation was compared to a placebo for 15 weeks. The PS-DHA group showed significant improvements in verbal immediate recall compared to the placebo group. Post-hoc analysis indicated that participants with better baseline cognitive performance experienced notable enhancements in immediate and delayed verbal recall, learning abilities, and time to copy a complex figure with PS-DHA treatment. [\[R\]](#)

51



Golf

IMPACT

1 / 5

EVIDENCE

1 / 5

Description

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

How it helps

In a non-placebo-controlled trial of 24 stroke patients, practicing golf 2x/week for 10 weeks improved mental rotation performance, visual-spatial memory, and well-being. Learning to play golf over 22 weeks improved attention in a non-placebo-controlled trial of 42 older participants. In another trial (100 older participants), golf training improved logical memory [\[R\]](#), [\[R\]](#), [\[R\]](#).

52



Endurance Training

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Engage in activities like running, swimming, or cycling for 60 minutes at a moderate intensity (or 30 minutes high-intensity), 3 to 5 days a week. To achieve significant benefits, maintain this regimen for at least 12 weeks.

TYPICAL STARTING DOSE

1 hour

Description

Endurance training is any type of exercise that helps you perform over a long period of time. It can improve your cardiovascular health, reduce your risk of chronic diseases, and improve your mental health.

How it helps

In a non-placebo-controlled trial of 34 patients with multiple sclerosis, the combination of Pilates and aerobic exercise (3x/week for 8 weeks) improved long-term verbal memory and visuospatial memory, among other cognitive aspects [\[R\]](#).

53



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 50 participants, supplementation with ashwagandha (300 mg, 2x/day) for 8 weeks improved immediate and general memory, executive function, attention, and processing speed [\[R\]](#).

Ashwagandha (500 mg/day for 8 weeks) also improved auditory-verbal working memory in a placebo-controlled trial of 53 patients with bipolar disorder [\[R\]](#).

Ashwagandha helps increase the production of acetylcholine, a crucial neurotransmitter for memory. It also mitigates the damage caused by stress and supports the rejuvenation of brain cells, enhancing memory performance.

54



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 80 older adults with mild cognitive impairment](#), supplementation with spirulina (1 g/day) for 12 weeks **improved visual learning, visual working memory, and vocabulary** [\[R\]](#).

55



Glycine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 3 to 5 grams of glycine supplement per day with water, preferably before bedtime for sleep improvement or spread throughout the day for general health benefits. Continue indefinitely as needed, but consult a healthcare provider for long-term use beyond three months.

TYPICAL STARTING DOSE

3 g

Description

Glycine is an amino acid that may have calming and anti-inflammatory effects, potentially benefiting sleep quality and joint health.

If you can't get enough glycine from food sources, glycine supplements are available. Daily doses of up to **6 g** have been safely used for up to **4 weeks**. Consult your doctor before supplementing.

How it helps

Glycine is an essential amino acid that aids in the production of memory-enhancing chemicals in the brain. Supplementing with glycine could boost cognitive performance and memory by supporting these functions.

In a placebo-controlled trial of young and middle-aged participants, supplementation with glycine improved retrieval from episodic memory in both the young and the middle-aged groups and sustained attention only in the middle-aged group [\[R\]](#).

56



Breath Awareness

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Set aside 5-10 minutes each day in a quiet, comfortable space to focus on your breath. Inhale slowly through your nose, allowing your chest and lower belly to rise, and exhale gently, either through the nose or mouth. Practice this daily, aiming to gradually increase the duration as it becomes a habit.

TYPICAL STARTING DOSE

5 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.

How it helps

In a non-placebo-controlled trial of 20 healthy volunteers, practicing breath awareness for 15 min improved performance at a memory task [\[R\]](#).

Practicing breath awareness for 10 days improved spatial memory by 84% in a non-placebo-controlled trial of 108 children [\[R\]](#).

Practicing breath awareness enhances your concentration and focus, training your brain to be more attentive, which can improve memory performance. By moderating stress and promoting calmness, it can provide an environment conducive to better memory retention.

57



Boron

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take a boron supplement of 3 to 6 mg daily, with food to enhance absorption. This dosage range is commonly recommended for general health benefits, based on nutritional studies. It's advisable to continue this regimen daily for an extended period, as long-term benefits depend on consistent supplementation.

TYPICAL STARTING DOSE

3 mg

Description

Boron is a trace mineral that plays a role in bone health, cognitive function, and hormone regulation.

Boron is a mineral in many foods, including:

- Fruits and fruit juices
- Avocados
- Potatoes
- Legumes
- Drinks (coffee, milk, cider, wine, and beer)

Scientists aren’t sure if boron has any roles in the body, so they don’t consider it an essential nutrient.

Some people take boron supplements to balance hormone levels, increase athletic performance, and more. However, the evidence to support these uses is weak.

How it helps

In a study of 28 healthy older people, eating a diet low in boron (0.25 mg/2000 kcal for up to 49 days) reduced performance on tasks evaluating short- and long-term memory among other cognitive aspects [\[R\]](#).

58



Citicoline And Caffeine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

Citicoline is a compound that may have cognitive-enhancing properties and is sometimes used as a dietary supplement to support brain function and memory. It's believed to promote neural health and cognitive performance.

CDP-choline is a molecule naturally produced by the body. It is important for cell structure and function. It also contributes to the production of the chemical messenger [acetylcholine](#) [R, R].

The supplement form of CDP-choline is called [citicoline](#). It may support brain and eye health. It may also help with drug addictions [R, R].

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.

People drink coffee for an energy and mood boost. [Caffeine](#) is the main ingredient responsible for these effects [R, R].

How it helps

A single 11.5-ounce dose of a beverage with citicoline and caffeine improved learning and processing speed in a study of 60 healthy volunteers [R].

59



Mangiferin

IMPACT

1 / 5

EVIDENCE

1 / 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

In 2 placebo-controlled trials of 102 healthy volunteers, supplementation with mango leaf extract (300-500 mg) before a cognitive assessment improved performance in episodic memory and other cognitive aspects [\[R\]](#), [\[R\]](#).

Mangiferin may help by reducing oxidative stress in the brain and enhancing neurotransmission.

60



L-Pyroglutamic Acid

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take L-pyroglutamic acid as a dietary supplement, usually found in capsule or powder form. The typical dose ranges from 600 to 1,200 mg, taken once daily. It is recommended to consume this supplement with a meal to enhance absorption.

TYPICAL STARTING DOSE
600 mg

Description

L-pyroglutamic acid is an amino acid derivative involved in various biochemical processes. It may have antioxidant properties and could contribute to cognitive function, although more research is needed to understand its specific health benefits.

How it helps

L-Pyroglutamic Acid is believed to benefit Memory Performance by improving the brain's function, specifically the memory-related regions. This supplement enhances communication within brain cells, and helps maintain optimal neurological health, thereby potentially improving memory recall and retention.

In a placebo-controlled trial of 40 aged subjects, supplementation with L-pyroglutamic acid for 60 days improved some verbal memory functions in those affected by age-related cognitive decline [\[R\]](#).

61



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 high in antioxidants and healthy fats that support brain health, potentially improving memory and cognitive function. Regular consumption may also help protect the brain from damaging inflammation and support its ability to process information.

Subjects were divided into three groups: 1.5 oz/d almonds, 3 oz/d almonds, or 3.5 oz/d snack (control). Cognitive test changes over time were similar between groups, but the 3 oz/d almond group showed significant improvements in visuospatial working memory, visual memory, and spatial planning compared to the snack group at month 6 [\[R\]](#).

In a 12-week weight loss study with overweight and obese adults, almond consumption reduced the post-lunch memory dip when included in a midday meal. However, sustained almond consumption did not significantly enhance overall cognitive function in this context [\[R\]](#).

The AED (almond-enriched diet) significantly reduced triglycerides and SBP but there were no other changes in cardiometabolic biomarkers, mood, or cognitive performance [\[R\]](#).

62



Bhastrika Yoga (Bellows Breathing)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Sit in a comfortable position with your back straight. Inhale deeply through your nostrils, filling your lungs with air, then exhale forcefully through the nostrils, emptying the lungs completely. Do this for 2 minutes initially, gradually increasing to 5 or 10 minutes daily, preferably in the morning on an empty stomach.

TYPICAL STARTING DOSE

5 minutes

Description

Bhastrika yoga, also known as "bellows breath," is a pranayama (breathing) technique in yoga. It involves forceful inhalation and exhalation and is believed to increase vitality, clear the mind, and improve respiratory health when practiced mindfully as part of a yoga routine.

How it helps

In a non-placebo-controlled trial of 96 healthy volunteers, practicing bhastrika and anulom vilom pranayam for 6 weeks improved memory [\[R\]](#).

Bhastrika yoga may help by increasing oxygen supply and stimulating the brain, which can improve neural functioning and memory recall.

63



Avoid BPA (Bisphenol A) Exposure

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

To avoid BPA exposure, choose BPA-free products, particularly when selecting food containers, water bottles, and baby bottles. Prefer glass, porcelain, or stainless steel containers, especially for hot food or liquids. Reduce use of canned foods as they may be lined with BPA and avoid handling thermal paper receipts, as they can contain BPA. When possible, select fresh or frozen foods over canned goods.

Description

Avoiding BPA (Bisphenol A) exposure involves minimizing contact with products or containers containing this chemical, which is commonly found in plastics and can potentially disrupt hormone regulation.

BPA (bisphenol A) is a chemical used to make certain plastics and resins. BPA-containing plastics are often used in containers that store food and beverages. Plastics marked with **recycling code 3 or 7** may contain BPA [\[R\]](#).

BPA is a well-known hormone disruptor. Research has linked BPA exposure to diabetes, heart disease, altered behavior, and more [\[R\]](#).

How it helps

A study of 961 participants associated high levels of BPA with a 2-fold higher risk of low cognitive performance on the delayed recall test, especially in males [\[R\]](#).

64



Tart Cherries

IMPACT

1 / 5

EVIDENCE

1 / 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

Tart cherries are high in antioxidants known as anthocyanins, which can improve brain health and reduce inflammation, potentially enhancing memory performance. However, more research is needed to definitively establish this link.

In a [placebo-controlled trial of 37 older adults](#), consuming tart cherry juice (2 cups/day) for 12 weeks **improved memory, learning, visual sustained attention, and spatial working memory** [\[R\]](#).

65



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

Concord grape juice is rich in antioxidants like polyphenols that boost brain health, enhancing memory performance. Regular consumption can potentially prevent memory loss by improving communication between brain cells and preventing neural damage.

66



Cognitive-Behavioral Therapy (CBT)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Schedule weekly sessions with a certified cognitive-behavioral therapist for a period of 5 to 20 weeks. Engage actively in exercises assigned by your therapist both during sessions and as homework to apply CBT strategies to daily life.

Description

Cognitive-behavioral therapy (CBT) is a psychotherapeutic approach that has been effective in treating various mental health conditions by helping individuals identify and change negative thought patterns and behaviors. It is widely used for conditions like depression, anxiety, and phobias.

Psychotherapy (talk therapy) involves talking about your health with a licensed therapist. It may improve the way you react to certain experiences [\[R\]](#).

Talk therapy is a great way to improve many conditions, including [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Depression
- Anxiety disorders
- PTSD
- OCD
- Substance use disorder
- Bipolar disorder

Cognitive-behavioral therapy (CBT) is a type of talk therapy. CBT aims to change the way you think about your life and yourself. Through CBT, a therapist can help you develop healthy coping mechanisms [\[R\]](#).

How it helps

A study assessed CBT's impact on memory retrieval specificity in patients with complicated grief. It reported a positive correlation between symptom reduction and increased specific retrieval of autobiographical memories following CBT for 10 weeks [\[R\]](#).

However, another study found that CBT had limited influence on memory functions, with no significant improvements in verbal learning and memory performance [\[R\]](#).

67



Pilates and Endurance Training

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate a Pilates session of at least 30 minutes, 3 times a week, focusing on core strength, flexibility, and posture. Add endurance training, such as running, cycling, or swimming, for 30 minutes, 3 times a week, to improve cardiovascular health and stamina.

TYPICAL STARTING DOSE

1 hour

Description

Pilates and endurance training are two types of exercise that can provide a variety of health benefits. Pilates can help to improve flexibility, strength, and core stability, while endurance training can help to improve cardiovascular health and reduce the risk of chronic diseases.

How it helps

In a non-placebo-controlled trial of 34 patients with multiple sclerosis, the combination of Pilates and aerobic exercise (3x/week for 8 weeks) improved long-term verbal memory and visuospatial memory, among other cognitive aspects [\[R\]](#).

68



Avoid Exposure to Heavy Metals

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

Description

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

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

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

- Lead
- Cadmium
- Arsenic
- Chromium
- Mercury

How it helps

A study of 1,791 older participants associated high urinary heavy metals with difficulties in thinking or remembering [\[R\]](#).

Heavy metals like lead and mercury can build up in the body over time, harming the brain and resulting in memory problems.

69



Omega-3 (Fish Oil)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

500 mg

Description

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

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

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

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

- Salmon
- Tuna
- Herring
- Sardines

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

How it helps

According to one study, omega-3 fatty acid supplements may improve memory in healthy older adults. After 26 weeks, those taking omega-3 showed better object-location memory, suggesting potential cognitive benefits [\[R\]](#).

70



Phosphatidylcholine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 420-900 mg of phosphatidylcholine supplement daily, ideally with meals to enhance absorption. Continue this regimen for at least 3 months to evaluate its effects on your health.

TYPICAL STARTING DOSE
420 mg

Description

Phosphatidylcholine is a crucial phospholipid found in cell membranes throughout the body, particularly in the brain. It plays a vital role in cognitive function and liver health, supporting processes like cell signaling and fat metabolism.Phosphatidylcholine can be derived from soybeans and other sources, and it is often used as a dietary supplement to promote brain health and liver function.

[Phosphatidylcholine](#) is a key component of cells [\[R\]](#).

It helps [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Maintain cell structure
- Protect the lungs, gut, liver, and nerves
- Break down fats

Because [choline](#) is needed to make phosphatidylcholine, low choline levels can limit its production [\[R\]](#).

How it helps

In a placebo-controlled trial of 80 college students, a single dose of phosphatidylcholine (25 g) improved explicit memory, measured by a serial learning task, after 60-90 min [\[R\]](#).

Phosphatidylcholine aids in the production of a vital brain chemical called acetylcholine. This chemical enhances memory performance by improving signal transmission between brain cells.

Please note: *some studies suggest that phosphatidylcholine may interfere with iron absorption in the gut. If you have anemia, consult your healthcare provider before using phosphatidylcholine supplements.*

71



Bifidobacterium Longum

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a Bifidobacterium longum supplement daily, with a typical dosage around 10 billion colony-forming units (CFUs). It can be consumed any time of day, but taking it with a meal might improve its absorption and effectiveness. Continue this regimen for at least 4 weeks to assess its benefits on digestive health.

TYPICAL STARTING DOSE
10 billion CFU

Description

Bifidobacterium longum is a beneficial probiotic strain known for its potential to support digestive health and boost the immune system.

[Bifidobacterium longum](#) is a [probiotic](#) bacterium naturally present in the human gastrointestinal tract. Its subspecies *B. longum subsp. infantis* is one of the earliest bacteria to colonize the infant gut [\[R\]](#).

People take *B. longum* to enhance immunity against infections and support gut health [\[R\]](#), [\[R\]](#), [\[R\]](#).

How it helps

Bifidobacterium Longum aids in the reduction of inflammation and oxidative stress in the brain, factors commonly linked with memory impairment. Consequently, by boosting gut health and its interaction with the brain (gut-brain axis), it can help enhance memory performance.

A study investigated the effect of Bifidobacterium longum BB68S (5 × 10e10 CFU/sachet) on cognitive functions among 60 healthy older adults without cognitive impairment. BB68S significantly improved subjects’ cognitive functions, especially immediate memory, visuospatial/constructional, attention, and delayed memory domains [\[R\]](#).

72



Green Tea Catechins and L-Theanine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a supplement containing 200-400 mg of green tea catechins and 100-200 mg of L-theanine daily. This can be consumed in a single dose or divided into two doses, one in the morning and one in the afternoon. Continue this supplementation daily for at least 3 months to observe beneficial effects.

TYPICAL STARTING DOSE
200 mg

Description

Green tea catechins are bioactive compounds found in green tea that contribute to its health benefits. They are known for their antioxidant properties and may help protect cells from oxidative stress and reduce the risk of chronic diseases. Theanine is an amino acid found in green tea known for its potential to promote relaxation and reduce stress and anxiety.

How it helps

In a study of 46 people with minor brain damage, a combination of L-theanine and green tea extract improved recognition memory, attention span, and alertness during a memory test [\[R\]](#).

Please note: polyphenols from green tea may bind to iron and form insoluble complexes, which reduces iron absorption in the gut. If you have anemia, consult your healthcare provider before using green tea [\[R\]](#).

73



Sage Extract

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take sage extract in supplement form, ideally in doses ranging from 300 to 600 mg daily, divided into 2 or 3 doses throughout the day. It is recommended to follow this regimen for at least 1 to 2 months to evaluate its effects on cognitive function and mood improvements.

TYPICAL STARTING DOSE
300 mg

Description

Common sage (*Salvia officinalis*) is an herb from the mint family. It is native to the Mediterranean region. The main compounds in sage extract include essential oils like thujone and cineole, which contribute to its flavor and potential benefit for sore throats and digestive issues [R].

People commonly use sage as a spice and a traditional remedy for [R, R]:

- Sore throat
- Mood
- Blood sugar and cholesterol control
- Heavy sweating

How it helps

In a placebo-controlled trial of 36 healthy participants, supplementation with sage essential oil (50 µL) improved performance at secondary memory and attention tasks, reduced mental fatigue, and increased alertness [R].

In a placebo-controlled trial of 20 older volunteers, supplementation with 4 active doses of sage extract (167, 333, 666, and 1332 mg) with 7-day washout periods enhanced secondary memory. The 333-mg dose was most effective [R].

In a placebo-controlled trial of 94 healthy volunteers, supplementation with sage extract (600 mg *Salvia officinalis* polyphenols and *Salvia lavandulaefolia* terpenoids) for 29 days improved working memory and accuracy [R].

The combination of sage, rosemary, and melissa taken for 2 weeks improved delayed word recall in participants younger than 63 years old in a placebo-controlled trial of 44 healthy volunteers [R].

Sage extract contains compounds that prevent the breakdown of acetylcholine, a brain chemical involved in memory and learning.

Please note: *rosmarinic acid from sage 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 sage extract and always consult with a healthcare provider before taking this supplement [R].*

74



Curcumin Theracurmin

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

180 mg

Description

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

How it helps

In a placebo-controlled trial of 40 non-demented adults, supplementation with curcumin Theracurmin (90 mg, 2x/day) for 18 months improved memory and attention [\[R\]](#).

Curcumin Theracurmin may increase BDNF levels, a type of growth hormone needed in the brain.

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

75



Pomegranate Juice

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

Description

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

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

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

How it helps

In a placebo-controlled trial of 261 participants, drinking pomegranate juice (236.5 mL/day) for 12 months stabilized the ability to learn visual information [\[R\]](#).

Pomegranate juice is rich in antioxidants, which protect the brain from damage by free radicals.

76



Sensory Deprivation

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Engage in sensory deprivation by spending 20 to 40 minutes in a quiet, dark room, free from distractions such as your phone or background noise, at least once a week. Alternatively, for a more immersive experience, consider using a sensory deprivation tank once a month, where you float in saltwater in a dark, soundproof tank.

TYPICAL STARTING DOSE

40 minutes

Description

Sensory deprivation involves isolating an individual from sensory input to induce deep relaxation and altered states of consciousness. It is used for relaxation, meditation, and potential mental health benefits.

How it helps

In a non-placebo-controlled trial of 33 healthy volunteers, sensory deprivation (especially of visual stimuli) facilitated memory retrieval during tip-of-the-tongue experiences [\[R\]](#).

Sensory deprivation may help by reducing distractions and promoting deep mental relaxation. This also aids in the consolidation of new memories and improves recall of pre-existing memories.

77



Honey

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Consume 1-2 tablespoons of raw honey daily, either directly or by mixing it into warm water, tea, or yogurt. Continue this practice regularly to observe benefits.

Description

Honey is a natural sweetener known for its antimicrobial properties and potential benefits for wound healing. It contains antioxidants and may have soothing effects on sore throats and coughs.

[Honey](#) is a thick, sweet substance. It’s made by honeybees from the nectar of flowering plants. There are many different types of honey. Besides sugar, honey also contains amino acids (protein building blocks), vitamins, and minerals [\[R\]](#).

People use honey for its anti-inflammatory and antioxidant properties. It can potentially help with [\[R\]](#):

- Heart problems
- Gut problems
- Cough
- Burns

How it helps

Honey is packed with antioxidants which fight off harmful molecules, protecting the brain and enhancing memory function. It also has natural sugars that provide a quick energy boost, improving mental performance.

In a [non-placebo-controlled trial of 102 postmenopausal women](#), ingesting tualang honey (20 g/day) for 16 weeks **improved immediate memory, but not after an interference, and delayed recall** [\[R\]](#).

78



Rosemary Oil Aromatherapy

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

For rosemary oil aromatherapy, add 2-3 drops of rosemary essential oil to a diffuser filled with water. Use the diffuser in your desired room for 30-60 minutes daily. Ensure the room is well-ventilated to avoid potential irritation.

TYPICAL STARTING DOSE

2 drops

Description

Rosemary oil aromatherapy involves the inhalation of the essential oil derived from rosemary leaves. It may promote mental alertness, reduce stress, and provide a sense of relaxation.

How it helps

Inhaling rosemary oil may aid memory performance by increasing alertness and enhancing your mood due to stimulating certain areas in the brain. It should be used as a supplemental treatment and not as the main method to treat memory problems.

In a study of 86 chronic hemodialysis patients, receiving aromatherapy with lavender, rosemary, or orange essential oils three times a week for a month stabilized prospective memory problems while improving retrospective memory problems [\[R\]](#).

In a study of 144 participants, exposure to rosemary odor improved overall memory quality and secondary memory factors but slowed memory speed compared to the control group [\[R\]](#).

79



Eleuthero

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take an eleuthero supplement of 300 to 1200 mg daily, usually divided into two or three doses. It is recommended to follow this dosage for up to 6 weeks, after which a break or consultation with a healthcare provider is advised.

TYPICAL STARTING DOSE
300 mg

Description

Eleuthero, also known as Siberian ginseng, is an adaptogenic herb that may help the body cope with stress, support immune function, and increase energy levels. It's used in herbal remedies to promote resilience and vitality.

How it helps

In a [placebo-controlled trial of 40 women](#), taking a single dose of a combination of eleuthero, schisandra, and rhodiola **improved attention, speed, and accuracy during stressful cognitive tasks** [\[R\]](#).

The combination of eleuthero leaf and Drynaria fortunei rhizome extracts taken for 12 weeks **improved recall, language, and semantic fluency** in a [placebo-controlled trial of 31 healthy adults](#) [\[R\]](#).

However, adding eleuthero (120 mg/day for 8 weeks) to stress management training provided **no added benefits on concentration** in a [non-placebo-controlled trial of 144 participants suffering from asthenia and reduced working capacity related to chronic stress](#) [\[R\]](#).

80



Black Seed (Black Cumin)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 1000 mg of black seed (black cumin) supplement daily, preferably split into two doses of 500 mg each, one in the morning and one in the evening.

TYPICAL STARTING DOSE

1000 mg

Description

Black seed, also known as black cumin or *Nigella sativa*, has been used for its potential health benefits in traditional medicine. It is believed to have anti-inflammatory, antioxidant, and immune-boosting properties.

[Black seed](#) (black cumin) and its oil are used in cooking and traditional medicine [\[R\]](#).

People use black seed for [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Asthma
- Allergies
- High blood sugar
- High blood pressure
- Joint pain

How it helps

In a placebo-controlled trial of 20 elderly volunteers, taking black seed extract (500 mg, 2x/day) for 9 weeks improved cognition, attention, and memory. Taking 500 mg/day for 4 weeks improved long-term free recall and long-term cued recall, as well as mood and anxiety, in another placebo-controlled trial of 48 healthy adolescents [\[R\]](#), [\[R\]](#).

Black seed may help by protecting the brain from oxidative and inflammatory damage.

81



Fucoxanthin And Guarana

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a supplement containing fucoxanthin in combination with guarana once daily, ideally with a meal to enhance absorption. The specific dose of fucoxanthin is usually around 2.4-8mg, and guarana around 50-200mg, but follow the product's label for exact dosing. Continuous use for at least 12 weeks is recommended for best results.

Description

Fucoxanthin is a natural pigment found in certain types of seaweed and algae. It is believed to have potential health benefits, including supporting weight management and promoting antioxidant activity. Guarana is a plant native to the Amazon basin known for its caffeine content. It is used in some dietary supplements and energy drinks for its potential to enhance alertness and cognitive function.

How it helps

Fucoxanthin is associated with improved cognitive function as it contributes to brain health through anti-oxidative and anti-inflammatory activities. Guarana contains caffeine which enhances mental alertness and memory.

82



DHA (Omega-3)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take an omega-3 supplement containing DHA at a dosage of 200-500 mg daily, preferable with a meal to improve absorption. It's recommended to continue this supplementation as part of your daily regimen to support heart, brain, and joint health.

TYPICAL STARTING DOSE

200 mg

Description

DHA is an omega-3 fatty acid found in fatty fish and algae-based supplements. It is essential for brain health and has been associated with cognitive function, cardiovascular health, and reducing inflammation in the body.

An **EPA/DHA supplement** can be taken to help meet omega-3 fatty acid needs not achieved through diet. Supplement amounts are generally 250-500mg/d though there are no current official recommendations other than for ALA.

How it helps

A study found that DHA supplementation (1,160 mg/day for 6 months) improved memory and reaction times in healthy young adults, especially for those with a low dietary DHA intake [\[R\]](#).

DHA may help by reducing the risk of cognitive decline and supporting brain cell survival and repair [\[R\]](#).

83



CBD

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a CBD supplement in a dosage ranging from 10 to 40 milligrams per day. Start with the lowest dose and gradually increase it based on your body's response. This can be taken orally in the form of capsules, edibles, or oil drops under the tongue. For ongoing issues, such as anxiety or chronic pain, it may be used daily, while for acute issues, it might be used as needed.

TYPICAL STARTING DOSE

10 mg

Description

CBD is a non-psychoactive compound found in cannabis plants and is used in various forms, including oils and creams. It may have potential benefits for pain relief, anxiety reduction, and overall relaxation, although more research is needed to fully understand its effects.

[Cannabidiol](#) (CBD) is a compound found in cannabis. Unlike its cousin THC, CBD is not psychoactive and can’t get you “high” [\[R\]](#).

People use CBD to:

- Reduce anxiety [\[R, R\]](#)
- Relieve pain [\[R, R, R\]](#)
- Prevent seizures [\[R\]](#)
- Improve sleep [\[R\]](#)

How it helps

CBD may aid memory performance by reducing inflammation and oxidative stress in the brain, both known contributors to cognitive decline. Furthermore, it influences the endocannabinoid system which plays a role in memory processing.

In a placebo-controlled trial of 34 young healthy subjects, vaping a single dose of CBD (0.25 mL, 12.5 mg CBD) enhanced verbal episodic memory performance. In another placebo-controlled trial (48 healthy participants), supplementation with CBD (600 mg) improved episodic memory and verbal learning [\[R, R\]](#).

Please note: *CBD can interact with medications and raise the levels of liver enzymes. It may not be safe for pregnant women. Never use CBD without consulting your doctor. Also, make sure to verify the legality of CBD in your country or state* [\[R, R, R, R, R\]](#).

84



L-Theanine and Caffeine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Combine 100 mg of L-theanine with 50 mg of caffeine, taken ideally in the morning or early afternoon to avoid impacting sleep. This combination can be taken daily, but it’s important to adjust based on personal tolerance and to avoid taking too late in the day.

TYPICAL STARTING DOSE

100 mg

Description

L-theanine is an amino acid found in tea leaves, known for its calming and relaxation-promoting effects. It is often used to reduce stress and anxiety and may contribute to improved focus and cognitive performance. Caffeine is a natural stimulant found in coffee, tea, and other beverages. It can temporarily increase alertness and energy levels, making it a popular choice for combating fatigue and enhancing cognitive function.

[L-theanine](#) is an amino acid found in black and [green tea](#) [\[R\]](#).

People take L-theanine as a supplement to [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Improve cognition
- Boost immunity
- Relieve anxiety and stress

[Caffeine](#) is the main ingredient responsible for the energy- and mood-boosting effects of coffee [\[R\]](#), [\[R\]](#).

Moderate doses of caffeine may also [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Improve heart health
- Improve mood
- Help reduce blood sugar

How it helps

The combination of L-theanine (50-200 mg) and caffeine (40-160 mg) improved memory and other aspects of cognitive performance in two studies of 51 people [\[R\]](#), [\[R\]](#).

85



Citicoline (CDP Choline)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 250 to 1000 mg of citicoline (CDP choline) daily, in the morning with or without food. For best results, continue this supplement regimen daily for at least 6 weeks to 3 months.

TYPICAL STARTING DOSE

250 mg

Description

Citicoline is a compound that may have cognitive-enhancing properties and is sometimes used as a dietary supplement to support brain function and memory. It's believed to promote neural health and cognitive performance.

CDP-choline is a molecule naturally produced by the body. It is important for cell structure and function. It also contributes to the production of the chemical messenger [acetylcholine](#) [R, R].

The supplement form of CDP-choline is called [citicoline](#). It may support brain and eye health. It may also help with drug addictions [R, R].

How it helps

In a study of 24 healthy adults, high citicoline doses (500-1,000 mg) improved a variety of cognitive markers including working and verbal memory, but only in low cognitive performers. Supplementation had no effects on medium performers and even slightly impaired cognition in high performers [R].

In 2 placebo-controlled trials of 119 older adults with relatively inefficient memories, citicoline therapy (1,000-2,000 mg/day for up to 2 months) improved delayed and free recall on logical memory in those with most inefficient memories at the lower dose, while the higher dosage improved both immediate and delayed logical memory [R, R].

86



Boswellia

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a 350 mg Boswellia supplement daily, ideally with a meal to enhance absorption.

TYPICAL STARTING DOSE

350 mg

Description

Boswellia is an herbal remedy derived from the resin of certain trees. It's known for its potential anti-inflammatory properties and is often used to support joint health.

[Boswellia](#), also known as frankincense, is the hardened sap of the *Boswellia serrata* tree [\[R\]](#).

In traditional medicine, boswellia is used for joint pain and gut conditions [\[R\]](#).

Today, some people use boswellia for [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Osteoarthritis
- IBD
- Skin aging
- Asthma
- Gum health

How it helps

Boswellia, also known as Indian frankincense, can promote brain health by decreasing inflammation and oxidative stress, factors that could potentially damage your brain cells and impair memory performance. However, more research is needed to fully validate its benefit in enhancing memory.

In a double-blind, randomized, placebo-controlled clinical trial, patients with a history of traumatic brain injury (TBI) were assigned to either a placebo group (n = 34) or a K-Vie™ group (n = 46) for a 3-month treatment period. The study revealed significant (p < 0.05) cognitive function improvement in patients receiving K-Vie™ compared to those on placebo, as assessed through RAVLT, DSST, and TMT-B tests [\[R\]](#).

A 12-week study with 38 patients having Diffuse Axonal Injury (DAI) found that Boswellia Serrata (BS) resin did not significantly impact overall outcomes but showed potential cognitive benefits in DAI patients [\[R\]](#).

A double-blind clinical trial with 70 older adults in Iran investigated the impact of Boswellia serrata (BS) and Mellisa officinalis (MO) tablet extracts on memory. The group taking these tablets showed significant memory improvement across various measures compared to the placebo group (p < 0.0001) [\[R\]](#).

87



Guided Imagery

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Find a quiet, comfortable place to sit or lie down where you can spend 20 to 30 minutes without interruptions. Close your eyes and take deep breaths to relax. Then, listen to a guided imagery audio recording or follow a script where you imagine a peaceful scene or scenario in detail. Do this practice daily, ideally at the same time each day, to reduce stress and improve well-being.

TYPICAL STARTING DOSE

30 minutes

Description

Guided imagery is a relaxation technique that involves using mental images to promote relaxation, reduce stress, and manage pain. It can have a positive impact on mental well-being and overall stress management.

Guided imagery is a relaxation technique that involves visualizing positive, peaceful settings. Guided imagery aims to [\[R\]](#), [\[R\]](#):

- Improve mind-body connection
- Enhance well-being
- Reduce stress and anxiety
- Improve immunity

How it helps

In a study of 30 volunteers, participants received a WAIS-III Letter-Number Sequencing Test before and after 10-min treatments (guided imagery, music, or none). Guided imagery improved scores, while music and control groups showed no change [\[R\]](#).

Guided imagery involves a series of visualization techniques that can improve focus, attention, and memory by reinforcing certain neural connections in the brain.

88



Plasmalogens

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Follow the dosage instructions provided on the product label or as directed by your healthcare provider. Typically, these supplements come in capsule form and are taken once daily with water, ideally with a meal to enhance absorption. Consistency is key, so taking them at the same time each day is recommended. Always consult a healthcare professional before starting plasmalogen supplements, especially if you are pregnant, nursing, or have any medical conditions.

Description

Plasmalogens are a special kind of phospholipids found in cell membranes, particularly in the brain (comprising 20% of its content), heart, lungs, eyes, and kidneys. Plasmalogens help the nervous system work and prevent brain cell death by reducing inflammation and oxidative stress. Their levels decrease with age [\[R\]](#).

Plasmalogen supplements are being researched to improve cognitive function in both healthy subjects and those with mild cognitive impairment or Alzheimer’s disease [\[R\]](#), [\[R\]](#).

How it helps

In a placebo-controlled trial of 49 volunteers with mild forgetfulness, supplementation with ascidian-derived plasmalogen (1 mg/day) for 12 weeks improved composite (sum of visual and verbal) memory scores [\[R\]](#).

89



Phosphatidylserine And Phosphatidic Acid

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a combined supplement of phosphatidylserine and phosphatidic acid, with a typical dosage of 300-600 mg of phosphatidylserine and 600-1200 mg of phosphatidic acid daily, divided into two or three doses. This regimen should be followed consistently every day for at least 12 weeks to assess 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. Phosphatidic acid is a phospholipid naturally found in cell membranes, and is particularly abundant in soybeans. It plays a role in cell signaling and may have potential benefits in supporting muscle growth and recovery, as well as improving memory and mood.

How it helps

Phosphatidylserine and phosphatidic acid work together to fortify the structure and functioning of brain cells, which can sharpen memory performance. Ongoing supplementation may boost cognitive abilities, including memory, concentration, and learning speed.

- A 3-month double-blind, placebo-controlled study assessed the influence of three PS+PA capsules/day, (300 mg PS + 240 mg PA/day) [phosphatidylserine (PS) and phosphatidic acid (PA)] or placebo on memory and mood in functioning, non-depressive elderly people with memory problems. In the elderly, PS+PA [per protocol (PP) n = 31], unlike placebo (PP n = 26), significantly improved memory and prevented "winter blues" in a pre-post comparison. [\[R\]](#)
- In a study involving 157 participants, PS-DHA supplementation was compared to a placebo for 15 weeks. The PS-DHA group showed significant improvements in verbal immediate recall compared to the placebo group. Post-hoc analysis indicated that participants with better baseline cognitive performance experienced notable enhancements in immediate and delayed verbal recall, learning abilities, and time to copy a complex figure with PS-DHA treatment. [\[R\]](#)

90



Pilates

IMPACT

1 / 5

EVIDENCE

1 / 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

In a non-placebo-controlled trial of 34 patients with multiple sclerosis, the combination of Pilates and aerobic exercise (3x/week for 8 weeks) improved long-term verbal memory and visuospatial memory, among other cognitive aspects [\[R\]](#).

91



Vinpocetine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take vinpocetine as a supplement with a dose of 10mg three times daily. It's best consumed with meals to enhance its absorption.

Description

Vinpocetine is a synthetic compound derived from the periwinkle plant, used as a dietary supplement. It may support cognitive function and enhance blood flow to the brain, potentially benefiting memory and mental clarity.

How it helps

In 2 old studies of 20 healthy volunteers, treatment with vinpocetine (40-120 mg/day) improved memory and prevented its impairment caused by standard medication therapy [\[R\]](#), [\[R\]](#).

92



Cyanidin

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take cyanidin as a dietary supplement in the form of capsules or powder. The typical dosage ranges from 50 to 200 mg per day. It should be consumed with water, preferably with meals to enhance absorption, and continued daily for at least 3 to 6 months to observe potential health benefits.

TYPICAL STARTING DOSE

50 mg

Description

Cyanidin is a type of natural pigment that gives certain fruits and veggies their rich red, purple, or blue color. Consuming cyanidin, especially through a diet filled with colorful fruits and vegetables, can be beneficial for overall health. It can help prevent heart disease, control diabetes, and even slow down aging, thanks to its potent antioxidant properties.

How it helps

In a placebo-controlled trial of 31 subjects with signs of poor cognitive function, drinking polyphenols-rich tropical fruit juice with cyanidin (500 mL, 3x/day) for 10 weeks improved cognitive function, particularly learning, memory, processing speed, sequencing, mental flexibility, and visual-motor skills [\[R\]](#).

Cyanidin may help by protecting brain cells from damage and inflammation.

93



Curcumin

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE
500 mg

Description

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

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

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

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

How it helps

Curcumin, found in turmeric, may increase levels of brain-derived neurotrophic factor (BDNF), a protein in the brain and spinal cord that plays a key role in memory, learning, and other cognitive functions. This boost may help with memory and potentially delay brain diseases or age-related reductions in brain function.

In a placebo-controlled trial of 40 non-demented adults, supplementation with curcumin Theracurmin (90 mg, 2x/day) for 18 months improved memory and attention [R].

Curcumin Theracumin may increase BDNF levels, a type of growth hormone needed in the brain.

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

94



Lactobacillus Helveticus

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a supplement containing Lactobacillus helveticus, usually available in capsule or powder form. Follow the manufacturer's instructions, commonly involving taking one to two capsules daily, preferably with a meal or as directed by a healthcare provider. Continue this regimen daily for at least 8 to 12 weeks to potentially see benefits.

TYPICAL STARTING DOSE
10 billion CFU

Description

Lactobacillus helveticus is a beneficial probiotic strain that can support digestive health and contribute to a balanced gut microbiome. It may help improve gut function, enhance nutrient absorption, and bolster the immune system, promoting overall well-being.

How it helps

Lactobacillus Helveticus is a probiotic known to boost memory performance by promoting the synthesis of acetylcholine, an essential neurotransmitter involved in memory and cognition. It also enhances gut health, indirectly affecting brain function and memory through the gut-brain axis.

In a placebo-controlled trial of 60 healthy volunteers, consuming milk fermented with *L. helveticus* (190 g/day) for 8 weeks improved total cognitive score, attention, and delayed memory [\[R\]](#).

95



Huperzine A

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a Huperzine A supplement daily, starting with a low dose of about 50 micrograms (mcg) in the morning, and gradually increase the dosage based on tolerance, not exceeding 200 mcg per day. It's recommended to cycle the supplement, taking it for a duration of 2-4 weeks followed by a break of 1 week to prevent tolerance build-up.

TYPICAL STARTING DOSE

50 mcg

Description

Huperzine A is a compound extracted from Chinese club moss and is sometimes used in supplements for its potential cognitive-enhancing properties. It is believed to support memory and cognitive function, though its effectiveness can vary among individuals.

Huperzine A is an alkaloid found in Chinese club moss (*Huperzia serrata*). Its cognitive-enhancing effects may be due to its involvement in inhibiting the breakdown of acetylcholine, a neurotransmitter that is important for memory and learning [\[R\]](#).

People take huperzine A supplements for a variety of purposes, including [\[R\]](#):

- Improving memory and cognitive function
- Reducing anxiety and depression

How it helps

In a study of 68 junior middle school students complaining of memory problems, taking huperzine A (100 µg/day for 4 weeks) enhanced memory and learning [\[R\]](#).

Huperzine A also helped improve memory when combined with standard therapy in a study of 238 people with depression. However, it did not alleviate the depression itself [\[R\]](#).

96



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 is known to be effective in enhancing memory and cognitive function. Studies have demonstrated its benefits in improving cognitive abilities in people with Alzheimer's disease and other forms of dementia by serving as a precursor to acetylcholine, an important neurotransmitter involved in memory and learning [\[R\]](#).

97



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

Behavioral Sleep Extension, which involves allocating more time for sleep, can enhance Memory Performance. Good quality sleep aids in the consolidation of memories, hence improving recall and cognitive function.

In a non-placebo-controlled trial of 121 short-sleeping obese participants, sleep extension improved memory and other cognitive aspects [\[R\]](#).

98



L-Theanine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 100-400 mg of L-theanine supplement daily. It can be consumed at any time of the day, with or without food.

TYPICAL STARTING DOSE

100 mg

Description

L-theanine is an amino acid found in tea leaves, known for its calming and relaxation-promoting effects. It is often used to reduce stress and anxiety and may contribute to improved focus and cognitive performance.

[L-theanine](#) is an amino acid found in black and [green tea](#) [\[R\]](#).

People take L-theanine as a supplement to [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Improve cognition
- Boost immunity
- Relieve anxiety and stress

How it helps

Using L-theanine (250 mg/day) as an add-on to conventional therapy (over 8 weeks) improved verbal memory, executive function, sleep quality, anxiety, and mood in a study of 20 people with depression [\[R\]](#).

99



Avocado

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate half to one whole avocado into your daily diet. You can add it to salads, sandwiches, or use it as a healthy fat substitute for spreads or dressings.

Description

Avocado is a nutrient-dense fruit known for its creamy texture and healthy monounsaturated fats. It is packed with vitamins, minerals, and dietary fiber, and may support heart health, skin health, and overall nutrition.

[Avocado](#) is a fruit first cultivated in Mexico in 500 BCE [\[R\]](#), [\[R\]](#).

You can eat it raw in salads, sandwiches, and dips. Avocado oil has recently become popular, but it’s much less nutritious than the whole fruit.

Avocado is rich in antioxidants, vitamins, minerals, and fiber. It may support [\[R\]](#):

- Heart health
- Healthy weight
- Healthy aging

How it helps

Avocados are loaded with monounsaturated fats, which help to maintain healthy blood sugar levels and aid the brain by improving overall cognitive function, including memory and concentration. They also contain antioxidants like vitamin E, which can help protect the brain from damage that can lead to disorders affecting memory.

In a [non-placebo-controlled trial of 40 healthy volunteers](#), consuming 1 avocado/day for 6 months **improved sustained attention, memory, and working memory** [\[R\]](#).

Consuming avocados for 12 weeks **improved attentional inhibition** in a [non-placebo-controlled trial of 84 overweight and obese participants](#) [\[R\]](#).

100



Boswellia And Lemon Balm

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a boswellia supplement of 300-500 mg up to three times per day, combined with 300-500 mg of lemon balm in capsule form, also up to three times daily. It's advisable to start with the lower dosage and observe how your body reacts before increasing the dosage. Continue this regimen for at least one month to assess its effectiveness.

TYPICAL STARTING DOSE

300 mg

Description

Boswellia is an herbal remedy derived from the resin of certain trees. It's known for its potential anti-inflammatory properties and is often used to support joint health. Lemon balm is an herb known for its calming properties and potential to reduce anxiety and promote relaxation.

How it helps

Boswellia has known anti-inflammatory and antioxidant properties, which can protect the brain cells, promoting memory and cognitive functioning. Lemon Balm has been shown to enhance mood and cognitive function, which can directly improve memory performance.

101



Kava

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a 200 mg kava supplement daily, ideally in the evening or as directed by healthcare provider, for periods of stress or anxiety. Do not exceed the recommended dosage without medical advice.

TYPICAL STARTING DOSE

200 mg

Description

Kava is a traditional Pacific Island beverage known for its calming effects. When consumed in moderation, kava may help reduce anxiety and promote relaxation.

[Kava](#) (*Piper methysticum*) is a tropical plant. An extract from the root of this plant is also simply called kava [\[R\]](#).

Kava root is an important part of South Pacific traditional medicine. **People there use it to relax an anxious mind** [\[R\]](#).

According to limited research, kava may help with [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Sleep disorders
- Mood disorders
- Drug withdrawal

How it helps

Kava contains kavapyrones which optimizes brain function thereby potentially improving memory performance. However, excessive intake can lead to health risks like liver damage.

In a [non-placebo-controlled trial of 12 healthy volunteers](#), supplementation with kava roots **slightly increased the recognition rate in a recognition memory task** [\[R\]](#).

In a [placebo-controlled trial of healthy subjects](#), a single dose of kava extract (300 mg) **increased performance at a memory recognition task** [\[R\]](#).

Note: All parts of the kava plant other than the root contain toxic chemicals that may cause severe liver damage or even death. Even well-prepared kava root may cause liver damage. Kava is also potentially addictive. For these reasons, it is illegal in many countries. Make sure to consult your doctor before taking kava [\[R\]](#), [\[R\]](#).

102



Singing

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Dedicate at least 20 minutes to singing daily, choosing songs that you enjoy and that allow for a range of vocal expressions. This practice can be done alone, with a group, or during a dedicated singing class, with consistency being key for potential health benefits.

TYPICAL STARTING DOSE

20 minutes

Description

Singing is a form of expression where you use your voice to create music. It also exercises your lungs and heart by providing a kind of workout for your respiratory system. By doing so, it improves your cardiovascular performance and overall health, reducing stress and boosting your mood.

How it helps

In a non-placebo-controlled trial of 60 adult participants, a "listen-and-sing" learning method facilitated learning an unfamiliar foreign language [\[R\]](#).

103



Chicory

IMPACT

1 / 5

EVIDENCE

1 / 5

Description

Chicory is a nutrient-rich vegetable that has been shown to have a number of health benefits. It is a good source of fiber, vitamin K, and antioxidants. Chicory may also help to improve digestion, lower blood sugar levels, and boost the immune system.

How it helps

A placebo-controlled trial of 47 healthy volunteers investigated the acute effects of oligofructose-enriched inulin (5 g) on wellbeing, mood, and cognitive performance. Inulin consumption led to increased happiness, reduced indigestion, and less hunger compared to placebo. Memory tasks showed improved accuracy and recall [\[R\]](#).

104



Avena Sativa

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 100-300 mg of avena sativa extract daily, preferably with a meal to help with absorption. This supplementation is recommended for at least a few weeks to observe benefits.

TYPICAL STARTING DOSE

100 mg

Description

Avena sativa, commonly known as oats, is a cereal grain rich in fiber and nutrients. It is often consumed as a dietary staple and is associated with potential health benefits, including heart health and digestive support.

How it helps

A single dose (800-2500 g) of green *Avena sativa* extract acutely improved delayed word recall in 3 placebo-controlled trials of 101 participants [\[R\]](#), [\[R\]](#), [\[R\]](#).

However, green *Avena sativa* extract (1500 mg/day taken for 12 weeks) failed to sustain cognitive benefits in the long term in a placebo-controlled trial of 37 older adults [\[R\]](#).

Avena sativa contains antioxidants and anti-inflammatory compounds that may improve brain function and memory performance. It does this by increasing blood flow in the brain and potentially reducing the risk of cognitive decline.

105



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 works in the brain to enhance cognition and boost memory performance by aiding the conversion of fats into energy, protecting brain cells. It also fights oxidative stress, which can harm memory functioning over time.

In a study of 60 patients receiving basic treatment for various conditions, those supplemented with L-carnitine showed significant improvements in symptoms like weakness, decreased performance, memory loss, headache, and more. There were also positive effects on cognitive performance and fatigue levels [\[R\]](#).

106



Alternate Nostril Breathing

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

10 minutes

Description

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

How it helps

In a non-placebo-controlled trial of 108 schoolchildren, practicing alternate nostril breathing for 10 days increased spatial memory scores by 84%. In another non-placebo-controlled trial (30 healthy volunteers), practicing alternate nostril breathing for 30 min improved motor memory [\[R\]](#), [\[R\]](#).

Alternate nostril breathing improves focus and reduces stress, which can help enhance memory performance. This practice enhances blood flow to the brain, directly promoting better memory function.

107



BCAAs (Branched-Chain Amino Acids)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

5 g

Description

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

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

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

How it helps

In a non-placebo-controlled trial of 12 sailors, consuming a standard diet with a BCAA supplement composed of 50% valine, 35% leucine, and 15% isoleucine reduced the detrimental effects of an offshore sailing race on short-term memory [\[R\]](#).

BCAAs may help by improving neurotransmitter (serotonin and dopamine) production and brain protein synthesis.

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

Next Steps

Remember, your genes only tell one important part of your health story!

Now that you've seen your DNA-based results for this health topic, let's take a look at other contributing factors.

Your lab results

Your lab results are impacted by the combined effect of your genes, environment and lifestyle.

Lab tests will give you the best picture of your current health status, while your genes provide insight into your health predispositions and which recommendations are best for you.

	Vitamin B12	687 pg/mL		9 Nov 2025
	Vitamin D, 25-Hydroxy, Total	58.59 ng/mL		9 Nov 2025
	Homocysteine	12.84 umol/L		9 Nov 2025