

Cognitive Function

DNA Health Report

REPORT CATEGORY —



COGNITION

Sample Client

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Personal information

NAME

Sample Client

SEX AT BIRTH

Male

HEIGHT

5ft 5" 165cm

WEIGHT

137lb 62kg

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.



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

Cognitive function refers to the brain's ability to **acquire, process, and understand information**. It enables us to think, learn and make sense of the world we live in. It is essential for everyday activities, acquiring new skills, and building relationships with others [\[R, R\]](#).

Key cognitive functions include [\[R, R\]](#):

- **Perception:** the ability to interpret information from our senses to understand the environment around us.
- **Memory:** the ability to encode, store and retrieve information.
- **Language:** the ability to communicate using the spoken or written word.
- **Attention:** the ability to focus on a task or information while ignoring distractions.
- **Executive function:** the ability to think flexibly, make decisions and solve problems.

Everyone’s brain works differently. People are often stronger in some of these functions and weaker in others [\[R\]](#).

Contributing Factors

PERSONALIZED TO GENES

Based on the variants we looked at, you are predisposed to typical cognitive function. However, education, mental stimulation, lifelong learning, physical health, social engagement, and cognitive exercises significantly impact cognitive abilities.

Some people are really good at math, but bad at memorizing facts. Others excel at learning languages, but lack spatial awareness and get easily lost. Everyone’s brain works differently.

Your strengths and your weaknesses depend on your education, your life experiences and your genes. Up to **50-80%** of differences in cognitive ability may be due to **genetics**. Genes that affect our cognitive function tend to influence **brain development, structure and function** [R, R, R, R, R].

Other factors that affect our cognitive function include [R, R, R, R, R, R]:

- Lifestyle (e.g. physical activity, sleep quality)
- Education
- Physical and mental health
- Sensory loss (e.g. vision or hearing loss)
- Aging
- Social connectedness
- Environment (e.g. air pollution)
- Being cognitively active (e.g. reading, having intellectual-stimulating jobs)

To improve cognitive function focus on:

- Staying physically active [R, R, R]
- Getting enough good quality sleep [R, R]
- Staying social (in person) [R, R, R]
- Eating a healthy, balanced diet [R, R]
- Keeping the mind active (e.g., with puzzles, games of strategy or learning new skills) [R, R, R, R]



TYPICAL

Predisposed to typical cognition based on **7,159,700** genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
SNAP25	rs363043	CC
ARMC2	rs9384679	TT
CHRM2	rs8191992	TT
MAPRE1	rs406193	CC
CABP5	rs3936340	TT
PAM	rs35658696	AA
MTHFR	rs1801133	AA
GYPC	rs1550404	TT
PRMT6	rs12125971	CC
/	rs17813294	CC
TET2	rs2454205	TT
NEGR1	rs7531118	TT
/	rs2478286	CC
SCMH1	rs12035012	AA
UBA7	rs7613360	TT
CNR1	rs1049353	TT
UBA7	rs9855505	TT
BCL2	rs956572	GG
/	rs9388349	TT
ST8SIA6	rs7897269	TT
CHRM2	rs7799047	GG
REC114	rs7171755	GA
CLSTN2	rs6439886	AA
NR2F2	rs4984541	AA
SNAP25	rs363016	TC
CHRM2	rs2350786	AA
DPP4	rs1913808	GG
ST8SIA6	rs17141089	GG
PKN2	rs17130578	GG
DPYD	rs1702294	CC
SLC10A7	rs11737630	CC
SBNO1	rs1060105	CC

GENE	SNP	GENOTYPE
PPA2	rs2726491	GA
/	rs9320747	TG
AKR1C3	rs9423406	GA
BDNF	rs6265	TC
COMT	rs4680	AG
SNAP25	rs363050	AG
SNAP25	rs363039	GA
PLXNB2	rs28379706	TC
CHRM2	rs2350780	AG
TFAM	rs1937	GC
ARVCF	rs165599	AG
SCN2A	rs10174400	TC
NEGR1	rs12128707	AG
RBM6	rs13100903	CT
/	rs12211582	TG
NR1D2	rs6550835	GA
NEGR1	rs1486091	TC
ELAVL2	rs10733389	GA

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	Cognitive Activity15 minutes
3	N-Back Training20 minutes	4	Exercise At Least One Hour a Day1 hour
5	Mediterranean Diet	6	Yoga30 minutes
7	Behavioral Sleep Extension	8	Drink at Least 8 Glasses of Water a Day
9	Social Activity1 hour	10	Bacognize (Bacopa monnieri)300 mg
11	Cognitive Training15 minutes	12	Aerobic Exercise (Cardio)1 hour
13	Avoid PBDE	14	Avoid Air Pollution
15	L-Theanine and Caffeine100 mg	16	Avoid Pesticide Exposure
17	Meditation30 minutes	18	Tai Chi1 hour
19	Dietary Omega-3 Fatty Acids	20	Strength Training1 hour
21	Dietary Iron10 mg	22	Alpha-GPC Choline300 mg
23	Mindfulness30 minutes	24	Blueberries
25	Choline Supplements425 mg	26	Grape Juice
27	Blueberry Juice	28	L-Theanine100 mg
29	American Ginseng200 mg	30	Take Naps20 minutes
31	Huperzine A50 mcg	32	Avoid Long Naps

33	Creatine	2 g	34	Avena Sativa	100 mg
35	Grape Extract	100 mg	36	Pyrroloquinoline Quinone (PQQ)	20 mg
37	Cocoa		38	Citicoline (CDP Choline)	250 mg
39	Binaural Beats	30 minutes	40	L-Tyrosine	500 mg
41	Green Tea	400 mg	42	Extra Virgin Olive Oil (EVOO)	
43	Ginkgo	120 mg	44	Pilates	30 minutes
45	Eggs		46	Pycnogenol	100 mg
47	MCT Oil		48	Lactoferrin	100 mg
49	Methylfolate	400 mcg	50	Zinc	10 mg
51	Ayurvedic Zinc	15 mg	52	Curcumin	500 mg
53	Avoid Lead Exposure		54	Resveratrol	150 mg
55	Lion's Mane	500 mg	56	Limit Manganese Exposure	
57	Goal Management Training	1 hour	58	Blueberry Supplements	500 mg
59	Avoid Cadmium Exposure		60	Turmeric	
61	Berry Polyphenols	500 mg	62	Avoid Phthalate Exposure	
63	Soy Isoflavones	40 mg	64	Fucoxanthin And Guarana	
65	Lactobacillus Helveticus	10 billion CFU	66	Avoid Organophosphate Pesticide Exposure	
67	Alpha-Linolenic Acid (ALA)		68	Chicken Liver	
69	Lemon Balm	500 mg	70	Black Seed (Black Cumin)	1000 mg
71	Krill Oil	1 g	72	Golf	

73	Transcendental Meditation	20 minutes	74	Brown Seaweed	500 mg
75	Peppermint Oil Aromatherapy	30 minutes	76	Sage Extract	300 mg
77	Tart Cherries		78	Glycine	3 g
79	Orange Juice		80	Holy Basil (Tulsi)	300 mg
81	Spearmint		82	Paraxanthine	100 mg
83	Morning Bright Light Therapy	20 minutes	84	Pickleball	
85	Hawthorn Extract and Camphor	500 mg	86	Dietary Pentadecanoic Acid	
87	Berries		88	Boswellia	350 mg
89	Black Seed Oil	2 tsp	90	Peppermint Oil	180 mg
91	Eleuthero	300 mg	92	Black Chokeberry	
93	Colostrum	20 g	94	Strawberries	
95	Magnesium	350 mg	96	Restorative Yoga	30 minutes
97	Bifidobacterium Longum	10 billion CFU	98	Sulforaphane	30 mg
99	Desert Olive Tree Pearls		100	Mangiferin	150 mg
101	Chromium	200 mcg	102	Curcumin Longvida	1 g
103	Green Coffee Extract	400 mg	104	Ashwagandha	120 mg
105	Plasmalogens		106	Neurofeedback	1 hour
107	Maintain Optimal Vitamin D Levels	1000 iu	108	Thiamine Supplements	100 mg
109	Balance And Mobility Training	30 minutes	110	Cyanidin	50 mg
111	Avoid BPA (Bisphenol A) Exposure		112	Phosphatidylserine	300 mg

113	Magnesium L-Threonate	1500 mg	114	D-Serine	
115	Avocado		116	Spearmint Oil	
117	Coffee Cherry Extract	100 mg	118	Boswellia K-Vie	300 mg
119	Green Tea Extract	250 mg	120	Low-Glutamate Diet	
121	B Vitamins		122	Avoid Mercury Exposure	
123	Hydroxytyrosol	5 mg	124	Fucoxanthin	3 mg
125	Theacrine		126	Wasabi	500 mg
127	Dietary Selenium		128	Inosine	
129	Hawthorn Extract		130	Alpha-Ketoglutarate (AKG)	1 g
131	Glutamine	5 g	132	Topical Camphor	
133	Airway Muscle Training	30 minutes	134	L-Pyroglutamic Acid	600 mg
135	Agmatine	1 g			

How to implement

Description

How it helps



PERSONALIZED TO YOUR GENES

People with your [DRD2](#) gene variant may be more prone to cognitive issues due to sleep deprivation [\[R\]](#).
People with your [TNF](#) gene variant may be more prone to cognitive issues due to sleep deprivation [\[R\]](#).
Sleep loss may have a stronger impact on cognition in people with your [COMT](#) gene variant [\[R\]](#), [\[R\]](#).

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
DRD2	rs6277	GG	
TNF	rs1800629	GG	
COMT	rs4680	AG	

2



Cognitive Activity

IMPACT

4 / 5

EVIDENCE

4 / 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

Training on **working memory** can moderately improve this aspect of cognitive function in both healthy adults and children with learning disabilities [\[R\]](#), [\[R\]](#).

Cognitive training for preventing **age-related cognitive decline** may modestly improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Memory performance
- Executive functioning
- Processing speed
- Attention
- Fluid intelligence
- Subjective cognitive performance

Keeping your brain active may boost cognitive function. The following activities may boost cognition and reduce the risk of cognitive decline [\[R\]](#):

- Playing an instrument [\[R\]](#), [\[R\]](#), [\[R\]](#)
- Playing games and puzzles [\[R\]](#)
- Performing mental work [\[R\]](#)
- Reading books
- Staying socially active [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#)

The **combination of cognitive training and exercise** may be particularly beneficial for cognition in the elderly [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

3



N-Back Training

IMPACT

4 / 5

EVIDENCE

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

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

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

Exercise may improve areas of cognitive function such as [\[R, R, R, R, R\]](#):

- Attention
- Processing speed
- Executive function
- Memory
- Cognitive flexibility

Helpful types of exercise include [\[R, R, R, R, R, R\]](#):

- Cardio
- High-intensity training
- Strength training

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

5



Mediterranean Diet

IMPACT3 / 5

EVIDENCE3 / 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

People who follow the [Mediterranean diet](#) may have better cognitive function in areas such as [\[R, R, R, R, R, R\]](#):

- Memory
- Executive function
- Processing speed
- Global cognition

Moreover, this diet is linked to lower rates of cognitive decline and dementia [\[R, R, R\]](#).

6



Yoga

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

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

TYPICAL STARTING DOSE

30 minutes

Description

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

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

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

How it helps

[Yoga](#) may improve cognitive functions such as [\[R, R, R, R, R, R\]](#):

- Memory
- Attention
- Concentration
- Learning

Some studies combined it with other relaxation techniques or cognitive training [\[R, R, R, R\]](#).

Yoga (4-12 weeks) may also enhance different aspects of cognition in **older people**. However, one study didn't find this benefit [\[R, R, R, R, R, R\]](#).

7



Behavioral Sleep Extension

IMPACT3 / 5

EVIDENCE3 / 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 involves increasing sleep duration, which can significantly improve cognitive performance, enhancing factors like memory, attention, and decision-making. Adequate sleep is crucial for the proper functioning and rejuvenation of the brain.

In multiple non-placebo-controlled trials, sleep extension showed positive effects on cognition. Sleep restriction increased inattentive and oppositional symptoms in 72 adolescents, while extension reduced them. Among 25 rugby players, a 6-week sleep extension program decreased reaction time by 4.3%. In 55 adolescents with chronic short sleep, a sleep extension program improved visuospatial processing.In 24 adolescents with chronic short sleep, a 5-week intervention enhanced sluggish cognitive tempo and driving performance. A study with 15 students found that sleep extension improved daytime alertness, reaction time, and mood. In 34 children, increasing sleep duration by about 27 minutes improved alertness and emotional regulation. In 50 tactical athletes, 4 nights of sleep extension improved reaction time, psychomotor vigilance, and executive function. In 121 short-sleeping obese participants, sleep extension enhanced global cognitive function by 7%, attention by 10%, memory, and executive function. A trial of 14 healthy men showed that 6 nights of sleep extension improved sustained attention and prevented lapses in psychomotor vigilance tasks. However, a study of 12 participants only found increased frontal cerebral oxygenation during cognitive functioning from sleep extension [[R](#), [R](#), [R](#), [R](#), [R](#), [R](#), [R](#), [R](#), [R](#), [R](#)].

8



Drink at Least 8 Glasses of Water a Day

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

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

Description

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

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

Water helps maintain [\[R\]](#):

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

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

How it helps

A meta-analysis of 33 studies and 413 participants concluded that dehydration exceeding 2% impairs cognitive performance, particularly for tasks involving attention, executive function, and motor coordination [\[R\]](#).

Staying hydrated improves brain function and concentration. Dehydration can negatively affect memory, attention, and other cognitive functions.

9



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

Keeping your brain active helps maintain cognitive function [\[R\]](#).

Staying socially active is a great way to engage your brain. It may boost cognition and lower the risk of cognitive decline [\[R, R, R, R\]](#).

Ways to maintain your social activity include:

- Spending time with your friends and family
- Sharing your hobbies with others
- Traveling
- Volunteering and activism
- Choosing physical activities in groups

10



Bacognize (Bacopa monnieri)

IMPACT3 / 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](#) supplementation (300-640 mg/day for 1-3 months) may improve cognitive functions like memory, attention, and processing speed. However, one study didn't find these benefits [\[R, R, R, R, R, R, R, R, R, R, R\]](#).

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 on **working memory** can moderately improve this aspect of cognitive function in both healthy adults and children with learning disabilities [\[R\]](#), [\[R\]](#).

Cognitive training for preventing **age-related cognitive decline** may modestly improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Memory performance
- Executive functioning
- Processing speed
- Attention
- Fluid intelligence
- Subjective cognitive performance

12



Aerobic Exercise (Cardio)

IMPACT

3 / 5

EVIDENCE

3 / 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](#)].

Cardio may improve areas of cognitive function such as [[R](#), [R](#)]:

- Attention
- Processing speed
- Executive function
- Memory

13



Avoid PBDE

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

To avoid PBDEs, replace old furniture that might contain these chemicals, vacuum and dust your home regularly to reduce dust particles that might contain PBDEs, and use products labeled as PBDE-free. Ensure you check labels on electronics, furnishings, and textiles for mention of being PBDE-free.

Description

Polybrominated Diphenyl Ethers (PBDEs) are commonly found in flame retardants used in household items. These chemicals are linked to health issues like hormone disruption and neurodevelopmental problems. Opt for PBDE-free products, improve ventilation, and frequently clean to minimize dust, which can contain PBDE particles, promoting a healthier living environment.

How it helps

PBDEs (polybrominated diphenyl ethers) are chemicals that can potentially disrupt your brain function. Avoiding them may help maintain your cognitive health by reducing your exposure to these harmful substances.

A [meta-analysis of 15 studies](#) associated a **10-fold increase in PBDE exposure with a decrement of 3.70 IQ points in children** [\[R\]](#).

Similarly, a [meta-analysis of 16 studies](#) found an **inverse association** between maternal PBDE exposure and neurodevelopment [\[R\]](#).

14



Avoid Air Pollution

IMPACT3 / 5

EVIDENCE2 / 5

How to implement

Stay indoors on days when air quality indexes (AQI) indicate high pollution levels, which are often reported by weather services or government environmental agencies. **Install air purifiers** in your home, especially in bedrooms, to reduce indoor pollutants. Limit outdoor exercise when air pollution warnings are issued, opting for indoor activities instead.

Description

Avoiding air pollution by reducing exposure to pollutants in the environment is essential for respiratory and overall health. It can help lower the risk of respiratory diseases, cardiovascular conditions, and other health issues associated with poor air quality.

While city life is convenient in a lot of ways, it comes with some health hazards. Cars, factories, and other sources increase air [pollution](#) [\[R\]](#).

Air pollution plays a role in [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Lung disease
- Heart disease
- Diabetes
- Asthma
- Skin conditions

How it helps

A meta-analysis of 10 studies found significant associations between air pollution and decreased volumes, cortical thickness, and surface area of specific brain structures such as in the prefrontal cortex and temporal lobe, as well as reduced connectivity. Air pollution had negative effects on cognitive outcomes, particularly in problem solving and executive function [\[R\]](#).

 PERSONALIZED TO YOUR GENES

Traffic-related air pollution may impair cognitive function more in people with your [HFE](#) gene variant [\[R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
HFE	rs1800562	GG	

15



L-Theanine and Caffeine

IMPACT2 / 5

EVIDENCE3 / 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

A combination of two tea components, [L-theanine](#) (50-200 mg) and [caffeine](#) (40-160 mg), may improve cognitive performance, attention switching, and alertness [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

16



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 enhance cognition as some pesticides have neurotoxic effects, impairing mental and cognitive functions. By avoiding them, we protect our nervous system and promote better cognitive health.

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 [\[R\]](#).

17



Meditation

IMPACT

2 / 5

EVIDENCE

3 / 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

Meditation may slightly improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Attention
- Processing speed
- Working memory
- Executive function

It may also support cognition and reduce cognitive decline in older people [\[R\]](#), [\[R\]](#), [\[R\]](#).

18



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

A meta-analysis of 33 trials found that tai chi may improve cognitive aspects such as memory and executive function in healthy middle-aged adults, college students, and older adults with mild cognitive decline [\[R\]](#).

In healthy, older adults, tai chi may improve executive function, memory, attention, and processing speed according to several meta-analyses. Tai chi may be more beneficial in combination with cognitive training [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

A meta-analysis found beneficial effects of tai chi on cognitive aspects such as executive function, episodic memory, visuospatial function, and global cognition in older people with mild cognitive decline [\[R\]](#), [R](#), [R](#).

Tai chi may also improve cognitive function in people with dementia according to a meta-analysis of 7 studies [\[R\]](#).

Tai chi may help by reducing stress and enhancing mental focus.

19



Dietary Omega-3 Fatty Acids

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

Incorporate foods high in omega-3 fatty acids into your diet daily. This includes eating fish such as salmon, mackerel, and sardines at least twice a week. Alternatively, include a tablespoon of flaxseed oil or chia seeds in your daily diet.

Description

[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. **EPA and DHA are vital for mental and heart health** [\[R\]](#), [\[R\]](#), [\[R\]](#).

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

- Salmon
- Tuna
- Herring
- Sardines

For optimal health, 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

A meta-analysis of studies 34 studies found that omega-3 fatty acids improve cognitive development in infants but fail to improve cognition in children and adults. Another meta-analysis (29 studies) found beneficial effects of EPA but not DHA on long-term memory, working memory, and problem solving in youths. The effects may depend on baseline omega-3 levels with middle-aged and older adults who are deficient benefiting the most from supplementation [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Consuming fatty fish (up to 2x/week) may reduce the risk of cognitive decline according to several meta-analyses. In people with this condition, dietary omega-3s may improve cognitive aspects such as attention and processing speed. Although the effects and dose are less clear, omega-3s may also help prevent Alzheimer's disease and dementia [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Omega-3 fatty acids may help by aiding in the maintenance of cell membrane integrity.

20

Strength Training

IMPACT2 / 5

EVIDENCE3 / 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

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].

Strength training may improve areas of cognitive function such as [R, R, R]:

- Executive function
- Inhibitory control
- Cognitive flexibility

21



Dietary Iron

IMPACT

2 / 5

EVIDENCE

3 / 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.

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 [\[R\]](#):

- Menstruating women
- Children
- Vegetarians
- Routine blood donors

How it helps

Adolescents and young women are at particularly high risk of [iron](#) deficiency associated with cognitive decline. Supplementation with iron (50-1,300 mg/day) or eating iron-enriched foods for 8-24 weeks may improve iron deficiency and cognitive function like [\[R, R, R, R, R, R, R, R\]](#):

- Memory
- Attention
- Verbal learning

22



Alpha-GPC Choline

IMPACT2 / 5

EVIDENCE3 / 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 acts as a precursor to the neurotransmitter acetylcholine, promoting healthy brain cell function and communication. It may improve cognitive function, memory, and learning capabilities.

Choline alphoscerate (alpha-GPC) combined with donepezil may improve cognition, functional outcomes, and behavioral outcomes in adult-onset dementia disorders with cerebrovascular involvement, based on a systematic review and meta-analysis of 7 RCTs and 1 prospective cohort study [MD: 1.72, 0.79, -7.61 respectively] [\[R\]](#).

In an open RCT involving 60 Parkinson's disease patients with cognitive disorders, IV alpha-GPC (1,000 mg/day for 10 days) alongside antiparkinsonian medications led to a moderate improvement in cognitive functions (40%) compared to control (25%). Cognitive deterioration occurred less frequently in the main group (5%) than the control group (15%) [\[R\]](#).

23

Mindfulness

IMPACT

2 / 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 encourages mental focus and stress reduction which can improve cognitive abilities like memory, attention, and processing speed. Immersing in the present moment, it helps to clear away the clutter in your mind and enhances your cognitive performance.

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].



PERSONALIZED TO YOUR GENES

Carriers of your **ANKK1** gene variant may see greater improvements in cognition, especially in planning and global cognition, from mindfulness-based stress reduction [R].

Carriers of your **APOE** gene variant may see greater improvements in visuospatial cognition from mindfulness-based stress reduction [R].

Carriers of your **SLC6A4** gene variant may see greater improvements in cognition, especially in memory, organization, and global cognition, from mindfulness-based stress reduction [R].

YOUR GENETIC VARIANTS

GENE	SNP	GENOTYPE	EVIDENCE
ANKK1	rs1800497	GA	
APOE	rs429358	TT	
SLC6A4	rs16965628	GG	

24



Blueberries



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

Freeze-dried blueberries (15-30 g/day) may enhance cognition in older people and children [R, R, R].

25



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 who consume more [choline](#) may have higher cognitive performance [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Food sources of choline include beef liver, eggs, soybeans, chicken, fish (especially codfish), shiitake mushrooms, red potatoes, and kidney beans [\[R\]](#), [\[R\]](#), [\[R\]](#).

On the other hand, the effects of choline supplementation on cognition are mixed. The benefits may be limited to people with low baseline performance [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

26



Grape Juice

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

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

Description

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

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

How it helps

Drinking grape juice (230-355 mL/day) may improve reaction time and memory in healthy people [\[R\]](#), [\[R\]](#).

In older people with mild cognitive decline, drinking grape juice (450-620 mL/day for 3-6 months) may improve verbal learning and memory and reduce cognitive decline [\[R\]](#), [\[R\]](#).

27



Blueberry Juice

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Drink 8 to 12 ounces of blueberry juice, preferably made from 100% pure blueberries without added sugars, once daily, ideally in the morning or during breakfast for best absorption and benefits.

Description

Blueberry juice offers similar health benefits to whole blueberries, providing a concentrated source of antioxidants and vitamins.

Made from the juice of blueberries. [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

[Blueberry](#) juice (500 mL/day) or concentrate (30 mL/day) may improve working memory, verbal learning, and task switching [\[R, R\]](#).

It may also enhance cognition in [\[R, R, R, R\]](#):

- Older people
- Children
- Those recovering from anesthesia

28



L-Theanine

IMPACT

2 / 5

EVIDENCE

2 / 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

Taking [L-theanine](#) (200 mg/day for 4 weeks) may improve verbal fluency and executive function. A single 100-mg dose may enhance attention as effectively as caffeine (50 mg) [\[R\]](#), [\[R\]](#).

L-theanine may also support cognitive function when combined with other beneficial ingredients, especially caffeine [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

29



American Ginseng

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

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

TYPICAL STARTING DOSE

200 mg

Description

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

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

- Sexual function
- Immunity
- Fatigue
- Attention

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

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

How it helps

In [3 placebo-controlled trials of 145 healthy participants](#), supplementation with American ginseng extract (100-400 mg) **improved working memory, attention, choice reaction time, mental fatigue, and calmness** [\[R\]](#), [\[R\]](#), [\[R\]](#).

A multi-ingredient supplement with American ginseng, bacopa, and whole coffee fruit extract **improved working memory and prefrontal cortex activation during a working memory task** in a [placebo-controlled trial of 40 healthy adults](#) [\[R\]](#).

American ginseng extract taken for 4 weeks also **improved working memory** in a [placebo-controlled trial of 64 patients with schizophrenia](#) [\[R\]](#).

30



Take Naps

IMPACT2 / 5

EVIDENCE2 / 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

Napping between 12:30 and 16:50 after a full night's sleep improved cognitive and physical performance and reduced fatigue, especially with 30-60 minute naps and a gap of over an hour before testing [\[R\]](#).

Taking naps can restore alertness and enhance performance, which can significantly benefit cognitive functions like memory, reasoning, and learning.

31



Huperzine A

IMPACT

2 / 5

EVIDENCE

2 / 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

Huperzine A may enhance cognition in depressed people [R].

Based on a single study, huperzine A (100 µg/day for 4 weeks) may enhance memory and learning in students [R].

32



Avoid Long Naps

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Limit your daily naps to 20-30 minutes. Try to nap before 3 pm to avoid interfering with nighttime sleep.

Description

Limiting long naps during the day can help improve nighttime sleep quality and reduce the risk of sleep disturbances. Shorter naps are generally more beneficial for enhancing daytime alertness without interfering with nighttime rest.

How it helps

Napping between 12:30 and 16:50 after a full night's sleep improved cognitive and physical performance and reduced fatigue, especially with 30-60 minute naps and a gap of over an hour before testing [R].

33



Creatine

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

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

TYPICAL STARTING DOSE

2 g

Description

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

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

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

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

- Red meat
- Seafood
- Supplements

How it helps

Supplementation with [creatine](#) (5-20 g/day for 5-42 days) may improve working memory and executive function while reducing mental fatigue during [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Cognitive-demanding tasks
- Sleep deprivation
- Oxygen deprivation

However, some studies didn’t find these benefits [\[R\]](#), [\[R\]](#).

34



Avena Sativa

IMPACT

2 / 5

EVIDENCE

2 / 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

Green *Avena sativa* extract acutely improved cognitive performance, including speed, working memory, attention, and concentration, in three placebo-controlled trials. A separate trial found that supplementation with *Avena sativa* extract improved working memory and multitasking in healthy volunteers. However, sustained cognitive benefits were not observed in a long-term study with older adults [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Avena sativa, commonly known as oats, can support brain health and improve cognitive function. It may help increase cerebral blood flow, thereby enhancing memory, attention, and mental flexibility.

35



Grape Extract

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take a grape extract supplement in capsule or tablet form, typically ranging from 100 to 400 mg per day. It's best to follow the manufacturer's dosage instructions on the label or consult a healthcare professional for personalized advice. Consume the supplement with water, preferably with a meal to enhance absorption, and continue daily for at least three months to assess benefits.

TYPICAL STARTING DOSE

100 mg

Description

Grapes are a berry from the various *vitis* species, a flowering, woody vine. They are a rich vitamin and mineral source, as well as providing flavonoids and polyphenols with antioxidant, anti-inflammatory, and antimicrobial health benefits.

Grapes are a berry from the various *vitis* species, a flowering, woody vine. They are a rich vitamin and mineral source, as well as providing flavonoids and polyphenols with antioxidant, anti-inflammatory, and antimicrobial health benefits. The composition of these nutrients varies with the variety of grape [\[R\]](#).

How it helps

In older people, taking grape extract (250 mg/day for 3 months) may improve [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Attention
- Language skills
- Memory
- Cognitive decline

36



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, verbal memory, cognitive flexibility, processing speed, reaction time, complex attention, and execution speed. 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 [\[R\]](#), [\[R\]](#), [\[R\]](#).

Pyrroloquinoline quinone (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.

37



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

Eating cocoa (providing 375-995 mg flavonols) may improve memory and focus while reducing cognitive decline. However, dark chocolate may not provide cognitive benefits [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

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

- Increasing blood flow in the brain
- Boosting [BDNF](#)
- Reducing oxidative stress

 PERSONALIZED TO YOUR GENES

Your [BDNF](#) gene variant is linked to lower BDNF levels and poorer cognitive performance. Cocoa flavanols may enhance cognitive performance by boosting BDNF [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
BDNF	rs6265	TC	

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Citicoline (CDP Choline)

IMPACT

2 / 5

EVIDENCE

2 / 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

[Citicoline](#) supplementation (250-1,000 mg/day for 28 days) may improve a range of cognitive functions. However, one study only found this benefit in low cognitive performers [R, R, R].

In older people with memory impairment, citicoline (1,000 mg/day for 3 months followed by 2,000 mg/day for 2 months) may enhance memory memory [R].

39



Binaural Beats

IMPACT2 / 5

EVIDENCE2 / 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 studies exploring the effects of binaural beats and sensory interventions, findings revealed cognitive benefits. In a non-placebo-controlled trial with 25 healthy adults, a 20-minute combination of mechanical massage and binaural beats reduced mental fatigue compared to rest or massage alone and enhanced attention, verbal short-term and long-term memory, as well as non-verbal long-term memory. Another trial with 58 healthy volunteers demonstrated that 40 Hz binaural beats enhanced long-term memory. Furthermore, a placebo-controlled trial involving 31 healthy participants found that listening to 8-minute sessions of 10 Hz, 16 Hz, and 40 Hz binaural beats improved visuospatial working memory [\[R, R, R\]](#).

Binaural beats can enhance cognition by promoting a brainwave state conducive to learning, focus, and memory. They work by sending slightly different frequencies to each ear, which combine in the brain to create a targeted brainwave state.

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L-Tyrosine

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Take 500-2000 mg of L-Tyrosine supplement daily, preferably 30 minutes before meals or snacks. This can be taken in one dose or divided into two doses throughout the day. Continue this supplementation daily for a duration of at least a few weeks to assess its effects on your body.

TYPICAL STARTING DOSE
500 mg

Description

L-tyrosine is an amino acid used by the body to produce important neurotransmitters and hormones. It may help improve cognitive function, stress response, and overall mood regulation.

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

[L-tyrosine](#) loading – short bouts of higher doses (0.5-2 g) – may enhance cognition in stressful and demanding situations [\[R\]](#).

Examples include:

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

However, one study found negative effects of L-tyrosine during a demanding cognitive task [\[R\]](#).

Also, it may not provide benefits or may even worsen cognition under normal conditions in older people [\[R, R\]](#).

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.

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Green Tea

IMPACT

2 / 5

EVIDENCE

2 / 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

In a placebo-controlled trial of 12 healthy volunteers, green tea extract (250-500 mL) improved brain activity in a key region to working memory processing (dorsolateral prefrontal cortex). Green tea increased brain activity (especially theta waves) in a non-placebo-controlled trial of 8 healthy volunteers, suggesting its potential to improve alertness and attention [\[R\]](#), [\[R\]](#).

In a placebo-controlled trial 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. Green tea’s component epigallocatechin gallate improved visual recognition memory, working memory, inhibitory control, and adaptive behavior in 2 clinical trials of over 100 people with Down’s syndrome [\[R\]](#), [\[R\]](#), [\[R\]](#).

Green tea is rich in antioxidant compounds that may reduce damage to brain cells.

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 [\[R\]](#).

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Extra Virgin Olive Oil (EVOO)

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Incorporate 1-2 tablespoons of extra virgin olive oil into your daily diet. Use it as a dressing for salads, vegetables, or incorporate it into cooking, but avoid using it at high temperatures to preserve its health benefits.

Description

Extra virgin olive oil is a high-quality olive oil obtained from the first pressing of olives. It is rich in monounsaturated fats and antioxidants, like polyphenols, and is associated with various health benefits, including heart health and anti-inflammatory properties.

[Olive oil](#) is fat from the olive, a traditional tree of the Mediterranean Basin [\[R\]](#).

Olive oil has anti-inflammatory and antioxidant properties. It may also reduce the risk of [\[R\]](#), [\[R\]](#):

- Heart disease
- Diabetes
- Cancer

Olive oil is also the primary fat source in the [Mediterranean diet](#), which may improve brain and heart health [\[R\]](#).

How it helps

Extra Virgin Olive Oil (EVOO) is rich in antioxidants, which defend your brain from damage and inflammation, hence promoting cognition. Regular consumption, as part of a balanced diet, can protect neural tissues, enhance memory and learning, thus potentially halting cognitive decline.

In a [non-placebo-controlled trial of 180 elderly participants eating a Mediterranean diet](#), adding more EVOO (20-30 g/day) caused a **short-term improvement in cognitive scores** [\[R\]](#).

In a [non-placebo-controlled trial of 285 participants](#), consuming a Mediterranean diet with EVOO (1 L/week) for 6.5 years **reduced the rates of mild cognitive impairment to one-third** [\[R\]](#).

In a [placebo-controlled trial of 26 patients with mild cognitive impairment](#), consuming EVOO (30 mL/day) for 6 months **improved clinical dementia rating, behavioral scores, blood-brain barrier function, and functional connectivity** [\[R\]](#).

In a [non-placebo-controlled trial of 60 patients with mild cognitive impairment](#), consuming high- or medium-polyphenol EVOO (50 mL/day) as an add-on to a Mediterranean diet **improved cognitive function better than the Mediterranean diet alone**. Olive oil was **also beneficial in those with the APOE e4 allele** [\[R\]](#).

43



Ginkgo

IMPACT

2 / 5

EVIDENCE

2 / 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

Taking [ginkgo](#) extract (80-240 mg/day for up to 8 months) may improve, [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Memory
- Pattern recognition
- Executive function
- Processing speed

However, some studies only found the benefits of taking a single does, meaning that people tend to develop tolerance. Some studies in older people found no cognitive improvements at all [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

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Pilates

IMPACT

2 / 5

EVIDENCE

2 / 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 110 older women, undergoing a 12-week Pilates program improved global cognitive function, executive function, and verbal fluency. In a non-placebo-controlled trial of 28 older women with mild cognitive impairment, Pilates training for 8 weeks was as effective as core strength training at improving global and specific cognitive domains. Both Pilates and aerobic exercise were similarly effective at improving selective attention, verbal fluency, and executive control in the short term in a non-placebo-controlled trial of 52 physically inactive volunteers. 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, visuospatial memory, verbal fluency, and information processing speed [[R](#), [R](#), [R](#), [R](#)].

Pilates stimulates brain cells, helping to enhance cognitive function by improving attention, memory, and problem-solving skills. It also helps manage stress and anxiety levels, which have a direct impact on cognitive health.

45



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

People who consume more [choline](#) may have higher cognitive performance [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Eggs are a good source of choline. In a placebo-controlled trial of 41 middle-aged volunteers, consuming egg yolk choline (300 mg/day for 12 weeks) improved verbal memory [\[R\]](#).

A study of 2497 men associated high dietary intake of phosphatidylcholine (found in eggs) with lower rates of dementia [\[R\]](#).

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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 2-12 months) may slightly improve attention, memory, and executive function. It may help in healthy people and those with mild cognitive impairment [\[R, R, R, R, R\]](#).

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

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MCT Oil

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

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

Description

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

How it helps

MCT oil provides the brain with a direct source of energy in the form of ketones, which could help enhance cognitive function. It may improve memory and overall brain health, especially in relation to conditions like Alzheimer's disease.

10 studies met the inclusion criteria. Meta-analysis showed cognitive improvements in general, but not in memory, language, and attention domains after oral MCT administration, compared to placebo. The effect of MCT was greater among APOEε4 (-) subjects than APOEε4 (+) subjects [R].

In a study involving 20 healthy elderly participants, ingestion of medium-chain triglycerides (MCTs) improved cognitive performance, particularly in those with reduced grey matter in the prefrontal cortex. Functional MRI showed reduced brain activity, suggesting the use of ketone bodies as an additional energy source during cognitive tasks [R].

 PERSONALIZED TO YOUR GENES

People with your **APOE** gene variant (ε3) may experience greater cognitive benefits from MCT oil supplementation [R].

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
APOE	rs429358	TT	

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Lactoferrin

IMPACT2 / 5

EVIDENCE1 / 5

How to implement

Take 100-200 mg of lactoferrin supplement per day, preferably on an empty stomach to enhance its absorption. Continue this regimen daily for 8 to 12 weeks to observe beneficial effects.

TYPICAL STARTING DOSE
100 mg

Description

Lactoferrin is a protein found in milk and other bodily fluids that has been studied for its potential health benefits, including immune system support and antimicrobial properties. It plays a role in promoting gut health.

Lactoferrin is a protein found in milk. It can bind to iron and travel all around the body [R].

Lactoferrin may help support [R, R]:

- Immunity
- Iron status

How it helps

Lactoferrin, a protein found naturally in our bodies, is thought to have a protective effect on the brain by reducing inflammation and promoting the growth of new brain cells, which can improve cognitive abilities and memory. Regular consumption of Lactoferrin supplements, therefore, might contribute to better brain health and cognitive functioning.

In a randomized pilot study in 50 people with Alzheimer's disease lactoferrin (250 mg/day for 3 months) increased **serum acetylcholine (ACh), serotonin (5-HT), antioxidant and anti-inflammatory markers, and expression of Akt in peripheral blood lymphocytes (PBL), as well as PI3K, and p-Akt levels in PBL lysate.** It also reduced **serum amyloid β (A β) 42, cholesterol, oxidative stress markers, IL-6, heat shock protein (HSP) 90, caspase-3, and p-tau, expression of tau, MAPK1, and PTEN.** Additionally, it enhanced **cognitive function** [R].

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Methylfolate

IMPACT

2 / 5

EVIDENCE

1 / 5

How to implement

Take an L-methyl folate supplement (400-800 micrograms daily), ideally with a meal, to improve absorption. This dosage is recommended for adults, including pregnant women, to support overall health, especially to reduce the risk of neural tube defects in developing fetuses. Continue daily use as part of your regular supplement routine.

TYPICAL STARTING DOSE
400 mcg

Description

Folate, a B-vitamin, is crucial for DNA synthesis, cell growth, and the formation of red blood cells. Adequate folate intake supports overall health and reduces the risk of neural tube defects during pregnancy.

[Vitamin B9](#) (*folate*) plays an essential role in [\[R, R, R\]](#):

- Making DNA
- Metabolism
- Energy production

SelfDecode recommends L-methylfolate as the preferred folate supplement for those who need one. It is superior to folic acid because it doesn't require activation, but the research is still ongoing [\[R, R\]](#).

How it helps

Both low and high folate levels may be associated with lower cognitive function. Supplementation may improve cognition [\[R, R, R\]](#).

50



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 nerve signaling and brain function, which affects memory and cognition. So, by taking a Zinc supplement, it may aid in improving cognitive functioning if you are deficient.

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 [\[R\]](#).

51



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

Zinc plays a key role in neurotransmission which impacts brain functions like learning and memory, thus potentially improving cognition. Deficiency of zinc can lead to cognitive impairments, so an Ayurvedic zinc supplement could help replenish zinc levels and potentially enhance cognitive performance.

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 [\[R\]](#).

52



Curcumin

IMPACT

1 / 5

EVIDENCE

3 / 5

How to implement

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

TYPICAL STARTING DOSE
500 mg

Description

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

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

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

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

How it helps

In older people, [curcumin](#) supplementation (90-1500 mg/day for up to 12 months) may moderately improve [R, R, R, R, R]:

- Working memory
- Attention
- Cognitive decline

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].

53



Avoid Lead Exposure

IMPACT1 / 5

EVIDENCE2 / 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

Epidemiological research highlights associations between lead exposure and cognitive decline. A study involving 1,833 participants found negative correlations between blood lead and cognitive function. Another review of 12 studies suggests occupational lead exposure correlates with neurological damage, affecting memory, reaction time, intelligence, and mood. High lead levels increased cognitive risk in specific groups. A meta-analysis of 22 studies underscores cognitive impairment among lead-exposed individuals, especially in verbal abilities, memory, and attention. However, neurobehavioral test performance wasn't significantly linked to lead levels except in occupational exposures [\[R, R, R, R, R, R\]](#).

54



Resveratrol

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

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

TYPICAL STARTING DOSE
150 mg

Description

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

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

- Berries
- Red grapes
- Red wine
- Peanuts

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

How it helps

Supplementation with [resveratrol](#) (150-1000 mg/day for 3-6 months) may slightly improve some cognitive function [\[R, R, R, R\]](#).

Taking a single dose of resveratrol (250-500 mg) **may not** provide the same benefit [\[R, R, R\]](#).

55



Lion's Mane

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Take a Lion's Mane supplement of 500-1000 mg daily, usually in capsule or powder form. It can be taken with or without food, but if you experience any digestive upset, take it with meals. Continue this regimen for at least 4 weeks to evaluate its benefits.

TYPICAL STARTING DOSE

500 mg

Description

Lion's Mane mushroom contains compounds that may support cognitive function and nerve health. It's been studied for its potential to enhance memory and focus, making it a popular choice for brain health supplements.

[Lion's mane](#) (*Hericium erinaceus*), also known as yamabushitake or houtou, is an edible mushroom that looks like a white pompom. It has been used in traditional Chinese and Japanese medicine for centuries. People also consume it as a **meat substitute**, as it has a similar texture to crab meat when cooked [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#). Lion's mane may have health benefits as [\[R\]](#):

- Anti-inflammatory
- Antioxidant
- Immune-booster

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

- Cognitive function
- Anxiety
- Depression

How it helps

In a placebo-controlled trial of 34 healthy volunteers, supplementation with lion's mane for 12 weeks improved cognitive function. A single dose improved speed of performance in a placebo-controlled trial of 141 participants. Lion's mane extract acutely improved working memory, complex attention, and reaction time in a placebo-controlled trial of 40 participants [\[R\]](#), [\[R\]](#), [\[R\]](#).

In a placebo-controlled trial of 30 participants with mild cognitive decline, supplementation with lion's mane powder (250 mg, 4x/day for 16 weeks) improved cognitive function [\[R\]](#).

Lion's mane may help by supporting nerve growth [\[R\]](#).

Please note: *Lion's mane may interact with blood thinners such as warfarin (Coumadin). If you are taking blood thinners, consult your doctor before consuming lion's mane* [\[R\]](#).

56



Limit Manganese Exposure

IMPACT

1 / 5

EVIDENCE

2 / 5

How to implement

Avoid consuming water with high levels of manganese by using filters certified to remove it, especially if your water comes from a well. Limit the intake of dietary supplements containing manganese unless prescribed, and use personal protective equipment if you work in industries with manganese exposure, such as welding or mining.

Description

Limiting excessive manganese exposure, whether through water, food, or environmental sources, helps prevent potential neurological and cognitive health issues. Maintaining a balanced manganese intake supports long-term well-being.

[Manganese](#) (Mn) is an essential trace mineral, which means we need it in very small amounts. It helps support metabolism, antioxidant protection, immunity, and more [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

People are more likely to have excess manganese than to be [deficient](#). The safe upper limit for manganese intake is **11 mg** per day [\[R\]](#), [\[R\]](#).

Occupational exposure to manganese is a potential concern for miners, welders, battery manufacturers, mechanics, and people dealing with pesticides [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

[Manganese toxicity](#) damages the nerves. In some cases, it can result in *manganism*, which has symptoms similar to Parkinson’s disease [\[R\]](#).

How it helps

Adult human epidemiologic studies have consistently shown lead, cadmium, and manganese are associated with impaired cognitive function and cognitive decline, according to a review. A study of 1,833 participants associated high blood lead and cadmium with impaired cognitive performance in older people [\[R\]](#), [\[R\]](#).

Excessive manganese can negatively affect the nervous system, causing symptoms like memory loss and decreased intellectual function.

How to implement

TYPICAL STARTING DOSE

1 hour

Description

How it helps

Goal management training helps improve task performance and cognitive flexibility, which supports better executive functioning.

How to implement

TYPICAL STARTING DOSE

500 mg

Description

[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

In addition to eating the fruits, people can take different blueberry supplements, such as **blueberry powder or extract**.

How it helps

Blueberry concentrate (30 mL/day) and extract (100 mg/day) may improve working memory, verbal learning, and task switching [R, R].

They may help by boosting blood flow in several brain regions and reducing oxidative stress [R, R].

59



Avoid Cadmium Exposure

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

To avoid cadmium exposure, refrain from smoking or exposure to secondhand smoke, reduce consumption of foods high in cadmium like shellfish, liver, kidney meats, and certain leafy vegetables, and use ceramic or glass containers instead of plastic when microwaving food. Limit intake of cadmium-contaminated workplace air by using protective gear if you work in battery manufacturing, welding, or metal refining industries.

Description

Avoiding cadmium exposure is essential to prevent potential health risks associated with this heavy metal, such as kidney damage and increased cancer risk. Reducing exposure to cadmium-containing products and contaminated foods is crucial.

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

Adult human epidemiologic studies have consistently shown lead, cadmium, and manganese are associated with impaired cognitive function and cognitive decline, according to a review. A study of 1,833 participants associated high blood lead and cadmium with impaired cognitive performance in older people [\[R, R\]](#).

Cadmium may impair brain functions by causing oxidative stress and inflammation in brain tissues.

60



Turmeric

IMPACT

1 / 5

EVIDENCE

2 / 5

How to implement

Incorporate 500-1000 mg of turmeric into your daily diet, either by adding ground turmeric spice to your food, such as in curries, soups, and smoothies, or by taking a dietary turmeric supplement. This should be done daily for at least 8 weeks to observe potential health benefits.

Description

Turmeric is a bright yellow spice derived from the root of the *Curcuma longa* plant. It contains curcumin, a potent antioxidant and anti-inflammatory compound. Turmeric is used for various health conditions, including reducing inflammation, alleviating joint pain, and supporting digestive health.

How it helps

In older people, [curcumin](#) supplementation (90-1500 mg/day for up to 12 months) may moderately improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Working memory
- Attention
- Cognitive decline

61



Berry Polyphenols

IMPACT

1 / 5

EVIDENCE

2 / 5

How to implement

Take a supplement containing berry polyphenols, in a dose ranging from 500 to 1000 mg per day. This can be in the form of a capsule or powder mixed with water, ideally taken with meals to enhance absorption. Continue this supplementation daily for at least 8 to 12 weeks to observe potential health benefits.

TYPICAL STARTING DOSE

500 mg

Description

Berry polyphenols are plant compounds found in various berries that have antioxidant and anti-inflammatory properties. These polyphenols may offer protection against chronic diseases and promote cellular health when included in a balanced diet.

Polyphenols are antioxidants found in many plants. High amounts are found in fruits like berries, grapes, and apples [\[R\]](#).

People take berry polyphenols for the potential antioxidant, anti-inflammatory, gut microbiome, and cell-protecting effects [\[R\]](#).

How it helps

Consuming polyphenol-rich extracts from blueberries and other fruits may improve working memory, attention, and task switching in young adults [\[R\]](#), [\[R\]](#).

How to implement

Description

How it helps

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].

63



Soy Isoflavones

IMPACT1 / 5

EVIDENCE2 / 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

Soy isoflavones (60-110 mg/day for up to 2.5 years) may improve different aspects of cognition [\[R\]](#), [\[R\]](#), [\[R\]](#).

Their effects on postmenopausal women are mixed, but they seem to mildly improve cognition and memory [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

64



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, a type of carotenoid found in brown seaweed, may enhance cognitive function by reducing oxidative stress and inflammation in the brain. Guarana, rich in caffeine, could boost mental alertness and cognitive performance.

65



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 bacteria that impacts brain health by improving memory and reducing anxiety and depression. It promotes the production of a hormone called 'serotonin', which enhances mood and mental clarity, thus benefiting cognition.

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].

66



Avoid Organophosphate Pesticide Exposure

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

To reduce organophosphate pesticide exposure, buy organic produce when possible, thoroughly wash and peel fruits and vegetables, avoid using chemical pesticides in your home and garden, and wear protective clothing and a mask if you must handle pesticides for agricultural or landscaping work.

Description

Reducing organophosphate exposure involves minimizing contact with pesticides and insecticides containing these chemicals, which can protect against potential health risks such as neurotoxicity and respiratory issues, particularly for individuals working in agriculture or pest control.

Organophosphates (OP) are the most widely used pesticides worldwide. They include [\[R\]](#):

- Parathion
- Malathion
- Chlorpyrifos
- Diazinon
- Phosmet

Chronic exposure to OPs has been linked to [\[R\]](#), [\[R\]](#):

- Fertility problems
- Cognitive problems
- Nerve damage
- Cancer and gene damage

How it helps

Reducing exposure to organophosphate pesticides helps maintain good cognition because these chemicals can interfere with your nervous system's functioning, potentially harming brain health and mental clarity. Removal or avoidance reduces the risk of cognitive impairments like memory loss or attention deficits.

A [study of 607 children](#) associated **prenatal exposure to DEAPs with poorer verbal IQ only in boys** [\[R\]](#).

67



Alpha-Linolenic Acid (ALA)

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate foods high in alpha-linolenic acid (ALA) into your daily diet. This means eating about a tablespoon (14 grams) of flaxseeds or chia seeds, a quarter cup (30 grams) of walnuts, or using one tablespoon of flaxseed oil every day.

Description

Alpha-linolenic acid (ALA) is a type of omega-3 fatty acid found in plant-based sources like flaxseeds, chia seeds, and walnuts. It is essential for maintaining heart and brain health and is considered a healthy dietary fat.

How it helps

Alpha-Linolenic Acid (ALA) is a type of Omega-3 fatty acid, which is essential for brain health. Consuming adequate ALA can improve cognition as it helps in brain cell regeneration and communication, thereby boosting memory and mental abilities.

The role of ALA in cognition is in the early stages but shows promising evidence of counteracting cognitive impairment [\[R\]](#).

ALA supplementation during pregnancy does not affect cognitive performance during and 32 weeks after gestation [\[R\]](#).

68



Chicken Liver

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate chicken liver into your meals 1-2 times per week, aiming for portions of about 100 grams (3.5 ounces) per serving. You can cook it by pan-frying, baking, or incorporating it into dishes like pâtés or spreads.

Description

Chicken liver is a nutrient-dense food that is rich in iron, vitamin A, and other essential nutrients. It can be a valuable addition to the diet to support healthy blood and overall nutritional health.

How it helps

In a non-placebo-controlled trial of 60 children, consuming liver meatballs 3x/week for 90 days improved the scores at verbal and non-verbal cognitive function tests [\[R\]](#).

Chicken liver is rich in vitamins like B12 and iron, which are critical for brain function and overall cognitive health. These nutrients help in the formation of brain cells and their proper functioning, thus enhancing cognition.

69



Lemon Balm

IMPACT1 / 5

EVIDENCE1 / 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

A single dose of [lemon balm](#) extract (300-1,600 mg) may improve attention, memory, and mathematical skills. However, the lowest doses **reduced** working memory and information processing in some studies [\[R, R, R, R\]](#).

70



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

Taking [black seed](#) extract (500-1,000 mg/day for 4-9 weeks) may improve cognition, attention, and memory [\[R\]](#), [\[R\]](#).

71



Krill Oil

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

1 g

Description

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

How it helps

In a study involving 45 elderly men, 12 weeks of krill oil supplementation improved cognitive function in working memory and calculation tasks compared to sardine oil. Another trial with 266 adolescents found that krill oil increased omega-3 levels, benefiting cognitive tests but not school grades. However, a 12-month trial with 267 adolescents showed no improvement in academic performance. Additionally, a study of 555 military officers found that krill oil did not enhance cognitive performance [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Krill oil contains omega-3 fatty acids, which improve cognitive functions like memory and concentration.

72



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

73



Transcendental Meditation

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Practice transcendental meditation for 20 minutes twice a day, once in the morning before breakfast and once in the afternoon or early evening. Sit comfortably in a quiet place, close your eyes, and silently repeat a mantra given to you by a certified transcendental meditation teacher.

TYPICAL STARTING DOSE

20 minutes

Description

Transcendental Meditation is a technique for mindfulness and stress reduction that involves silently repeating a specific mantra to attain a state of deep relaxation and heightened awareness. It is associated with reduced stress, improved focus, and enhanced overall well-being.

How it helps

Transcendental Meditation can help improve cognition as it enhances brain function and reduces stress, factors that directly influence cognitive abilities. Regular practice can improve focus, memory, and mental clarity.

In a non-placebo-controlled trial of 17 dementia caregivers, participating in a 12-week (14-hour) transcendental meditation program improved several measures of cognitive function. In a non-placebo-controlled trial of 73 residents of elderly homes, those who performed transcendental meditation had better word fluency and perceived control [\[R\]](#) [\[R\]](#).

74



Brown Seaweed

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a supplement containing brown seaweed extract, such as Fucus vesiculosus or Ascophyllum nodosum, in capsule or powder form. Aim for a daily dosage of 500-1000 mg, preferably with meals to enhance absorption. Continue this regimen for at least 8-12 weeks to evaluate its effects on your health.

TYPICAL STARTING DOSE

500 mg

Description

Brown seaweed, such as kelp and wakame, is a nutrient-dense marine alga often used in Asian cuisine and dietary supplements. It's a natural source of essential minerals like iodine and may offer various health benefits, including thyroid support and potential antioxidant effects.

How it helps

Brown seaweed contains fucoidan, a natural compound that promotes neurogenesis, where new neurons are made, thus improving brain functioning and cognition. It also contains antioxidants that aid in protecting against neuronal cell damage and related cognitive decline.

In a placebo-controlled trial of 60 healthy volunteers, consuming brown seaweed extract (500 mg) 30 min prior to lunch **improved postprandial accuracy of digit vigilance and choice reaction time** [\[R\]](#).

75



Peppermint Oil Aromatherapy

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Add 2-3 drops of peppermint oil to a diffuser filled with water and use it in your home or office space for about 30 minutes to an hour daily for a calming effect and to aid with focus and digestion.

TYPICAL STARTING DOSE

30 minutes

Description

Peppermint oil is extracted from the leaves of the peppermint plant, and has a long history of medicinal usage. Peppermint aromatherapy involves the inhalation of the diffuse essential oil derived from the peppermint plant. It is known for its potential to alleviate headaches, reduce stress, and improve mental clarity, making it a popular choice for promoting relaxation and mental well-being.

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 [\[R\]](#).

[Peppermint oil](#) is an **essential oil from peppermint leaves**. It may ease muscle pain, relieve headaches, and improve digestion [\[R\]](#), [\[R\]](#).

Essential oils can be harmful if not used properly. Tips for using them safely include [\[R\]](#), [\[R\]](#):

- 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

Please note: *Peppermint oil may interact with certain medications. If you are taking any medications, consult your doctor before using peppermint oil* [\[R\]](#), [\[R\]](#).

How it helps

Peppermint oil aromatherapy may improve [\[R\]](#), [\[R\]](#):

- Memory
- Alertness
- Typing speed and accuracy

76



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 may improve cognition by enhancing chemical functions in the brain, especially the cholinergic system.

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].

77



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, high in antioxidants and anti-inflammatory compounds, can help boost brain health by reducing oxidative stress and inflammation, both linked to cognitive decline. Their melatonin content also helps regulate sleep, which is essential for good cognitive function.

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

78



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 a neurotransmitter that can enhance memory and attention by increasing the efficiency of nerve signals in the brain. This supplement, therefore, could potentially improve cognitive 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 [\[R\]](#).

79



Orange Juice

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Consume 8-ounces (about 240 milliliters) of orange juice daily, preferably in the morning with breakfast. This routine can be followed every day as part of a balanced diet for an indefinite period.

Description

Orange juice is a citrus beverage made from the juice of oranges. It is a rich source of vitamin C and other essential nutrients, contributing to immune support, skin health, and overall well-being.

How it helps

Orange juice is rich in antioxidant compounds known as flavonoids that have neuroprotective effects, helping to maintain cognitive function. Also, the vitamin C present in it can enhance brain function, aiding memory, concentration, and overall mental agility.

In a study with males aged 30-65, consuming 240ml of FR orange juice (272mg) improved executive function and psychomotor speed compared to a placebo, with increased subjective alertness [\[R\]](#).

80



Holy Basil (Tulsi)

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take 300-600 mg of a holy basil extract daily, divided into two doses, with meals. Continue this supplementation for at least one month to observe benefits.

TYPICAL STARTING DOSE

300 mg

Description

Holy basil, also known as Tulsi, is an adaptogenic herb traditionally used in Ayurvedic medicine for its potential to reduce stress, boost immunity, and support overall well-being. It contains compounds believed to have anti-inflammatory and antioxidant properties.

How it helps

Holy Basil, or Tulsi, is known to enhance cognitive function by improving mental clarity, relieving stress, and boosting mood. It possesses neuroprotective properties that can help to maintain and improve brain health, thus enhancing cognition.

A placebo-controlled study found that capsules of ethanolic leaf extracts of Ocimum sanctum (300 mg/day for 30 days) and placebo procured improvement although for the placebo it stabilized after day 15. Holy basil caused improvement in the following cognitive parameters: **reaction time (RT) and error rate (ER) of the Sternberg test, the reaction time of neutral task of Stroop, reaction time and error rate of the interference task of Stroop, P300 latency, salivary cortisol, and State-Trait Anxiety Inventory**. However, it **did not change heart rate (HR), AHR, or galvanic skin response (GSR) or AGSR** [\[R\]](#).

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Speararmint

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a spearmint supplement, usually found in capsule form, once or twice daily with water. Daily dosage recommendations can vary, but they are commonly around 400mg to 800mg, based on product guidelines and individual tolerance. Continue this supplementation daily for at least 90 days to observe potential benefits.

Description

Speararmint is a member of the mint family, and is native to Europe and Asia. Traditionally, it has been used in teas and cooking for its flavor and potential digestive and respiratory benefits. It contains compounds like carvone and limonene, which help give it these benefits.

Speararmint (*Mentha spicata*) is an aromatic herb used to flavor food and tea [\[R\]](#).

People also use spearmint to help with [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Digestive issues
- Cough and respiratory issues
- Cognition

How it helps

Speararmint extract (900 mg/day for 17-90 days) may improve attention, alertness, and focus [\[R\]](#), [\[R\]](#).

82



Paraxanthine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a paraxanthine supplement of approximately 100-200 mg per day, orally. This is best done in the morning to avoid interference with sleep patterns. Continue this daily for a period assessed by its benefits on your health or as recommended by a healthcare provider.

TYPICAL STARTING DOSE

100 mg

Description

Paraxanthine, also known as 1,7-dimethylxanthine, is a natural metabolite of caffeine. It is utilized primarily as a stimulant to increase alertness and energy levels, and is found in caffeinated beverages like coffee, tea and energy drinks. Supplement forms offer more concentrated doses that may help with energy levels and alertness.

How it helps

In 2 placebo-controlled trials of 25 healthy volunteers, a single paraxanthine dose (50-200 mg) improved short-term memory, reasoning, attention, and response time to cognitive challenges [R, R].

Paraxanthine stimulates the release of neurotransmitters like dopamine and glutamate that are important for cognition. This stimulation helps improve mental alertness, memory, and concentration, making it beneficial for cognitive functions.

83



Morning Bright Light Therapy

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Expose yourself to a light therapy box, which mimics natural sunlight, for about 20-30 minutes each morning within the first hour of waking up. It's important to do this daily, especially during months with less natural sunlight, to help manage symptoms of Seasonal Affective Disorder (SAD) or other conditions influenced by light exposure.

TYPICAL STARTING DOSE

20 minutes

Description

Bright light therapy, often used to treat conditions like seasonal affective disorder (SAD) and certain sleep disorders, involves exposure to specific wavelengths of light. It can help regulate sleep patterns, improve mood, and alleviate symptoms associated with mood disorders.

[Bright light therapy](#) involves exposing people to artificial indoor light via a “light box.” This box is often placed nearby for 30 minutes each morning. A light therapy box should [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Provide 10,000 lux of light
- Filter out UV light

Light therapy may improve mood and help with certain mental health conditions [\[R\]](#), [\[R\]](#).

How it helps

Morning light can aid cognition by helping regulate the body's internal clock, which can improve sleep, mood, and overall brain function. Exposure to morning light also boosts alertness and concentration levels throughout the day.

In a study with 17 participants, three light settings were tested over 48 hours, showing that morning dawn simulation light (0-250 lux) improved well-being, mood, and cognition without major circadian effects [\[R\]](#).

84



Pickleball

IMPACT

1 / 5

EVIDENCE

1 / 5

Description

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

How it helps

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

85



Hawthorn Extract and Camphor

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take hawthorn extract in the form of a supplement capsule, typically available in dosages ranging from 250 to 500 mg. Combine this with camphor in a topical form, commonly found in creams or ointments. Use the hawthorn extract capsule once or twice daily with meals, and apply the camphor topical product to the affected area no more than three to four times a day. Continue this regimen for at least three to six months to evaluate its effectiveness.

TYPICAL STARTING DOSE

500 mg

Description

Hawthorn extract is used in herbal medicine for its potential to support cardiovascular health, including regulating blood pressure and improving circulation. Camphor is used in various topical products for its potential to relieve minor pain and itching. When applied properly, it can provide temporary relief from discomfort associated with skin conditions and muscle aches.

How it helps

In 3 placebo-controlled trials of 222 patients with low blood pressure, supplementation with a fixed hawthorn and camphor combination (20 drops) improved cognitive functioning (general information processing capacity, visuomotor speed, and attention performance). However, this combination was ineffective in 220 adolescents with low blood pressure [\[R, R, R, R\]](#).

Hawthorn extract may improve blood flow to the brain. This may enhance cognitive function and focus.

86



Dietary Pentadecanoic Acid

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

While there is no officially recommended daily intake for pentadecanoic acid, research suggests that **20–50 mg per day** may support health benefits such as improved metabolism, reduced inflammation, and enhanced cellular health. You can achieve this through a balanced diet rich in full-fat dairy and fatty fish or by taking supplements as directed. Always consult with a healthcare professional before starting supplementation, especially if you have specific health conditions or dietary restrictions.

Description

Pentadecanoic acid, also known as C15:0, is a 15-carbon saturated fatty acid that belongs to the group of odd-chain fatty acids. It is naturally found in [\[R\]](#):

- Full-fat dairy products (e.g., milk, butter, and cheese)
- Fatty fish (salmon, herring, mackerel, sardines, anchovies, tuna)
- Whole grains
- Seed oils (flaxseed, chia, hemp)
- Legumes (lentils, chickpeas)

Unlike even-chain fatty acids, pentadecanoic acid has unique biological properties that are being increasingly studied for its potential health benefits.

Supplementation with pentadecanoic acid has shown promise in supporting metabolic health by improving cholesterol levels, enhancing insulin sensitivity, and reducing inflammation. It may also promote cellular health by stabilizing cell membranes and improving mitochondrial function. Additionally, C15:0 has been linked to better immune system regulation, neuroprotection, and potentially reducing the risk of chronic diseases like diabetes and cardiovascular conditions. As an emerging "essential fatty acid," it is gaining attention for its role in promoting long-term health and wellness.

How it helps

A high pentadecanoic acid intake during the perinatal period has been associated with improved cognitive development in the offspring [\[R\]](#).

Type 2 diabetes patients with high blood pentadecanoic acid levels may have better cognitive function. However, a study failed to associate dietary pentadecanoic acid consumption with the mini-mental state examination scores in healthy older adults [\[R\]](#), [\[R\]](#).

87



Berries

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

Description

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

How it helps

Berries are rich in antioxidants and flavonoids, which improve brain function and delay brain aging, enhancing cognition effectively. They also strengthen brain cells and connections, thus improving your memory, attention, and processing speed.

In a study with 40 participants aged 20-30, consuming a mixed berry smoothie improved cognitive performance and reduced fatigue compared to a placebo. Berry intervention maintained accuracy and led to quicker response times during the study [\[R\]](#).

88



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 is known for its anti-inflammatory property which aids in reducing inflammation in the brain, potentially improving cognition. It may also help reduce oxidative stress in the brain which could prevent cognitive decline, improving brain health and function.

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

89



Black Seed Oil

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take one to two teaspoons (5-10ml) of black seed oil twice daily, preferably before meals. For capsule forms, follow the manufacturer's instructions, commonly 500mg capsules twice daily. Continue this regimen for up to 8 weeks to evaluate its effects.

TYPICAL STARTING DOSE

2 tsp

Description

Both black seed extract and black seed oil have been traditionally used for their potential health benefits, including anti-inflammatory and antioxidant properties. They may support overall wellness and immune function when incorporated into a balanced diet.

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

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

- Allergies
- Joint pain

How it helps

Taking [black seed](#) extract (500-1,000 mg/day for 4-9 weeks) may improve cognition, attention, and memory [\[R\]](#), [\[R\]](#).

90



Peppermint Oil

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 180-400 mg of peppermint oil in capsule form daily before meals. It is recommended to continue this regimen for at least 4 weeks to evaluate its effects.

TYPICAL STARTING DOSE

180 mg

Description

Peppermint oil is an essential oil derived from the peppermint plant (*Mentha × piperita*). It has a long history of traditional use, dating back to ancient Egypt and Rome, where it was utilized for digestive and respiratory issues. Its main compounds, menthol and menthone are utilized for a variety of potential health benefits, including digestion, skin care, headaches, and respiratory congestion.

People use peppermint in foods, cosmetics, and supplements. [Peppermint oil](#) is an essential oil from peppermint leaves. It may ease muscle pain, relieve headaches, and improve digestion [\[R\]](#), [\[R\]](#).

Please note: *Peppermint oil may interact with certain medications. If you are taking any medications, consult your doctor before using peppermint oil* [\[R\]](#), [\[R\]](#).

How it helps

In a double-blind study with 24 participants, consuming 100 µL of peppermint essential oil improved cognitive performance on the Rapid Visual Information Processing task at 1 hour and 3 hours post-dose. Both 50 µL and 100 µL doses reduced mental fatigue and enhanced performance on the Serial 3 s subtraction task at 3 hours post-dose [\[R\]](#).

Peppermint oil may help by increasing blood circulation throughout the brain, which enhances brain function and focus. Moreover, its stimulating properties can alleviate fatigue and enhance mental alertness.

91



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

92



Black Chokeberry

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

Description

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

How it helps

Black Chokeberry is rich in antioxidants and other beneficial compounds that enhance brain function, potentially improving cognition. It may help by reducing inflammation and oxidative stress in the brain, leading to improved memory and focus.

In a [placebo-controlled trial of 101 healthy volunteers](#), consuming black chokeberry extract (90-150 mg/day) for 24 weeks **improved psychomotor speed** [\[R\]](#).

93



Colostrum

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

20 g

Description

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

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

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

How it helps

Colostrum, often referred to as 'first milk', has been suggested to promote brain health due to the presence of growth factors that could enhance neuroplasticity, supporting cognition improvements. While promising, more research is required to fully establish these benefits.

In a study involving 40 older adults, colostrum supplementation (60g/day) during resistance training increased leg press strength more than whey protein, and reduced bone resorption. Both groups improved upper body strength, muscle thickness, lean tissue mass, and cognitive function. No significant changes in IGF-1 or CRP were observed [R].

In a study, subjects were assigned to a placebo (whey protein) and colostrum group (20g/day in powder form). The colostrum group showed a significant increase in bone-free lean body mass, with a mean increase of 1.49 kg [R].

However, in a double-blind study, physically active men (R group and E group) were given either a placebo (maltodextrin) or bovine colostrum (20g daily) within one month between treatments. Bovine colostrum increased serum essential amino acids but didn't affect strength performance or protein net balance during recovery after strength training [R].

94



Strawberries

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate a serving of strawberries, which is approximately eight medium-sized strawberries (about 1 cup or 150 grams), into your daily diet. You can enjoy them as a snack, add them to your breakfast cereal or oatmeal, blend them into smoothies, or use them as a topping for salads and desserts.

Description

Strawberries are a delicious fruit rich in vitamin C, antioxidants, and dietary fiber. They provide essential nutrients and are associated with various health benefits, including improved immune function and heart health.

Strawberries (*Fragaria ananassa*) are one of the most consumed berries, both fresh and processed in juices, jams, yogurts, and desserts [\[R\]](#).

Strawberries have a high content of antioxidants and vitamins, such as [\[R\]](#), [\[R\]](#):

- Vitamin C
- Folate
- Flavonoids

How it helps

Strawberries are packed with antioxidants and vitamin C which boost brain health and improve cognitive functions by reducing oxidative stress and inflammation. They also contain flavonoids that enhance memory and delay brain aging.

In a [randomized, double-blind, placebo-controlled trial in 22 older men](#), freeze-dried strawberries (24 g/day, equivalent to two cups of fresh SB for 90 days) **shortened latencies in a virtual spatial navigation task and increased word recognition in the California Verbal Learning test across study visits relative to controls**. However, it did not improve gait or balance [\[R\]](#).

95



Magnesium

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take up to 350 mg of magnesium daily as a supplement, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

350 mg

Description

Magnesium is an essential mineral involved in various bodily functions, including muscle contractions, nerve signaling, and bone health. Maintaining adequate magnesium levels through diet or supplements can support overall well-being and reduce the risk of magnesium deficiency-related health issues.

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

- Muscle, nerve, and bone function
- Blood sugar and blood pressure control
- DNA and protein production
- Strong immunity

Women need **310-320 mg** of magnesium per day, while men need **400-420 mg** [\[R\]](#).

Foods rich in magnesium include **nuts, seeds, and leafy greens**. Magnesium is also available as a supplement [\[R\]](#).

How it helps

In a placebo-controlled trial of 109 healthy volunteers, supplementation with magnesium L-threonate (2 g/day) for 30 days improved memory and cognition, especially in older participants [\[R\]](#).

Magnesium L-threonate can cross the blood-brain barrier and may enhance connections between brain cells. This process may improve memory and cognitive function.

96



Restorative Yoga

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Engage in restorative yoga sessions for 20-30 minutes, at least three times a week. Choose a quiet, comfortable space where you won't be disturbed, using props such as yoga mats, bolsters, and blankets to support your body in relaxing poses.

TYPICAL STARTING DOSE

30 minutes

Description

Restorative yoga is a gentle and therapeutic form of yoga that involves holding poses for extended periods to promote relaxation, reduce stress, and improve flexibility and joint mobility.

How it helps

In a non-placebo-controlled trial of 35 breast or ovarian cancer survivors, practicing restorative yoga for 12 weeks improved overall cognitive function and fluid cognition better than vigorous yoga [R].

Restorative yoga may help by relieving stress and promoting relaxation, which can improve mental clarity and focus. It also enhances circulation and oxygen flow to the brain, thereby enhancing cognitive functions.

97



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 is a type of probiotic that can contribute to a better brain function by contributing to the balance of the gut bacteria, influencing the communication between the gut and the brain, a relationship known as the gut-brain axis. Such a balanced gut-brain axis can improve mental health and cognitive abilities.

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 [\[R\]](#).

98



Sulforaphane

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

30 mg

Description

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

How it helps

In a [placebo-controlled trial of 144 older adults](#), supplementation with sulforaphane (30 mg/day) for 12 weeks **improved processing speed and working memory** [\[R\]](#).

99



Desert Olive Tree Pearls

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take one capsule of desert olive tree pearls daily with water, preferably with a meal, for at least 8 weeks to potentially see benefits.

Description

Desert olive tree pearls, derived from the fruit of the desert olive tree, are rich in antioxidants and healthy fats. They are used in traditional medicine for potential health benefits, including anti-inflammatory properties and support for skin health.

How it helps

Desert olive tree pearls are rich in antioxidants such as hydroxytyrosol, which may help by reducing oxidative damage and inflammation in the brain.

In a placebo-controlled trial of 72 middle-aged and older adults, supplementation with desert olive tree pearls (3 g, 2x/day for 12 weeks), which contain 162 times more hydroxytyrosol than olive oil, improved psychomotor speed, reaction time, cognitive flexibility, processing speed, and executive function [\[R\]](#).

The study investigated the effects of desert olive tree pearls (DOTPs), rich in hydroxytyrosol, on cognitive function in middle-aged and older adults. Participants received 3g of DOTPs or placebo twice daily for 12 weeks. DOTP intake showed significant improvement in complex attention compared to placebo, with significant time effects observed in various cognitive domains including psychomotor speed, reaction time, cognitive flexibility, processing speed, and executive function [\[R\]](#).

100



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 accuracy of attention, episodic memory, and processing speed [\[R\]](#), [\[R\]](#).

Mangiferin may help by stimulating BDNF levels. This increases the brain's ability to form new connections and strengthens existing ones, possibly enhancing memory and learning.

101



Chromium

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a 200 mcg chromium supplement daily, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

200 mcg

Description

Chromium is a trace mineral that plays a role in insulin sensitivity and glucose metabolism. Adequate chromium intake through diet or supplements may help support blood sugar control and overall metabolic health.

[Chromium](#) (Cr) is a trace element. It helps regulate carb, fat, and protein breakdown [\[R\]](#).

Women need 20-25 micrograms (mcg) of chromium per day, while men need 30-35 mcg [\[R\]](#).

It’s easy to get chromium from your diet. Good sources include [\[R\]](#):

- Grape and orange juice
- Ham
- Beef
- Lettuce

You can also get chromium from supplements [\[R\]](#).

How it helps

Supplementation with chromium picolinate for 12 weeks improved cognitive inhibitory control and cerebral function in a placebo-controlled trial of 26 older adults at risk for neurodegeneration [\[R\]](#).

102



Curcumin Longvida

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

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

TYPICAL STARTING DOSE

1 g

Description

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

How it helps

Supplementing with curcumin Longvida (400 mg/day) improved working memory and mood in older participants. In another trial, it enhanced working memory, mood, alertness, and contentedness in older adults. However, a higher dose of Longvida (2000 mg/day) did not improve motor and cognitive functions in healthy individuals [\[R\]](#), [\[R\]](#), [\[R\]](#).

Curcumin Longvida may help by reducing inflammation and oxidative stress in the brain. It also promotes the growth of new brain cells, potentially improving memory and brain function.

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

103



Green Coffee Extract

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a 400 mg dose of green coffee extract supplement daily. This can be consumed in the morning or as directed on the supplement’s packaging.

TYPICAL STARTING DOSE

400 mg

Description

Green coffee extract is believed to support weight management due to its high content of chlorogenic acids, which may help regulate blood sugar levels and promote fat metabolism.

Green coffee is made from unroasted coffee beans. It’s rich in an anti-inflammatory and antioxidant compound called [chlorogenic acid](#) [R, R].

Green coffee may help lower [R]:

- Blood pressure
- Weight
- Blood sugar levels

How it helps

In a placebo-controlled trial of 38 healthy volunteers, supplementation with chlorogenic acids for 16 weeks improved shifting attention, motor speed, psychomotor speed, and executive function. Green coffee extract (440 mg chlorogenic acid) also increased cerebral blood flow and mood in a placebo-controlled trial of 32 healthy volunteers. However, green coffee extract (100-300 mg) had negligible or even negative effects on cognition in a placebo-controlled trial of 72 healthy volunteers [R, R, R].

Green coffee is rich in antioxidants, which can help protect the brain against oxidative stress. It also contains chlorogenic acid, which could potentially improve mood and cognitive functions.

Please note: *Green coffee bean extract contains caffeine. Keep this in mind if you're trying to limit your caffeine intake. If you're pregnant, limit caffeine to 200 mg per day* [R].

Please note: *chlorogenic acid from green coffee beans 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 coffee bean extract and always consult with a healthcare provider before taking this supplement* [R].

Please note: *polyphenols and tannins from coffee 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 coffee or coffee supplements.*

104



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 [\[R\]](#).

105



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 40 healthy college students, supplementation with plasmalogens (2 mg/day) for 4 weeks improved concentration while decreasing mood disturbances, insomnia, anger, and fatigue [\[R\]](#).

In another 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 [\[R\]](#).

106



Neurofeedback

IMPACT1 / 5

EVIDENCE1 / 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, a type of biofeedback where the brain learns to function more efficiently, can enhance cognition. It helps by training your brain to return to healthy patterns of activity, improving focus, memory, and mental flexibility.

In one study with 86 adults aged 54-84, app-based ABC games improved memory, verbal memory, and overall cognitive function. Another study on 63 subjects over 60 years found that neurofeedback training (NFT) enhanced visuospatial, language, memory, and intellectual abilities after five sessions. PAF NF had mixed effects on memory [\[R\]](#), [\[R\]](#), [\[R\]](#).

However, other studies did not show any improvement in cognitive performance [\[R\]](#), [\[R\]](#).

107

Maintain Optimal Vitamin D Levels

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

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

TYPICAL STARTING DOSE

1000 iu

Description

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

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

- Mood
- Immunity
- Heart health
- Blood sugar control

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

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

How it helps

Low vitamin D levels may be associated with worse cognition. However, the evidence is mixed. Vitamin D supplementation may support some cognitive domains of healthy adults [\[R, R, R, R\]](#).

108



Thiamine Supplements

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take thiamine supplements orally, starting with a dose of 100 mg daily. This can be taken with or without food, but consistently at the same time each day for at least one month to help improve deficiency symptoms.

TYPICAL STARTING DOSE

100 mg

Description

Your doctor may recommend thiamine supplements. You can also discuss magnesium supplements with your doctor if your magnesium levels are low [\[R\]](#).

How it helps

Thiamine (Vitamin B1) supplements can enhance cognition by supporting the brain's energy metabolism and neurotransmission processes. Inadequate Thiamine can lead to cognitive impairment as it's crucial for glucose metabolism which fuels brain functions.

In a study involving 120 young adult females who took either a placebo or 50 mg of thiamine daily for 2 months, improvements in thiamine status were linked to reported enhancements in clarity of thought, composure, and energy. Thiamine supplementation did not affect memory, but it did result in faster reaction times after the supplementation period. [\[R\]](#)

109



Balance And Mobility Training

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate balance and mobility exercises into your routine three to four times per week. Each session should last approximately 30 minutes and include activities such as standing on one foot, walking heel to toe, and tai chi or yoga. Start with simple exercises and gradually increase difficulty as your balance improves.

TYPICAL STARTING DOSE

30 minutes

Description

Balance and mobility training exercises, such as yoga or tai chi, can improve stability and reduce the risk of falls, particularly among older adults. These exercises enhance overall physical function.

How it helps

A study examined the effects of balance and mobility training, both alone and combined with cognitive training, in older adults. Both groups showed improved timed up and go (TUG), TUG cognitive (TUGcog), and TUG manual (TUGman) tasks after 12 weeks, maintaining improvements at a 12-week follow-up, while the control group showed no changes. No significant differences were observed between the group with and without cognitive training [\[R\]](#).

Balance and mobility training improves body coordination and concentration, which strengthens cognitive processes.

110



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.

111



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 [\[R\]](#).

112



Phosphatidylserine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

300 mg

Description

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

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

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

How it helps

Supplementation with phosphatidylserine may improve cognitive aspects such as memory and learning in people with mild cognitive decline. However, the results are mixed [\[R\]](#), [\[R\]](#), [\[R\]](#).

The combination of phosphatidylserine and phosphatidic acid improved memory, mood, and cognition in a placebo-controlled trial of 57 patients with Alzheimer's disease [\[R\]](#).

Phosphatidylserine is a key component of neuronal membranes that may help support brain function.

113



Magnesium L-Threonate

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take magnesium L-threonate in a dosage of 1,500-2,000 mg per day, divided into two or three doses, with or without food. This supplement regimen should be followed consistently for at least one month to evaluate its benefits on cognitive function and sleep quality.

TYPICAL STARTING DOSE
1500 mg

Description

Magnesium L-threonate is a specific form of magnesium that has been studied for its potential to enhance cognitive function and memory. It may have neuroprotective properties and is used in supplements to support mental well-being.

How it helps

In a placebo-controlled trial of 109 healthy volunteers, supplementation with magnesium L-threonate (2 g/day) for 30 days improved memory and cognition, especially in older participants [\[R\]](#).

Magnesium L-threonate can cross the blood-brain barrier and may enhance connections between brain cells. This process may improve memory and cognitive function.

114



D-Serine

IMPACT

1 / 5

EVIDENCE

1 / 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

D-serine supplementation (2.1 g/day for 6 weeks) may improve attention, vigilance, and memory while boosting mood [\[R\]](#).

A single dose of D-serine (30 mg/kg) may have similar benefits in 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 [\[R\]](#).*

115



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

Eating avocados can support cognition as they're rich in healthy fats which nourish the brain and contribute to healthy blood flow, enhancing brain function. Avocados also contain antioxidants like lutein that may aid in improving memory and concentration.

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

116



Speararmint Oil

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take one to two capsules of spearmint oil, equivalent to 400-800mg, daily with water. For best results, incorporate it into your routine at the same time each day, and continue for at least 3 months to observe benefits.

Description

Spearmint oil is an essential oil derived from the spearmint plant (*Mentha spicata*). It's commonly used in aromatherapy, perfumes, and flavoring due to its pleasant, minty aroma. Traditionally, spearmint has been used in herbal remedies for digestive and respiratory benefits. The main compounds in spearmint oil include carvone and limonene.

Spearmint (*Mentha spicata*) is an aromatic herb used to flavor food and tea [\[R\]](#).

Spearmint oil is extracted from the leaves of the plant. People also use spearmint to help with [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Digestive issues
- Cough and respiratory issues
- Cognition

How it helps

A single dose of spearmint essential oil (1-2 drops) may improve performance at cognitive-demanding tasks and reduce mental fatigue [\[R\]](#).

117



Coffee Cherry Extract

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 100-300 mg of coffee cherry extract supplement daily, preferably in the morning to avoid any potential interference with sleep. This can be consumed with or without food, and should be integrated into your daily routine for ongoing support of brain health.

TYPICAL STARTING DOSE

100 mg

Description

Coffee cherry extract, derived from the fruit surrounding coffee beans, contains antioxidants like chlorogenic acids. It has been studied for its potential to support cognitive function and overall antioxidant protection.

How it helps

In a placebo-controlled trial of 46 healthy volunteers, consuming 1100 mg coffee berry extract increased accuracy at rapid visual information processing (when taken alone) and executive function (when combined with 275 mg apple extract) [\[R\]](#).

Coffee cherry extract is rich in antioxidants that protect brain cells from damage, enhancing cognitive functions such as memory and focus. It also increases levels of a protein called BDNF, which aids in brain cell growth and learning processes.

118



Boswellia K-Vie

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a Boswellia K-Vie supplement of 300-500 mg up to three times daily with meals. This regimen should be followed consistently for at least 8 to 12 weeks to evaluate its effects on your health condition.

TYPICAL STARTING DOSE

300 mg

Description

Boswellia K-Vie is a proprietary Boswellia extract that may have anti-inflammatory effects. It's used in supplements to support joint health.

How it helps

Boswellia K-Vie, clinically known as Boswellic acids, has anti-inflammatory properties that may help decrease inflammation in the brain which improves blood flow and could enhance cognitive function. But make sure always to take with a doctor's approval for best results and safety.

119



Green Tea Extract

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take a green tea extract supplement containing 250-500 mg of EGCG (the active compound in green tea) daily, preferably with a meal to enhance absorption. This dosage is typically split into two separate doses, taken in the morning and later in the day. Continue this regimen for at least three months to observe potential health benefits.

TYPICAL STARTING DOSE

250 mg

Description

Green tea extract is a concentrated form of the beneficial compounds found in green tea, such as catechins. It is used in dietary supplements for its potential to enhance metabolism, aid in weight management, and provide antioxidant protection.

[Green tea](#) is made from the same plant as black tea (*Camellia sinensis*). However, the leaves and buds are processed differently [\[R\]](#).

Green tea contains **catechins**. These are antioxidants that help prevent [oxidative stress](#) [\[R\]](#).

EGCG is the main catechin found in green tea. It may help reduce inflammation and support weight loss [\[R\]](#).

How it helps

[Green tea](#) extract enriched with L-theanine may improve recognition memory, attention span, and alertness. Its main component, [EGCG](#) may improve different cognitive functions in people with developmental disorders [\[R, R, R\]](#).

Green tea extract may improve brain activity in key regions for working memory processing, alertness, and attention [\[R, R\]](#).

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 [\[R\]](#).

120



Low-Glutamate Diet

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

To follow a low-glutamate diet, avoid foods high in glutamate such as processed meats (e.g., sausages, ham), certain cheeses (e.g., Parmesan), soy products, and foods containing MSG. Opt for fresh fruits, vegetables, whole grains, and lean proteins. Implement this diet daily over an extended period for potential benefits.

Description

A low-glutamate diet may benefit individuals with sensitivities or certain neurological conditions by reducing the intake of glutamate-rich foods, potentially improving symptoms and overall well-being.

How it helps

In a placebo-controlled trial of 40 veterans with Gulf War Illness, following a low-glutamate diet for 1 month improved overall cognitive function and all cognitive domains (processing speed, executive function, reaction time, etc) except memory [\[R\]](#).

Excessive glutamate can cause brain nerve damage, leading to cognitive impairment. Reducing glutamate intake can lessen these effects.

121



B Vitamins

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take a B vitamin complex supplement once daily, preferably with your morning meal to enhance absorption. The supplement should include a range of B vitamins such as B1 (thiamine), B2 (riboflavin), B3 (niacin), B5 (pantothenic acid), B6 (pyridoxine), B7 (biotin), B9 (folate), and B12 (cobalamin). Ensure consistency by taking it at the same time each day.

Description

B vitamins help the body function properly. Two examples are [vitamin B9 \(folate\)](#) and [vitamin B12](#). They play essential roles in [\[R, R, R, R\]](#):

- DNA formation
- Metabolism
- Energy production

You can get these vitamins from [\[R, R, R, R, R\]](#):

- Animal products
- Green leafy vegetables
- Citrus fruits
- Fortified foods
- Supplements

Adults should be getting **400 micrograms (mcg) of folate** and **2.4 mcg of vitamin B12** every day [\[R, R\]](#).

Folate deficiency is rare but can happen in people that don’t eat enough fruits and vegetables. Alcoholics and lactating mothers may also be at an increased risk [\[R\]](#).

Vitamin B12 deficiency often takes years to develop, as the body is able to store large amounts in the liver. Groups that may be at an increased risk include [\[R, R\]](#):

- Vegans
- Pregnant women
- Older people
- People with gut issues

How it helps

Six placebo-controlled trials of almost 1,400 people found that supplementation with complexes combining the vitamins B6, B9, and B12 for up to 5 years lowered blood homocysteine levels and improved selective attention, vigilance, response inhibition, and IQ. However, these vitamins were ineffective in 5 placebo-controlled trials of almost 11k people [\[R, R, R, R, R, R, R, R, R, R\]](#).

Two meta-analyses found insufficient evidence to support the cognitive-enhancing effects of B vitamins, while the most recent one concluded they may be beneficial in non-demented people [\[R, R, R\]](#).

B vitamins may protect the brain from the oxidative damage caused by homocysteine.

122

Avoid Mercury Exposure

IMPACT

1 / 5

EVIDENCE

1 / 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 protect your cognition because mercury is a neurotoxin. This means high levels can damage nerve cells, leading to cognitive issues like memory problems, difficulty thinking, and more.

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 [\[R\]](#).

How to implement

TYPICAL STARTING DOSE

5 mg

Description

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

How it helps

In a placebo-controlled trial of 72 middle-aged and older adults, supplementation with desert olive tree pearls (3 g, 2x/day for 12 weeks), which contain 162 times more hydroxytyrosol than olive oil, improved psychomotor speed, reaction time, cognitive flexibility, processing speed, and executive function [R].

Hydroxytyrosol may help by reducing oxidative damage and inflammation in the brain.

How to implement

TYPICAL STARTING DOSE

3 mg

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.

How it helps

In a placebo-controlled trial of 61 experienced gamers, supplementation with a *Phaeodactylum tricornutum* extract with 1% fucoxanthin and 500 mg guarana for 30 days improved reaction time, reasoning, learning, executive control, attention shifting (cognitive flexibility), and impulsiveness [R].

Fucoxanthin may help by promoting brain cell growth and reducing inflammation in neural tissue. This can lead to improved memory, attention, and overall cognitive performance.

125



Theacrine

IMPACT

0 / 5

EVIDENCE

1 / 5

How to implement

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

Description

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

How it helps

A clinical trial with 20 healthy people found that a dietary supplement TheaTrim (Purus Labs; containing a branded form of theacrine (Teacrine™) or caffeine (150 mg) (single dose on separate days) **did not change cognitive function, heart rate, or blood pressure**. The supplement caused trends for subjective feelings, with values for attentive, alert, focused, and energetic and lower values for lethargic and groggy in comparison with placebo and caffeine [\[R\]](#).

126



Wasabi

IMPACT

0 / 5

EVIDENCE

1 / 5

How to implement

Take wasabi as a supplement by consuming 500 mg of wasabi extract in capsule form, once daily, preferably with meals to aid in absorption and to minimize potential stomach upset.

TYPICAL STARTING DOSE

500 mg

Description

Wasabi is a pungent, green Japanese condiment derived from the root of the Wasabia japonica plant. It contains compounds like isothiocyanates, known for potential anti-inflammatory and antibacterial properties. Wasabi is used to add flavor to sushi and other dishes and may offer digestive benefits.

How it helps

Wasabi contains compounds called isothiocyanates which have shown to improve brain functions like memory and concentration. Thus, a supplement recommendation of Wasabi could potentially boost cognitive performance and protect brain cells from oxidative stress damage.

In an uncontrolled trial of 20 healthy volunteers experiencing daily fatigue, supplementation with 6-MSITC from wasabi (4.8 mg/day) for 4 weeks failed to improve fatigue after a mental task but did improve fatigue before the mental task, sleep, and mood. In another uncontrolled trial (15 patients with myalgic encephalomyelitis/chronic fatigue syndrome), supplementation with wasabi extract (9.6 mg of 6-MSITC/day) for 12 weeks improved performance status, pain, cognitive dysfunction, and psychological vitality [\[R\]](#), [\[R\]](#).

127



Dietary Selenium

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate selenium-rich foods into your daily diet, such as Brazil nuts, seafood, and organ meats. Eating 1-2 Brazil nuts a day can meet the daily selenium requirement for most adults.

Description

Selenium is a trace mineral found in various foods, including nuts, seeds, and seafood. It is an essential nutrient that plays a crucial role in maintaining the body's antioxidant defenses and supporting thyroid function.

[Selenium](#) supports [\[R\]](#):

- Reproduction
- Thyroid function
- DNA production
- Immune response

Adults should be getting **55 micrograms** of selenium per day. Good sources of selenium include [\[R\]](#):

- Brazil nuts
- Fish
- Meat
- Eggs
- Rice
- Oatmeal

How it helps

Dietary selenium supports cognition as it plays a key role in maintaining good brain function. It acts as an antioxidant, reducing inflammation and oxidative stress in your brain which otherwise could lead to cognitive decline.

128



Inosine

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Inosine is typically available in capsule or tablet form, with doses often ranging between 500 mg and 2,000 mg per day, split into two doses. Since inosine can affect uric acid levels, regular monitoring of uric acid is advisable for long-term use. Taking inosine with food and a full glass of water may help improve absorption and reduce any gastrointestinal discomfort. For those using it to support athletic performance or neurological health, timing the doses consistently each day can help maintain stable levels in the body.

Description

Inosine is a naturally occurring nucleoside composed of hypoxanthine attached to a ribose sugar. By regulating the essential nucleotide adenosine, it plays an important role in various biological processes, including energy metabolism and RNA formation.

Inosine is found in certain foods and can also be synthesized in the body from purines. As a supplement, it may be used to improve:

- Gout
- Energy and recovery
- Neurological health
- Immune system regulation

How it helps

People with a high IQ may have higher uric acid levels. Because inosine raises uric acid levels, it might have beneficial effects on IQ. However, a causal relationship hasn't been established [\[R\]](#), [\[R\]](#).

Please note: Inosine should be used to raise uric acid levels only under the supervision of a qualified healthcare provider since elevated uric acid levels can lead to serious health issues such as gout and kidney stones.

129



Hawthorn Extract

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 300mg to 600mg of hawthorn extract divided into two or three doses throughout the day. It's recommended to continue this regimen daily for at least 3 to 6 months to observe potential benefits.

Description

Hawthorn extract is used in herbal medicine for its potential to support cardiovascular health, including regulating blood pressure and improving circulation. It contains compounds that may help strengthen the heart and promote overall cardiovascular well-being.

[Hawthorns](#) (*Crataegus spp.*) are thorny trees or bushes with white flowers and red berries. Hawthorns are native to Europe, North America, and Asia. They belong to the same family as roses and edible fruits such as apples and pears [\[R, R\]](#).

Hawthorn is one of the oldest known medicinal plants in Europe. In European and American folk medicine, it is traditionally used for [\[R, R, R\]](#):

- Heart disease
- Digestive issues
- Anxiety and insomnia
- Diabetes
- Asthma

How it helps

In 3 placebo-controlled trials of 222 patients with low blood pressure, supplementation with a fixed hawthorn and camphor combination (20 drops) improved cognitive functioning (general information processing capacity, visuomotor speed, and attention performance). However, this combination was ineffective in 220 adolescents with low blood pressure [\[R, R, R, R\]](#).

Hawthorn extract may improve blood flow to the brain. This may enhance cognitive function and focus.

130



Alpha-Ketoglutarate (AKG)

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take alpha-ketoglutarate (AKG) as a dietary supplement in a dose of approximately 1-2g per day, preferably with meals to aid in its absorption. The exact dosage may vary based on the specific product and individual health needs, so it's important to follow the label instructions or consult a healthcare provider for personalized advice. This supplementation can be ongoing, with periodic evaluations to assess its effects on your health.

TYPICAL STARTING DOSE

1 g

Description

Alpha-ketoglutarate (AKG) is a key molecule in the Krebs cycle, crucial for energy production in cells. It plays a role in amino acid synthesis and nitrogen transport. In supplement form, it's claimed to improve athletic performance and support recovery, but the scientific evidence for these benefits is limited.

How it helps

AKG may support cognitive function by promoting mitochondrial health and efficiency in energy production, crucial for optimal brain function. It also has potential antioxidative properties, reducing oxidative stress, which is a factor in cognitive decline.

AKG may also support brain health by controlling the function of intestinal cells and gut microbiota [\[R\]](#).

It can be deaminated into the excitatory neurotransmitter, glutamate, and glutamate, in turn, can be decarboxylated into the inhibitory neurotransmitter, gamma-aminobutyric acid. Accordingly, it may influence the health and function of the nervous system, especially long-term potentiation and memory [\[R\]](#).

131



Glutamine

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take 5 to 10 grams of glutamine powder, mixed with water or another beverage, daily. It can be divided into two servings, one in the morning and the other in the evening. This supplementation is generally considered safe for long-term use, but it's best to consult with a healthcare provider for personalized advice.

TYPICAL STARTING DOSE

5 g

Description

Glutamine is an amino acid that plays a role in various bodily functions, including immune support and gut health. It may help with muscle recovery and overall well-being, particularly for individuals engaging in strenuous exercise.

L-glutamine is an amino acid produced by the body. Its levels may decrease during periods of stress or illness. It is important for protein and energy production, and helps control kidney pH balance [\[R\]](#).

Some people take L-glutamine as a supplement to help with [\[R\]](#):

- Gut health
- Immunity
- Exercise recovery and muscle performance
- Brain health

How it helps

Genetically higher PGA (pyroglutamic acid) levels may be associated with higher intelligence [\[R\]](#).

Glutamine is a key source of energy for the brain and can enhance brain function, boosting cognition. It also helps to produce glutamate, a necessary neurotransmitter for memory and learning.

Please note: *There is no evidence from controlled clinical trials to support this recommendation. It is included based on uncontrolled clinical trials, animal or cell studies, or non-scientific criteria. Please take this recommendation with a grain of salt until more research is available.*

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Topical Camphor

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Apply a camphor-containing cream or ointment to the affected area no more than three to four times daily. Do not use it on broken skin or ingest it. Always wash your hands after applying the product.

Description

Camphor is used in various topical products for its potential to relieve minor pain and itching. When applied properly, it can provide temporary relief from discomfort associated with skin conditions and muscle aches.

How it helps

In 3 placebo-controlled trials of 222 patients with low blood pressure, supplementation with a fixed hawthorn and camphor combination (20 drops) improved cognitive functioning (general information processing capacity, visuomotor speed, and attention performance). However, this combination was ineffective in 220 adolescents with low blood pressure [R, R, R, R].

Camphor may improve blood flow to the brain. This may enhance cognitive function and focus.

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Airway Muscle Training

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

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

TYPICAL STARTING DOSE

30 minutes

Description

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

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

- Sleep apnea
- Respiratory conditions like COPD
- Exercise performance

How it helps

In an uncontrolled trial of 10 healthy volunteers, voluntary isocapnic hyperventilatory training of the respiratory muscles improved processing speed and working memory during exercise at altitude [\[R\]](#).

Airway muscle training improves sleep quality by reducing sleep disturbances like sleep apnea. Improved sleep offers better brain health and cognitive functioning.

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L-Pyroglutamic Acid

IMPACT

0 / 5

EVIDENCE

0 / 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

Genetically higher L-pyroglutamic acid levels may be associated with higher intelligence [\[R\]](#).

L-pyroglutamic acid may help by increasing acetylcholine levels, a crucial neurotransmitter for cognitive functions.

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Agmatine

IMPACT

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EVIDENCE

0 / 5

How to implement

Take agmatine as a dietary supplement in a dose of 1.6 to 6.4 milligrams per kilogram of body weight, daily. It can be consumed with or without food. For best results, continue taking it on a daily basis for at least two weeks to assess its effect on your body.

TYPICAL STARTING DOSE

1 g

Description

Agmatine is a naturally occurring compound found in the human body and in certain foods. It is sometimes used as a dietary supplement and is believed to have potential benefits for pain relief, mood regulation, and cognitive function.

How it helps

Agmatine may improve cognition by modulating several neurotransmitter systems, including potentially influencing acetylcholine release, crucial for learning and memory.

It also interacts with alpha2-adrenoceptors, which can affect cognitive processes like attention and executive function. Agmatine's neuroprotective properties, including reducing oxidative stress and neuroinflammation, further support cognitive health.

Additionally, by modulating NMDA receptors, it may enhance synaptic plasticity, essential for memory formation and learning.

[Insulin resistance](#) can lead to the accumulation of plaque and neurofibrillary tangles in the brain, which are the hallmarks of Alzheimer’s disease. Agmatine prevented cognitive decline by rescuing insulin signaling and preventing the accumulation of plaques and neurofibrillary tangles in the brains of rats [\[R\]](#), [\[R\]](#).

Agmatine is increased during spatial learning tasks and is stored in high levels in the hippocampus (a region of the brain associated with memory). Its role as a neurotransmitter is associated with memory formation [\[R\]](#), [\[R\]](#), [\[R\]](#).

Agmatine improved spatial memory consolidation, or the initial recording and storing of memory, but did not affect the retrieval of memories in rats [\[R\]](#).

Next Steps

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

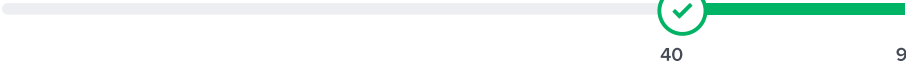
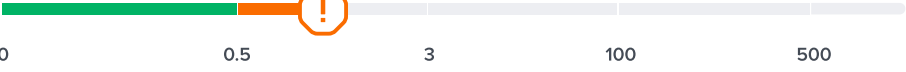
Now that you've seen your DNA-based results for this health topic, let's take a look at other contributing factors.

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.

	ALT	26 IU/L		9 Nov 2025
	AST	17 IU/L		9 Nov 2025
	TSH	2.76 mIU/mL		9 Nov 2025
	DHEA Sulfate	303 mcg/dL		9 Nov 2025
	GGT	9 IU/L		9 Nov 2025
	Zinc	17.12 umol/L		9 Nov 2025
	Glucose, Fasting	97 mg/dL		9 Nov 2025
	Vitamin B12	687 pg/mL		9 Nov 2025
	Vitamin D, 25-Hydroxy, Total	58.59 ng/mL		9 Nov 2025

	Hematocrit	51.8 %		9 Nov 2025
	Active B12	500 pmol/L		13 Jan 2026
	Hemoglobin	17.1 g/dL		9 Nov 2025
	HDL Cholesterol	42 mg/dL		9 Nov 2025
	Homocysteine	12.84 umol/L		9 Nov 2025
	Potassium, Serum	5.2 mmol/L		9 Nov 2025
	hs-CRP	1.6 mg/L		9 Nov 2025
	Testosterone, Total	1500 ng/dL		9 Nov 2025
	HbA1c (%)	4 %		29 Dec 2025
	Iron	228 mcg/dL		9 Nov 2025