

Episodic Memory

DNA Health Report

REPORT CATEGORY —



COGNITION

Sample Client

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Personal information

NAME

Sample Client

SEX AT BIRTH

Male

HEIGHT

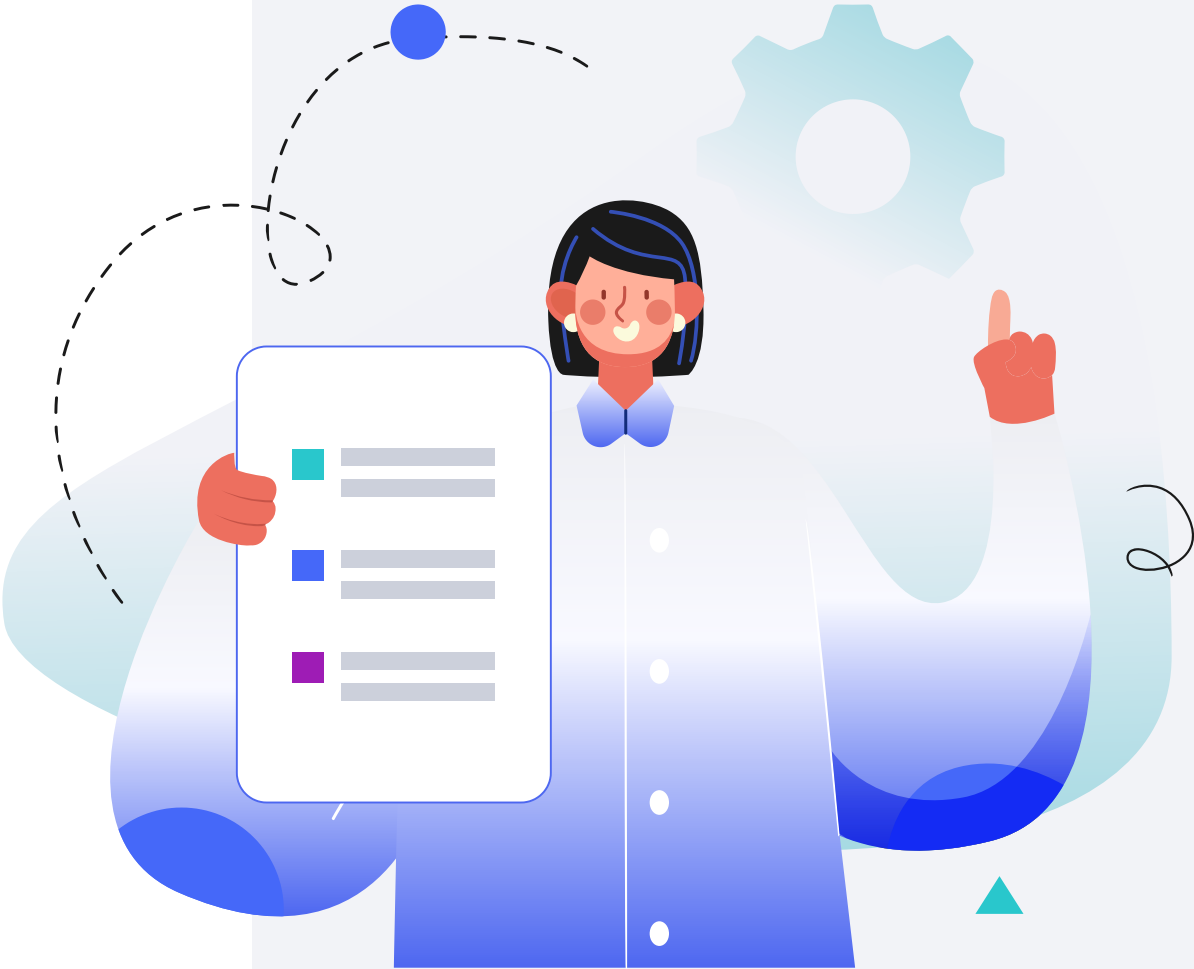
5ft 5" 165cm

WEIGHT

137lb 62kg

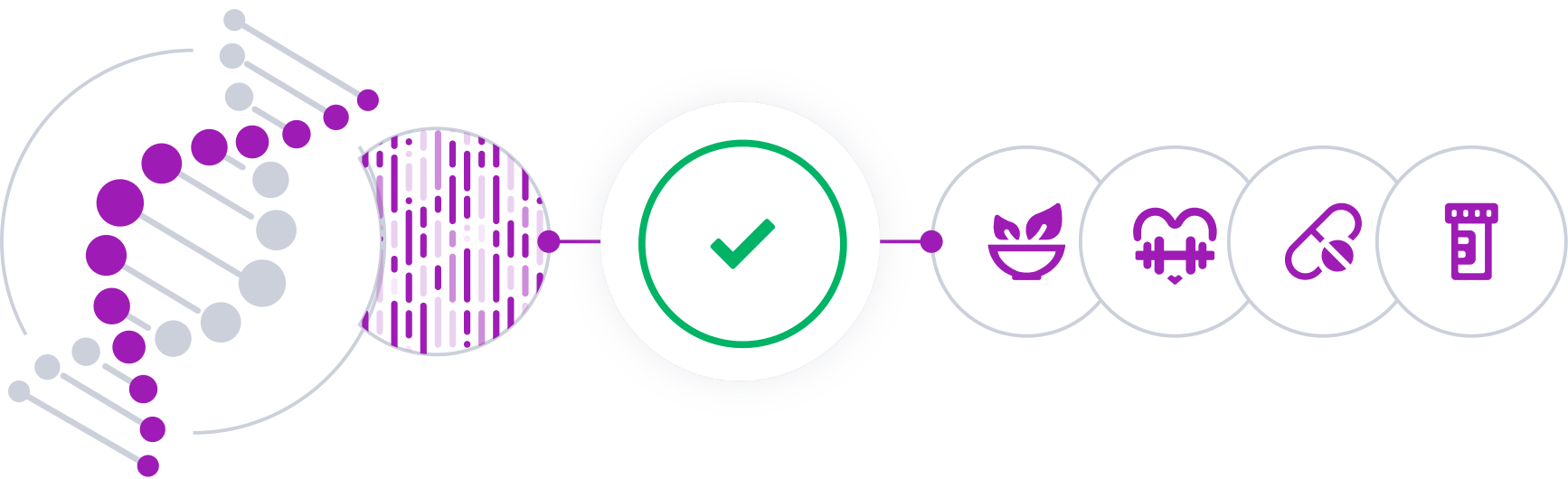
DISCLAIMER

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.

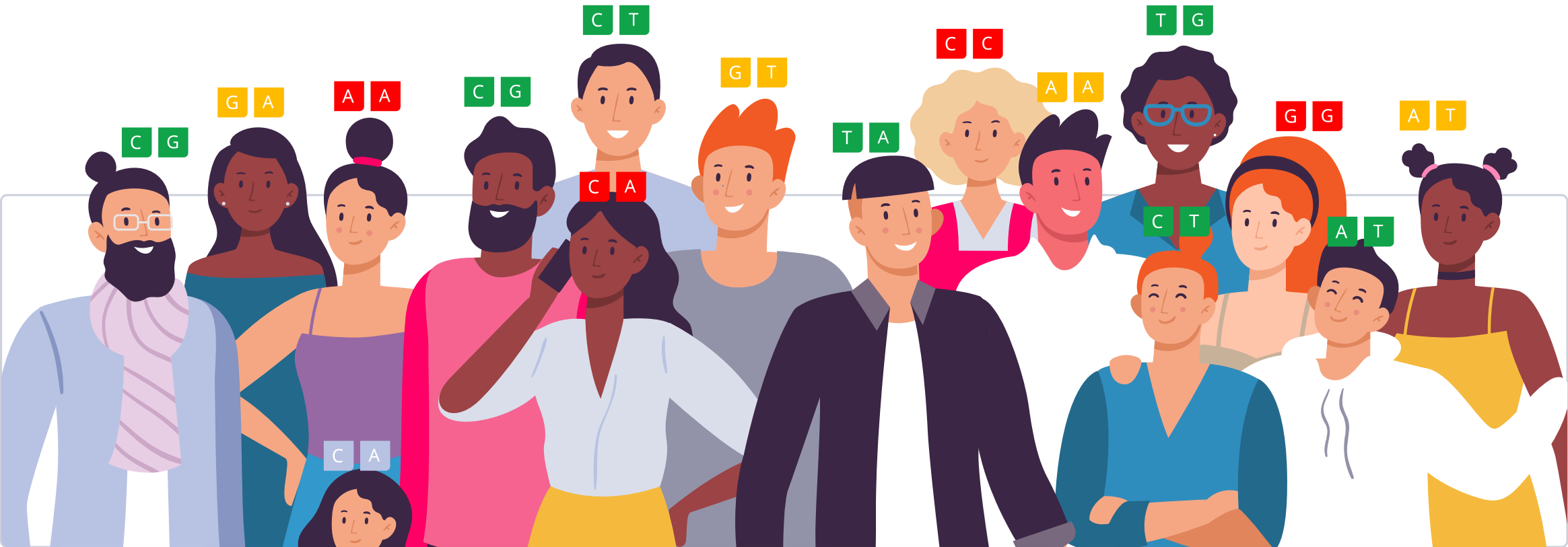


Similarly, our Trait Reports look at how your DNA influences your traits.



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

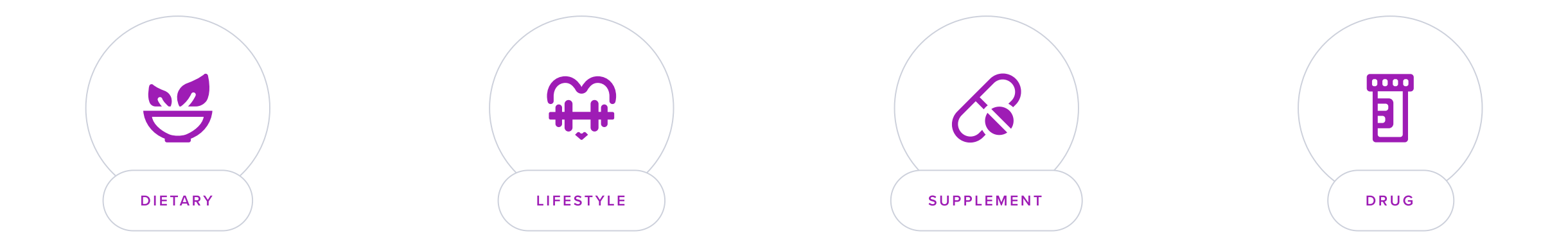
You have 2 risk alleles

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

Do you remember your most recent vacation? How about the best meal you had recently? Or how you met your best friend?

Episodic memory refers to **the ability to remember a specific experience** that happened at a specific time and place. It is sometimes referred to as “**mental time travel**.” It enables us to relive the past and can include any of the senses, e.g. what you saw, heard, smelled, tasted, and felt [R, R, R].

In addition to transporting us back in time, episodic memory also allows us to **learn from our past experiences** and to make sense of the world. It plays a crucial role in our **personal identity**, helping us remember who we are and what we have experienced [R, R, R].

Episodic memories are stored in a part of the brain called **the hippocampus**. The hippocampus is essential for both making new episodic memories, and for storing and retrieving old ones [R].

Contributing Factors

PERSONALIZED TO GENES

Based on the variants we looked at, you are predisposed to typical episodic memory. However, memory performance is influenced by mental stimulation, sleep quality, stress management, physical exercise, and memory training techniques.

Episodic memory enables us to **relive experiences from our past**. It is sometimes referred to as “**mental time travel**” [R, R, R].

About **60%** of people’s differences in episodic memory may be due to **genetics** [R, R].

Other factors that affect our episodic memory include:

- Age [R]
- Stress [R, R, R]
- Lack of sleep [R]
- Psychoactive substances, including alcohol and certain drugs and medications [R, R]
- Conditions such as depression, PTSD and anxiety [R, R, R, R]
- Diseases and injuries that affect the brain (e.g. Alzheimer’s) [R]

There are a number of things that have a beneficial effect on your episodic memory [R, R, R, R]:

- Engaging in social, leisure and physical activities
- Eating a healthy diet
- Getting enough sleep
- Challenging your mind



TYPICAL

Predisposed to typical episodic memory based on 7,286,902 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
BACE2	rs146756105	GG
/	rs62529410	CC
SEMA3C	rs114908661	GG
HTR2A	rs73485231	GG
GRIN2A	rs7205428	AA
ARSJ	rs75864335	GG
LRATD1	rs2033352	TT
UFM1	rs604312	TT
GPATCH2L	rs10138361	GG
TRHDE	rs4426171	GG
ESR1	rs9340799	GA
CLSTN2	rs6439886	AA
MOXD1	rs9321334	GA
/	rs10128294	GA
ESR1	rs2234693	CT
WWC1	rs17070145	TT
FCHO2	rs116140617	GG
/	rs140372794	CC
FOXC2	rs115291988	CC
COASY	rs615942	CC
RPRM	rs4664134	GG
TRPM6	rs78943450	TT
CEP350	rs59621235	GG
APOE	rs429358	TT
METRNL	rs34596959	TT
RXFP2	rs277187	AA
SLC24A3	rs1033549	GG

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	Aerobic Exercise (Cardio)	1 hour	2	Yoga	30 minutes
3	Omega-3 (Fish Oil)	2000 mg	4	Neurofeedback	1 hour
5	CBD	10 mg	6	Carnosine And Anserine	1 g
7	Practice Exercise Snacks	1 minutesute	8	Cognitive Activity	15 minutes
9	Cognitive Training	15 minutes	10	Mindfulness Meditation	30 minutes
11	Meditation	30 minutes	12	Regular Sleep Schedule	
13	Ginkgo	120 mg	14	Leafy Green Vegetables	
15	Berries		16	Green Tea	400 mg
17	Bacognize (Bacopa monnieri)	300 mg	18	Tai Chi	1 hour
19	Carnosine	1000 mg	20	Strength Training	1 hour
21	Acetyl-L-Carnitine	500 mg	22	Mindfulness-Based Stress Reduction (MBSR)	2 hours
23	Anserine	500 mg	24	Phosphatidylserine	300 mg
25	Blueberries		26	Dietary Omega-3 Fatty Acids	
27	Dietary Polyphenols				

1



Aerobic Exercise (Cardio)

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

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

TYPICAL STARTING DOSE

1 hour

Description

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

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

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

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

How it helps

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

Aerobic exercise may improve episodic memory and other areas of cognitive function [[R](#), [R](#), [R](#), [R](#), [R](#)].

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

2



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 episodic memory performance [\[R\]](#), [\[R\]](#).

Combining it with meditation may also help [\[R\]](#).

Yoga (4-12 weeks) may also enhance memory in **older people** [\[R\]](#), [\[R\]](#), [\[R\]](#).

3



Omega-3 (Fish Oil)

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

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

TYPICAL STARTING DOSE

2000 mg

Description

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

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

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

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

- Salmon
- Tuna
- Herring
- Sardines

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

How it helps

Supplementation with omega-3 fatty acids (at least 1 g/day) may improve episodic memory in older adults with mild memory complaints regardless of baseline performance. Both DHA and EPA may help [\[R\]](#).

Omega-3 fatty acids are vital for maintaining the health of cell membranes, including those in brain cells.

4



Neurofeedback

IMPACT1 / 5

EVIDENCE2 / 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, essentially a type of biofeedback, trains the brain towards optimal functioning which can improve episodic memory. By providing feedback about your brain wave patterns and teaching you to control or change them, it can enhance memory recall, hence improving episodic memory.

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

5



CBD

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

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

TYPICAL STARTING DOSE

10 mg

Description

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

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

People use CBD to:

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

How it helps

CBD (cannabidiol) may boost neurological health and reduce inflammation in the brain, potentially leading to improved episodic memory. However, more research is needed to fully understand its impact on memory conditions.

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

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

6



Carnosine And Anserine

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Take a combined dose of 1 to 1.5 grams of carnosine and anserine supplements daily. Divide this total dose into two smaller doses to take in the morning and evening. Continue this supplementation daily for at least 8 to 12 weeks to observe benefits.

TYPICAL STARTING DOSE

1 g

Description

Carnosine is a naturally occurring compound found in muscle tissues and certain foods. It is believed to have antioxidant properties and may support muscle function and overall cellular health. Anserine is a naturally occurring amino acid compound found in certain meats, particularly poultry. It is often considered a dietary source of beta-alanine, which may support muscle function and endurance.

How it helps

Carnosine and Anserine supplements may enhance brain function by defending your brain cells from harmful oxidative stress. Studies suggest they may improve episodic memory, which involves recalling specific events and experiences, by reinforcing connections between neurons.

In a double-blind randomized controlled trial, volunteers were evenly divided into ACS and placebo groups. The ACS group consumed 1.0 g of an anserine/carnosine (3:1) formula daily for 3 months. Psychological tests were conducted before and after the supplementation period with 39 healthy elderly participants (aged 60-78) [R].

A 12-week randomized, double-blind, placebo-controlled trial included 54 subjects with Mild Cognitive Impairment (MCI). They were divided into two groups: one took 750 mg of anserine and 250 mg of carnosine daily, while the other received a placebo. The active group showed better improvement in the global Clinical Dementia Rating (gloCDR) score (p = 0.023). However, no significant improvements were observed in other psychometric tests, except for APOE4 positive (APOE4 (+)) subjects, who saw beneficial changes in MMSE (p = 0.025) and gloCDR (p = 0.026) [R].

7

Practice Exercise Snacks

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Integrate short bursts of physical activity, each lasting about 1 to 2 minutes, into your daily routine at least two to three times a day. These 'exercise snacks' can include activities like doing a set of stairs, rapid bodyweight exercises, pull-ups, push-ups, sit-ups, or brisk walking.

TYPICAL STARTING DOSE

1 minutesute

Description

Staying physically active is essential for maintaining overall health and well-being. **Exercise snacks** are brief, frequent bursts of physical activity integrated into daily routines, helping combat the health risks associated with prolonged sitting and sedentary behavior, such as obesity and cardiovascular issues. Examples include taking the stairs or doing quick exercises during work breaks.

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

Exercise snacks are short, quick bursts of physical activity performed throughout the day, designed to break up prolonged periods of sitting or inactivity. These brief bouts of exercise can be as short as a few minutes and are incorporated into daily routines to boost overall physical activity levels.

Exercise snacks are crucial for health because they combat the negative effects of sedentary behavior, such as prolonged sitting, which is associated with an increased risk of obesity, cardiovascular diseases, diabetes, and musculoskeletal issues. They help improve blood circulation, regulate blood sugar levels, and enhance mood and cognitive function.

Examples of exercise snacks include taking the stairs instead of the elevator, doing a few minutes of bodyweight exercises (e.g., squats or push-ups) during work breaks, or walking briskly for a few minutes after meals. These short, frequent bursts of activity contribute to a more active lifestyle and can significantly benefit overall health by reducing the risks associated with excessive sitting.

How it helps

General physical activity is linked with betterment of brain health and memory.

8



Cognitive Activity

IMPACT

0 / 5

EVIDENCE

0 / 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

Challenges the brain and could strengthen episodic memory through mental engagement.

9



Cognitive Training

IMPACT

0 / 5

EVIDENCE

0 / 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

Directly targets memory improvement through exercises designed to enhance cognitive function.

10



Mindfulness Meditation

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

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

TYPICAL STARTING DOSE

30 minutes

Description

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

How it helps

Improves focus and concentration, potentially aiding in the recall of episodic memories.

11



Meditation

IMPACT

0 / 5

EVIDENCE

0 / 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

Can increase grey matter in the brain, which is associated with memory and thought.

12



Regular Sleep Schedule

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Go to bed and wake up at the same time every day, even on weekends and holidays. This helps regulate your body's internal clock, leading to better sleep quality. Aim for 7-9 hours of sleep per night.

Description

Maintaining a regular sleep schedule involves going to bed and waking up at consistent times each day. This practice helps regulate the body's internal clock and promotes better sleep quality, mood, and cognitive function.

How it helps

Sleep is crucial for memory consolidation and maintenance of healthy cognitive functions.

13



Ginkgo

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

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

TYPICAL STARTING DOSE

120 mg

Description

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

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

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

How it helps

Ginkgo Biloba may improve blood flow to the brain and act as an antioxidant, possibly aiding in memory enhancement.

14



Leafy Green Vegetables

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

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

Description

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

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

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

How it helps

Leafy greens such as spinach and kale are high in vitamins and nutrients, like vitamin K, which support general brain function and may benefit memory.

15



Berries

IMPACT

0 / 5

EVIDENCE

0 / 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 like blueberries are rich in antioxidants such as flavonoids, which can support brain health and may enhance cognitive functions, including memory.

16



Green Tea

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

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

TYPICAL STARTING DOSE

400 mg

Description

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

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

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

- Heart disease
- Cancer
- Diabetes

How it helps

Green tea contains compounds like L-theanine and catechins that may protect the brain and could enhance memory function.

17



Bacognize (Bacopa monnieri)

IMPACT

0 / 5

EVIDENCE

0 / 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 monnieri is known for its ability to enhance cognitive function, potentially improving memory retention and recall.

18



Tai Chi

IMPACT

0 / 5

EVIDENCE

0 / 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

This gentle exercise promotes stress reduction and mental focus, potentially aiding memory.

19



Carnosine

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

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

TYPICAL STARTING DOSE

1000 mg

Description

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

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

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

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

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

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

How it helps

Carnosine, an amino acid, may enhance the brain's memory function by reducing oxidative damage and improving mitochondrial function, both contributing to better memory recall. It has the potential to protect neurons in the brain, reducing memory impairments associated with aging.

In a double-blind randomized controlled trial, volunteers were evenly divided into ACS and placebo groups. The ACS group consumed 1.0 g of an anserine/carnosine (3:1) formula daily for 3 months. Psychological tests were conducted before and after the supplementation period with 39 healthy elderly participants (aged 60-78) [\[R\]](#).

A 12-week randomized, double-blind, placebo-controlled trial included 54 subjects with Mild Cognitive Impairment (MCI). They were divided into two groups: one took 750 mg of anserine and 250 mg of carnosine daily, while the other received a placebo. The active group showed better improvement in the global Clinical Dementia Rating (gloCDR) score (p = 0.023). However, no significant improvements were observed in other psychometric tests, except for APOE4 positive (APOE4 (+)) subjects, who saw beneficial changes in MMSE (p = 0.025) and gloCDR (p = 0.026) [\[R\]](#).

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Strength Training

IMPACT

0 / 5

EVIDENCE

0 / 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

Can enhance cognitive function, possibly improving memory retention.

21



Acetyl-L-Carnitine

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

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

TYPICAL STARTING DOSE

500 mg

Description

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

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

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

- Nerve damage
- Mood problems
- Cognitive decline

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

How it helps

Acetyl-L-Carnitine can support the function of brain cells and has a potential role in neurotransmission and neuroprotection.

22



Mindfulness-Based Stress Reduction (MBSR)

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Enroll in an 8-week MBSR course, which includes a weekly 2.5-hour class, one all-day class after the sixth week, and 45 minutes of daily home practice guided by assignments and instructional recordings.

TYPICAL STARTING DOSE

2 hours

Description

Mindfulness-Based Stress Reduction (MBSR) is a structured program that teaches mindfulness techniques to reduce stress and improve overall mental and emotional health. MBSR has been shown to help individuals cope with chronic pain, anxiety, and other stress-related conditions.

How it helps

Reduces stress, which can impair cognitive function and memory.

23



Anserine

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Take anserine as a dietary supplement in doses of 500-1000 mg daily, ideally with a meal to enhance absorption. Follow this regimen for a period of at least 12 weeks to evaluate its benefits, as most studies assessing its effects on cognitive function and physical performance use this duration.

TYPICAL STARTING DOSE

500 mg

Description

Anserine is a naturally occurring amino acid compound found in certain meats, particularly poultry. It is often considered a dietary source of beta-alanine, which may support muscle function and endurance.

How it helps

Anserine acts as an antioxidant, which is believed to support brain health and improve mental performance. It might help enhance episodic memory by combating oxidative stress in the brain and promoting cognitive function.

In a double-blind randomized controlled trial, volunteers were evenly divided into ACS and placebo groups. The ACS group consumed 1.0 g of an anserine/carnosine (3:1) formula daily for 3 months. Psychological tests were conducted before and after the supplementation period with 39 healthy elderly participants (aged 60-78) [R].

A 12-week randomized, double-blind, placebo-controlled trial included 54 subjects with Mild Cognitive Impairment (MCI). They were divided into two groups: one took 750 mg of anserine and 250 mg of carnosine daily, while the other received a placebo. The active group showed better improvement in the global Clinical Dementia Rating (gloCDR) score (p = 0.023). However, no significant improvements were observed in other psychometric tests, except for APOE4 positive (APOE4 (+)) subjects, who saw beneficial changes in MMSE (p = 0.025) and gloCDR (p = 0.026) [R].

24



Phosphatidylserine

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

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

TYPICAL STARTING DOSE

300 mg

Description

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

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

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

How it helps

Phosphatidylserine plays a crucial role in cell membrane composition and signaling, linked to improved mental focus and memory.

25



Blueberries

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

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

Description

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

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

- Heart health
- Cognitive function
- Normal blood sugar levels

How it helps

Anthocyanins, a type of flavonoid found in blueberries, have been linked to improvements in spatial memory and learning.

26



Dietary Omega-3 Fatty Acids

IMPACT

0 / 5

EVIDENCE

0 / 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

Dietary omega-3 fatty acids are crucial for building brain and nerve cells, playing an important role in learning and memory.

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Dietary Polyphenols

IMPACT

0 / 5

EVIDENCE

0 / 5

How to implement

Incorporate foods rich in dietary polyphenols into your daily diet. This can include consuming a variety of fruits like berries, apples, and grapes; vegetables such as onions and broccoli; nuts and seeds; as well as beverages like green tea and coffee. Aim for at least five servings of fruits and vegetables per day to achieve a beneficial intake of polyphenols.

Description

Polyphenols are antioxidants found in foods like fruits, vegetables, and tea, which may offer various health benefits, including reduced inflammation and improved heart health.

Polyphenols are plant components with antioxidant properties. They help reduce [oxidative stress](#) [R].

High levels of oxidative stress can damage our cells. Oxidative stress plays a role in many health conditions, including [R]:

- High blood sugar
- Type 2 diabetes
- Heart disease

You can get most polyphenols and other antioxidants from fresh fruits and vegetables [R, R].

How it helps

Polyphenols found in foods like dark chocolate and berries may enhance memory by promoting brain blood flow and neuronal growth.

Next Steps

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

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

Your lab results

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

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

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