THE ENCYCLOPEDIA OF NOOTROPICS

DISCLAIMER

Information provided in this ebook is meant to assist you in understanding nootropics and how they work. The purpose of this publication is to help you choose the best solutions for enhancing your cognitive capacity, memory, concentration, without putting your health at risk.

The Content is not intended to be a substitute for professional medical advice, diagnosis, or treatment.

All the information in this ebook is based on our research and have done our best to provide accurate information however please note that unintentional errors are a possibility.

Before starting a supplementation routine, it is highly recommended to speak to your healthcare professional.

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ACETYL-L-CARNITINE

Acetyl-L-Carnitine (ALCAR) is a true multi-purpose supplement that benefits both brain and body. ALCAR is a powerful nootropic and potent neuroprotectant that can improve cognition, enhance energy, and alleviate the effects of aging.

SUMMARY

Acetyl-L-Carnitine (ALCAR) is a naturally-occurring micronutrient that delivers macro benefits for the human brain and body. Not only is it a powerful nootropic that can increase focus\(^1\) and enhance general cognition,\(^3\) ALCAR is also a potent neuroprotectant that fights physical and mental fatigue,\(^2\) promotes cardiovascular health,\(^4\) and helps protect against the ravages of aging.\(^5\)

ALCAR is a highly bioavailable form of the lysine derivative L-carnitine, which is produced naturally by the body but can also be synthesized from animal proteins in the diet.

Unlike other forms of L-carnitine, which act primarily in the body proper and are typically used to enhance physical performance and alleviate blood flow issues, ALCAR readily crosses the blood-brain barrier and acts within the brain itself.\(^6\)

ALCAR is a precursor of the “learning neurotransmitter,” acetylcholine,\(^7\) which makes it a valuable nootropic. In addition, studies indicate it influences cerebral energy metabolism by upregulating levels of noradrenaline and serotonin and decreasing levels of the inhibitory neurotransmitter GABA.\(^8\)

It has also been shown to work within the brain cells themselves by helping maintain the integrity of the cellular mitochondria,\(^9\) the “powerhouse” portion of the cell in which nutrients are converted to energy. Age-related deterioration of the mitochondria is associated with a number of disorders, including Alzheimer’s and other neurodegenerative diseases.

ALCAR is available without a prescription as a nutritional supplement.
BENEFITS AND EFFECTS

Research has proven that ALCAR benefits both the brain and body in a surprising variety of ways, from enhancing cognitive abilities to increasing energy, reducing pain, and even preventing damage from alcohol consumption.

Cognitive Enhancer

ALCAR's primary nootropic function is the enhancement of the acetylcholine system. It is known to be a precursor of acetylcholine, the neurotransmitter most closely associated with memory and learning, and ALCAR has repeatedly been proven to improve and enhance brain function in individuals suffering from cognitive decline.

Studies show that it is particularly effective in reducing mental fatigue and enhancing cognitive function among the elderly[^10] and improving learning ability in patients with mild cognitive impairment associated with Alzheimer's disease.^[11]

Its effect on cognition in otherwise healthy individuals has not been thoroughly studied, but many users report positive results.^[12][13][14]

An Effective Neuroprotectant

ALCAR's potent antioxidant properties make it a powerful neuroprotectant, capable of preventing and even repairing damage caused by free radicals that scavenge and damage brain cells.^[15] Free radical damage is closely associated with aging and is implicated in age-related disorders, including Alzheimer's and Parkinson's diseases.

ALCAR also helps the brain rid itself of other toxins and is thought to reduce cell death due to excitotoxicity, a pathological process triggered by the overactivation of glutamate receptors.^[16]

ALCAR improves the neural network by strengthening nerves and signal receptors and has even been shown to protect the brain against the harmful effects of drinking alcohol.^[17]

Potential Treatment for Age-related Disorders

One of ALCAR's most exciting prospects is as a treatment for age-related neurological disorders, including Alzheimer's Disease. It has been shown to
effectively slow decline in Alzheimer's patients and reduces age-related memory loss.\[^{18}\]

**Pain Reliever**

Studies and clinical trials indicate that ALCAR is a reliable pain reliever, particularly effective at reducing chronic neuropathic pain.\[^{19}\]

In studies involving over 1770 patients with pain related to diabetic neuropathy, HIV, compression, and injury, subjects taking ALCAR saw a reduction in pain and improvement in nerve function.\[^{20}\]

**Treatment for Depression and Fatigue**

ALCAR has been shown to improve both fatigue and depression in patients with chronic illnesses. It improved the chronic fatigue syndrome associated with multiple sclerosis,\[^{21}\] and a series of randomized clinical trials indicated it was an effective antidepressant for a variety of patients, including people with fibromyalgia, hepatic encephalopathy, and aged patients with co-morbidities that made other antidepressants impractical.\[^{22}\]

**HOW IT WORKS**

Like all L-carnitine variants, ALCAR is synthesized primarily in the liver and kidneys and then transported to other tissues.

ALCAR has excellent bioavailability and is readily absorbed by the gastrointestinal tract. Once absorbed, its actions differ considerably from those of other forms of L-carnitine, which don't cross the blood-brain barrier. The acetyl groups that make ALCAR unique enable it to cross the blood-brain barrier readily and rapidly, and ALCAR's most important functions take place in the brain.

**Increased Production of Important Neurotransmitters**

ALCAR is known to be a precursor for the neurotransmitter acetylcholine, which is largely responsible for learning, memory, and cognitive function.

The ability to increase levels of acetylcholine is an important part of ALCAR's nootropic capabilities, but it's part of its neuroprotectant capability as well; low
levels of acetylcholine are strongly associated with increased risk of neurological disorders like Parkinson's and Alzheimer's diseases.

ALCAR has also been shown to increase levels of norepinephrine and serotonin, crucial neurotransmitters that play a major role in mood and brain function, while reducing levels of the inhibitory neurotransmitter GABA.\(^{[23]}\) The ability to modulate neurotransmitter production is one of the primary ways that ALCAR complements nootropics like the racetams, which enhance the action of neurotransmitter receptors in the brain.

**Enhanced Brain Metabolism and Neuroprotection**

ALCAR also targets brain metabolism, boosting cellular energy and acting as a potent neuroprotectant.\(^{[24]}\) Its significant antioxidant properties combat the effects of cellular oxidation and reduce the number of damaged cells in the brain, making ALCAR a powerful anti-aging agent.

Damaged fat cells known as lipofuscin, called “age spots” when they appear on the skin, also occur in the brain, and are strongly associated with age-related neurological disorders, loss of energy, and poor memory. By helping the brain eliminate these damaged cells, ALCAR both boosts brain function and significantly reduces the risk of neurodegenerative disorders.\(^{[25]}\)

It has also been shown to prevent brain deterioration during periods of stress.\(^{[26]}\)

ALCAR safeguards the brain and improves cognitive function in several ways, including preserving the integrity of the cellular mitochondria and strengthening the protective myelin sheath that surrounds the nerves in the brain.\(^{[27]}\) Mitochondrial breakdown is associated with a number of age-related disorders, including Alzheimer's and Parkinson's diseases, and weakening or damage to the myelin sheath has a severe adverse effect on vision, hearing, balance, coordination, and general brain function.

ALCAR has also been shown to strengthen and protect membrane signal receptors in the brain and help keep neurons healthy and functional. This protective ability not only increases the ability to form and maintain new memories, but it is also another way in which ALCAR complements and potentiates other nootropics.
Other Actions in the Body

ALCAR works in the body as well as the brain, performing many of the same functions as L-carnitine.

While the conversion of fat to energy isn't one of ALCAR's primary benefits, it does increase metabolic efficiency and provides many of the same energy-related benefits as other L-carnitine variants.

ALCAR has also been shown to be particularly effective at reducing hypertension\(^{[28]}\) and lowering insulin resistance.\(^{[29]}\)

DOSAGE

Recommendations for the standard daily dosage of ALCAR range from 1,000–3,000 mg daily.\(^{[30]}\)

Users report that taking ALCAR in the morning provides peak daytime brain function, though some users say ALCAR works best when split into two or more doses taken at intervals throughout the day. Taking ALCAR late in the evening may result in disruption of the normal sleep cycle.\(^{[31]}\)

ALCAR can be taken on an empty stomach, but users who experience gastrointestinal upset report that it can be minimized or avoided by taking ALCAR with food.\(^{[32]}\)

STACKING

ALCAR's effects are truly potentiated when combined with other nootropics. It is commonly included in stacks that feature nootropics in the racetam family, allowing them to each function to their fullest potential.

Since ALCAR works in tandem with the acetylcholine system, it may also be a good idea to include a choline precursor, such as Alpha GPC, in your stack.

ALCAR and Piracetam Stack

1x per day
ALCAR and Mind Lab Pro Stack

An easy and effective stack is to combine ALCAR with a preformulated nootropic blend, such as Mind Lab Pro by Opti-Nutra which contains 11 all-natural research-backed ingredients. Mind Lab Pro can serve as an excellent foundation to your stack as it is designed to improve all aspects of memory, mental performance, mood and stress resistance, maintenance, and brain repair.

For a detailed overview of its ingredients and effects, refer to our Mind Lab Pro review.

1x-2x per day

- 500 mg ALCAR
- 2 capsules Mind Lab Pro

SIDE EFFECTS

ALCAR is exceptionally safe and well tolerated. There does not appear to be any toxicity associated with the standard supplemental dosages of carnitine.

Side effects are rare, and those that are reported are minor and are often associated with high dosage. Nausea, the most commonly reported side effect, can usually be addressed by taking ALCAR with food. Other side effects include headaches, dry mouth, and restlessness.

WHERE TO BUY

ALCAR can be purchased directly from PureNootropics.net, a reliable supplier of specialty nootropic supplements.

If you prefer doing your online shopping on Amazon.com, we recommend sticking to products made by reputable brands such as NOW Foods Acetyl L-Carnitine.
CLOSING THOUGHTS

ALCAR is a remarkable natural supplement that offers a host of benefits for both brain and body.

A powerful brain booster in its own right, it works well with other nootropics and can act as a powerful complement and potentiator. It’s safe, affordable, very well tolerated, and readily available without a prescription.

For anyone who’s interested in better health, better cognitive abilities, and better defense against aging, ALCAR is a supplement to try.

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Adrafinil is a wakefulness-promoting drug that appears to have impressive nootropic properties. Used responsibly, it may be an effective tool for supporting lengthy mentally demanding tasks.

**SUMMARY**

Adrafinil is a stimulant that can increase energy, prevent fatigue, and enhance wakefulness, without causing anxiety or other side effects that are typically associated with stimulants.[1]

It may also improve mood, focus, and learning ability,[2][3] and may even help keep your brain healthy.[4]

Adrafinil is a prodrug, a biologically inactive compound that is converted to an active drug inside the body. When Adrafinil is metabolized, it is converted to modafinil, a stimulant that increases wakefulness without increasing anxiety and hyperactivity that is typical of amphetamine stimulants.[5][6]

Because modafinil is the active form of adrafinil, the pharmacological actions and effects of the two compounds are almost identical. However, only a portion of adrafinil is converted to modafinil. Therefore, a larger dose of adrafinil, compared to modafinil, is required to create the same effect.

Adrafinil was discovered by Lafon Laboratories in 1974, and two years later they isolated modafinil. Modafinil was selected for further clinical development (brand names Alertec, Modavigil, and Provigil) but both forms of the compound reached the market. Adrafinil was sold throughout Europe as the prescription drug Olmifon from 1986 until it was discontinued in 2011.

It remains unregulated in the US, Canada, and the UK and can be legally purchased in those countries.

It is widely used off-label to fight fatigue and enhance energy, and many users consider it an effective cognitive enhancer.[7]
The World Anti-Doping Association classifies adrafinil as a prohibited in-competition stimulant.[8]

Adrafinil has a low incidence of side effects and appears to have a low potential for dependence, tolerance, or addiction.[9]

Research on adrafinil is relatively limited, with most human studies focusing instead on its active form, modafinil.

**BENEFITS AND EFFECTS**

**Wakefulness Without Stimulant Side Effects**

Adrafinil's eugeroic or wakefulness-promoting properties are the most thoroughly studied and documented of its effects.

Extensive animal testing indicates that adrafinil increases both wakefulness and locomotion, and is particularly effective during periods when the research subjects would ordinarily be asleep.[10][11][12]

Testing also confirms that while adrafinil's wakefulness-promoting properties are on a par with amphetamine, it doesn't trigger the anxiety, hyperactivity, elevated heart rate, and other negative side effects associated with amphetamines.[13]

Research on adrafinil's wakefulness effects on human subjects is limited. However, the animal study findings are confirmed by tests in which human subjects were given modafinil, adrafinil's active form. Modafinil has been proven effective against excessive daytime sleepiness in humans with sleep disorders.[14][15]

A US Army test indicated that modafinil significantly diminished the effects of sleep deprivation among healthy subjects as well. Aviators who took modafinil during a period of 40 hours without sleep demonstrated the ability to perform highly demanding tasks, reduced slow-wave EEG activity, and lessened self-reported problems with mood and alertness compared to placebo.[16]

**Cognitive Enhancement**

In addition to promoting wakefulness and increasing energy, adrafinil may improve the speed of learning and enhance overall cognition.
A study on aged canines showed that treatment with adrafinil produced substantial improvement in learning, as indicated by a decrease in errors and an increase in successful task completion.[17]

The few studies on adrafinil's effect on human cognition suggest that adrafinil has significant nootropic potential.

A double-blind placebo-controlled study of 100 patients aged 65 and over, all of whom had vigilance problems severe enough to disrupt daily life, showed that those who took adrafinil felt happier and less sleepy than those on placebo and also had improved concentration, attention, and power of recall.[18]

In a similar test on 548 patients with attention and concentration problems, those who took adrafinil showed significant improvement in daily activities, attention, orientation, and memory.[19]

Clinical trials and research reviews of modafinil, adrafinil's active form, further confirm its potential for cognitive enhancement.[20][21][22]

**Antidepressant Potential**

Adrafinil is widely believed to have potential as an antidepressant.

Animal studies suggest that adrafinil may contribute to a significant improvement in aging and neurodegenerative disorders that involve depression.[23]

Human studies on this aspect of adrafinil are limited, but a two-month study involving 70 depressed patients showed that adrafinil treated depressive symptoms as effectively as clomipramine, a known antidepressant, with fewer adverse psychological side effects.[24]

In a 28-day study of 81 non-institutionalized patients, those who took adrafinil demonstrated significantly lowered depression and reduced apathy.[25]

**Neuroprotectant**

Adrafinil's active form has been shown to act as a potent neuroprotectant, helping keep brain cells healthy and intact and even slowing the degenerative process associated with Parkinson's disease.[26]
It has also been shown to counteract neuroinflammatory processes caused by methamphetamine use.[27]

Preliminary studies suggest its neuroprotective capability could play a role in the treatment of multiple sclerosis.[28]

**HOW IT WORKS**

The exact mechanisms of adrafinil are not entirely understood. However, researchers hypothesize that in its metabolized form it acts primarily in two specific areas of the brain, the hypothalamus and amygdala. This sets it apart from amphetamines and other psychostimulants that induce wakefulness by general widespread neuronal activation. This selective neuronal activation may explain adrafinil's ability to promote wakefulness without the side effects usually associated with stimulants.

One of the ways in which metabolized adrafinil promotes wakefulness is by stimulating the brain's orexin system. This system is responsible for regulating wakefulness, arousal, and appetite. The lack of orexin in the brain is the cause of the most common form of narcolepsy, and modafinil (adrafinil's active metabolite) is believed to address this by acting directly on orexin neurons. This stimulation, in turn, increases the production of histamines, which also play an important role in the regulation of the sleep-wake cycle.[29]

Metabolized adrafinil is also known to act on the adrenergic system, the part of the nervous system that releases adrenaline. It is believed to replicate the energy and alertness of an adrenaline release by acting as an adrenergic receptor agonist, boosting levels of adrenergic neurotransmitters in the brain.[30]

Adrafinil indirectly modulates dopamine levels, the neurotransmitter associated with the brain's reward and pleasure responses. Instead of directly stimulating dopamine release to create the rapid and highly amplified rise in dopamine levels typical of CNS stimulants, adrafinil's active metabolite is a dopamine reuptake inhibitor, gradually blocking the dopamine transporters from removing dopamine from the synapses.

This gradual and somewhat indirect action on the dopamine system is an important feature of how modafinil works because it reduces the “rush” type of euphoria that is associated with addiction.[31]
Adrafinil is also believed to positively modulate levels of two important excitatory neurotransmitters, glutamate and norepinephrine. Increased availability of these neurotransmitters may result in enhanced neuronal communication, which may improve memory, focus, and enhance general cognitive function.

Concentrations of adrafinil in the blood appear to peak at about one hour after ingestion, but because the conversion to its active form takes some time, neurological effects are generally not noted until after concentration peaks. There is no available data on adrafinil's half-life in humans, but animal studies suggest a half-life of approximately five hours.

**DOSAGE**

Dosage recommendations vary, but a range of 300–1200 mg per day of adrafinil for medical purposes has been demonstrated to be safe and effective.[32]

Most clinical studies had the subjects split the dose in two, with one dose being taken upon waking and then another at noon.

Due to its powerful effects, it's recommended to begin with the lowest effective dose (100–150 mg may be considered a low dose) and gradually increasing as needed.

Effects can typically be felt within an hour, and the duration of a single dose can be 3–4 hours.

Adrafinil should be ingested on an empty stomach.

**STACKING**

Adrafinil works efficiently on its own, but it also stacks very well with other nootropics, such as piracetam, phenylpiracetam, and Noopept.

**Adrafinil and Noopept Stack**

Stacking adrafinil with Noopept is a popular combination that is suited for extended periods of mental work where focus and attention are needed.

*As Needed (not more than once per day)*
SIDE EFFECTS

Adrafinil is generally well-tolerated when taken in moderate doses. However, some potential side effects have been documented, and they range from mild to serious.

Common side effects of adrafinil are headaches, dizziness, nausea, irritibility, aggression, and insomnia.

The most serious side effects are related to liver function. There is also the potential for elevated blood pressure and heart problems, particularly at higher doses.

Consult a medical professional before taking adrafinil if you have a history of liver or cardiovascular problems.

Due of its potent wakefulness-inducing properties, it should be taken in the morning to avoid interfering with sleep.

Taking adrafinil on a long-term basis is inadvisable, as it could potentially affect liver function. Using adrafinil in a cycle (for instance, two weeks on, one week off) is preferable.

If you experience any side effects when taking adrafinil, you should stop taking it and seek medical advice.

WHERE TO BUY

Adrafinil is legal for purchase in the USA, Canada, and the UK. For other countries, please research the laws in your country.

There are only a handful of suppliers for adrafinil, and it is advised to only purchase from reputable sellers. We recommend ordering adrafinil online via PureNootropics.net as they are a trusted seller of nootropics and their supplements are all verified by 3rd party labs to ensure purity.
CLOSING THOUGHTS

Adrafinil is a powerful nootropic that can fight fatigue, increase energy, improve mood, and may provide a significant cognitive boost. Its unique combination of mental and physical benefits may make it a valuable supplement for someone looking for more energy, stamina, and mental sharpness.

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**ALPHA GPC**

Alpha GPC is a natural cholinergic that has cognitive enhancing and neuroprotective properties.

**SUMMARY**

Alpha GPC is the common name for L-Alpha glycerclyphosphorylcholine, a cholinergic nootropic that occurs naturally but can also be taken as a supplement.

Alpha GPC is best known for quickly and reliably delivering choline to the brain for the creation of the cognition-boosting neurotransmitter acetylcholine.

It has powerful benefits for both brain and body and may enhance the full range of cognitive functions, promote cellular health, and help maintain essential neurochemical balance in the brain.[1]

Alpha GPC is naturally present in the body in small amounts, and it is also commercially manufactured as a supplement using purified soy lecithin.

Though there are a few dietary sources of alpha GPC (most notably, dairy products, organ meats, and wheat germ), studies show that it only becomes pharmacologically active at high concentrations that are only attainable via supplementation.

Alpha GPC is available without a prescription as a dietary supplement in the US and Canada. In some European countries, it is regulated as a prescription drug and used for the treatment of Alzheimer’s disease.

**BENEFITS AND EFFECTS**

Alpha GPC is well known for its positive physical and mental effects, both when taken alone and in combination with other nootropics. Though many of its benefits are cognition-oriented and related to its cholinergic properties, it has also been shown to promote physical health and muscular strength.


**Improved Memory and Enhanced Cognition**

Alpha GPC’s ability to increase choline levels makes it an effective cognition enhancer, facilitating production of the neurotransmitter acetylcholine.

This capability makes it of particular value in the treatment of memory loss and cognition deficits related to neurological disorders.

Extensive clinical trials involving thousands of participants have shown it to be an effective treatment for memory loss associated with a variety of age-related disorders, including Alzheimer’s disease, vascular dementia, and stroke.[2]

In Russia and some European countries, it is available as an oral or injectable prescription treatment for Alzheimer’s, sold under the brand names Gliatilin and Delecit and used to enhance memory, improve cognitive function, and help restore and maintain biochemical balance in the brain.

It is also prescribed to treat memory loss and cognition impairment related to stroke, traumatic brain injury, and dementia.[3]

Though most research has focused on age-related memory loss, alpha GPC’s memory benefits don’t seem to be limited to the elderly. In a study involving 32 healthy young volunteers, alpha GPC effectively restored memory following temporary chemically-induced amnesia.[4]

Anecdotal experience reports affirm that alpha GPC is an effective nootropic that provides a powerful cognitive boost, along with increased energy and motivation.[5][6][7]

**Neuroprotectant**

Alpha GPC has been shown to protect and support overall brain health by encouraging the development of new brain cells and enhancing the body’s ability to repair damaged cell membranes.

Research using animal models of vascular dementia show that alpha GPC had a measurable neuroprotective effect.[8]

Other studies indicate it may also have neuroprotective anti-aging capabilities.[9]
Increased Strength and Rapid Post-Workout Recovery

Alpha GPC's ability to stimulate the production of human growth hormone has not been extensively studied, but some believe it may improve capacity to build lean muscle mass and recover more quickly after a workout.

A pilot study indicated that a 600 mg dose of alpha GPC, taken 90 minutes before bench pressing, increased power by 14%.\(^{[10]}\)

Another small study involving eight healthy young men under 25 showed that a single dose of alpha GPC increased growth hormone secretion and hepatic fat oxidation, both of which are associated with increased energy and reduced recovery time.\(^{[11]}\)

**HOW IT WORKS**

Alpha GPC’s mechanisms of action have been extensively studied and are well understood, though the manner in which it affects some neuronal functions remains unclear.

Alpha GPC is structurally classified as a phosphatidylcholine, a lecithin phospholipid with a choline attachment. Choline is essential for the brain’s production of acetylcholine, the “learning neurotransmitter” that is crucial to all aspects of cognition, and this function is at the heart of alpha GPC’s nootropic properties.

A water-soluble supplement, alpha GPC is both fast acting and highly bioavailable when taken orally. It crosses the blood-brain barrier soon after ingestion, and most users notice effects within an hour. Each molecule of alpha GPC is made up of about 40% choline, which it delivers directly to the brain.\(^{[12]}\)

Alpha GPC’s ability to cross the blood-brain border makes it a particularly efficient cholinergic, surpassing other cholinergics and even choline itself at increasing circulating levels of choline in the central nervous system.\(^{[13]}\)

It has also been shown to increase levels of serotonin\(^{[14]}\) and dopamine,\(^{[15]}\) neurotransmitters that are important in the regulation of mood, energy, and motivation.
Alpha GPC also increases phosphatidylcholine levels throughout the body, which promotes strong cell structure, supports nerve signaling, and helps maintain the brain’s neurochemical balance.

Low levels of phosphatidylcholine are associated with neurological disorders including Alzheimer’s disease,[16] dementia,[17] and schizophrenia.[18]

**DOSAGE**

The recommended dosage for alpha GPC, based on studies on its use in alleviating cognitive decline, is 1200 mg daily, divided into three doses of 400 mg.[19]

This is also the dosing recommendation for Glilitin, the Russian prescription form of alpha GPC.[20]

For most adults the range of acceptable dosage is fairly wide; cumulative daily dosage of 300–1200 mg taken in one to three doses has been documented as safe and effective.

Alpha GPC is generally well tolerated when taken at recommended dosages.

As is the case with all supplements, it is wise to start with the lowest possible effective dose and build up gradually as needed.

**STACKING**

Alpha GPC is an excellent choline source for use in stacks with other nootropics, particularly the racetams.

**Alpha GPC, Noopept, Aniracetam Stack**

Here's an example of an alpha GPC stack that includes the popular nootropic Noopept and a racetam, aniracetam. This stack is designed for overall cognitive enhancement.

1–2x per day

- 300 mg Alpha GPC
- 20 mg Noopept
Review our article on how to create a nootropic stack for a general primer on basic combinations, ratios, and tips on designing your own nootropic stack.

**SIDE EFFECTS**

While alpha GPC is both safe and well tolerated in healthy adults, some side effects have been reported.

Users have occasionally experienced headaches, fatigue, nervousness, nausea, diarrhea, and gastrointestinal distress.

Supplementing with alpha GPC may also result in dizziness and low blood pressure in some individuals; if you are prone to hypotension, you should consult a medical professional before taking alpha GPC.[21]

Though no overdoses have been documented, adverse side effects are more commonly reported among users taking high dosages.

Alpha GPC is known to interact with scopolamine, which is used to treat motion sickness, post-operative nausea, and irritable bowel syndrome. Those using scopolamine are advised to consult a physician before taking alpha GPC.

Little research has been done on alpha GPC's effects on pregnant women, so those who are pregnant or nursing are advised to refrain from use.

**WHERE TO BUY**

You can buy alpha GPC from PureNootropics.net, our recommended supplier of nootropic supplements.

Alternatively, you can purchase alpha GPC on Amazon. We recommend the following brand for their high-quality products:

- [Double Wood Supplements Alpha GPC Capsules](#)
CLOSING THOUGHTS

Alpha GPC is a safe, well-tolerated, and highly effective nootropic.

It’s been the subject of decades of research and is recognized worldwide as a powerful memory enhancer, prescribed by physicians throughout Europe and Russia for a variety of memory and cognitive disorders.

Studies show that it’s also a neuroprotectant that helps maintain the biochemical balance of the brain. It promotes the production of human growth hormone, which may improve strength, shorten recovery time following exercise, and encourage the building of lean muscle mass.

If you're interested in a supplement that’s affordable, readily available, and has well-documented benefits for both brain and body, alpha GPC supplementation may be worth a try.

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Alpha-Gpc: Uses, Side Effects, Interactions, Dosage, and Warning

WebMd.com
ANIRACETAM

Aniracetam may sharpen focus and memory, reduce depression and anxiety, and even improve sleep. Its moderate price, low incidence of side effects, and widespread non-prescription availability make it a favorite among nootropic users.

SUMMARY

Aniracetam is a potent, fast-acting nootropic supplement that many consider a powerful cognitive enhancer and mood booster.

Discovered in the 1970s by Swiss pharmaceutical company Hoffman-LaRoche, aniracetam is sold as a prescription drug in Europe but is unregulated in the US, Canada, and the UK.

Aniracetam is an analog of piracetam, the first synthetic nootropic, and was originally developed as a more potent piracetam alternative.

Aniracetam is part of the racetam family of nootropics, a group of synthetic compounds that are similar in both chemical structure and mechanisms of action.

Like other racetams, aniracetam works primarily by modulating the production and release of neurotransmitters and other brain chemicals.

BENEFITS AND EFFECTS

Though there have been relatively few human studies on aniracetam, it has been extensively researched for decades, and a substantial body of animal studies appear to support its efficacy as a nootropic. Aniracetam has several documented benefits and effects.

Enhanced Memory and Learning Capacity

Aniracetam’s reputation as a memory enhancer is backed up by research that indicates that it can improve functional memory and even reverse memory impairment.[1]
In a study involving healthy human subjects, aniracetam was found to selectively improve various aspects of memory, including visual recognition, motor performance, and general intellectual functioning.\(^2\)

The means by which aniracetam enhances memory was investigated in animal studies which found that it positively impacts the pharmacological profile associated with learning and memory by elevating levels of acetylcholine, serotonin, glutamate, and dopamine in the brain.\(^3\)[\(^4\)

### Increased Focus and Concentration

Aniracetam is considered by many users to be one of the best nootropics for improving focus and concentration.\(^5\)

Though no human studies have centered on this aspect of the compound, its well-documented effects on acetylcholine, dopamine, and other important neurotransmitters strongly support this hypothesis.\(^6\)

Aniracetam also acts as an ampakine in stimulating the glutamate receptors that are involved in memory encoding and neuroplasticity, both of which are associated with focus and concentration.

### Anxiety Reduction

One of aniracetam’s most important characteristics is its potential as an anxiolytic, or anxiety reducer.

Animal studies showed that aniracetam effectively reduced measures of anxiety and increased social interaction in rats, possibly by a combination of dopaminergic and serotonergic actions.\(^7\)

Though there are no documented clinical trials or studies specifically focusing on aniracetam’s anxiolytic effect on humans, a clinical trial on its use as a dementia treatment did indicate that subjects taking aniracetam experienced less anxiety.\(^8\)

It is widely believed that the increased serotonin and dopamine that reduced anxiety in rats may have the same effect on people, and many users report decreased anxiety when taking aniracetam.
Anti-Depressant Properties

Aniracetam also proved to be an effective anti-depressant in aged rats, significantly diminishing stress-induced immobility and brain dysfunction associated with aging.\[^9\]

Japanese researchers investigating the use of aniracetam for treating patients with post-stroke depression indicated that the positive anti-depression effects were notably more pronounced in aged rats than in young ones, but whether that finding holds true for humans is not clear.

Aniracetam's anti-depression capability is believed to be primarily due to increased dopaminergic transmission and acetylcholine receptor stimulation.

Dementia Treatment

Clinical trials have shown aniracetam to be a safe and effective treatment for mild to severe dementia, enhancing mood and improving function for at least 12 months.\[^10\]

In one of the few human studies on aniracetam, a total of 276 cognitive disorder patients with a mean age of 71 years were divided into four groups to test the effectiveness of aniracetam as a dementia treatment, alone or in combination with other drugs. Over a period of 12 months, patients treated with aniracetam demonstrated significantly better cognitive performance, improved function, and enhanced mood and emotional stability.

HOW IT WORKS

Aniracetam's exact mechanisms of action are not completely understood, but decades of research give a good indication of how it impacts mood and cognition by its actions within the brain and central nervous system.

Aniracetam is a fat-soluble compound that is metabolized in the liver and quickly absorbed and transported throughout the body. It is known to cross the blood-brain barrier very quickly, and users frequently report feeling its effects in as little as 30 minutes.\[^11\]
In the brain, aniracetam upregulates the production of several crucial neurotransmitters, all of which are associated with mood, memory, and cognition:

**Acetylcholine** – Aniracetam may improve general cognition by enhancing activity throughout the acetylcholine system, which plays a pivotal role in memory, attention span, learning speed and other cognitive processes. Animal studies suggest that it works by binding to acetylcholine receptors, inhibiting receptor desensitization and promoting the synaptic release of acetylcholine.\[12\]

**Dopamine and Serotonin** – Aniracetam has been shown to increase levels of dopamine and serotonin in the brain, which in turn is known to relieve depression, boost energy, and lessen anxiety. By binding to dopamine and serotonin receptors, aniracetam inhibits the breakdown of these important neurotransmitters and restores optimum levels of both, making it an effective mood enhancer and anxiolytic.\[13\]

**Glutamate Transmission** – Aniracetam may be uniquely effective at improving memory and information storage because of the way it enhances the transmission of glutamate, the neurotransmitter that plays the primary role in neural activation. By binding to and stimulating the AMPA and kainate receptors, glutamate receptors strongly associated with information storage and the creation of new memories, aniracetam may improve neuroplasticity in general and long-term potentiation in particular.\[14\]

**DOSAGE**

While individual requirements vary, a daily dosage of 750–1500 mg is typically accepted as both safe and effective, though doses of up to 3000 mg daily have been documented as well-tolerated.

One human study involving individuals with senile cognitive disorders reported benefits over placebo at 1500 mg/day.\[15\]

It is always recommended to start with the minimum effective dose and gradually increase as necessary.

Like most nootropics in the racetam family, the effects of aniracetam may diminish if too much is present in the system, so dosage should be monitored closely.
Because of its relatively brief half-life of one to three hours, dosage may have to be repeated at intervals to maintain effects.

**STACKING**

Like most racetams, aniracetam works well on its own or in combination with other nootropics. Here are some common aniracetam stacks to consider.

**Aniracetam and Choline Stack**

The addition of a supplemental choline source is usually recommended when taking racetams, such as aniracetam. Choline, an essential nutrient which we consume in our diet, is a precursor to the neurotransmitter acetylcholine which responsible for various brain functions such as memory.

Supplementing a high-quality, bioavailable source of supplemental choline, such as alpha GPC or citicoline, may have nootropic effects of its own by ensuring the availability of the necessary building blocks for synthesizing acetylcholine.

This process is especially relevant when taking aniracetam since it works in part by stimulating the cholinergic system. Supplementing choline ensures that there is enough in your system to maximize aniracetam's effects while mitigating the potential common side effects that may result from the lack of acetylcholine in the brain such as headaches.

**1x–2x per day**

- 750 mg Aniracetam
- 300 mg Alpha GPC

**The PAO Stack**

The PAO stack, an acronym for piracetam, aniracetam, and oxiracetam, is a classic stack that involves combining these three popular nootropics.

Stacking aniracetam with piracetam and oxiracetam strengthens the perceived effects of all the components in the stack and could potentially extend the period of which the benefits are experienced. Including piracetam may also intensify aniracetam's anti-depressive and anti-anxiety properties. As previously mentioned, it's usually a good idea to include a choline source.
Before attempting a stack this complex, it is recommended that you have experience with the individual components of the stack before combining them. Only consider this stack once you are familiar with each of their respective effects and how you react to them.

Also remember when combining racetams, or nootropics in general, you should consume less than you'd usually dose if taken on their own because most nootropics have synergistic effects.

**1x–2x per day**

- 1,600 mg Piracetam
- 400 mg Aniracetam
- 400 mg Oxiracetam
- 300 mg Alpha GPC

**Aniracetam and Mind Lab Pro Stack**

An easy and effective stack is to combine aniracetam with a preformulated nootropic blend, such as Mind Lab Pro by Opti-Nutra which contains 11 all-natural research-backed ingredients. Mind Lab Pro can serve as an excellent foundation to your stack as it is designed to improve all aspects of memory, mental performance, mood and stress resistance, maintenance, and brain repair.

For a detailed overview of its ingredients and effects, refer to our Mind Lab Pro review.

**1x–2x per day**

- 750 mg Aniracetam
- 2 capsules Mind Lab Pro

**SIDE EFFECTS**

When taken at recommended dosages, aniracetam produces very few documented side effects, and those that are reported are both minor and temporary.

The most frequently reported side effects of aniracetam are headaches and mild nausea, both of which can often be successfully addressed by the addition of a choline source.[16]
High doses of aniracetam can result in a feeling of excessive nervousness, digestive discomfort, or both. If either of these effects occurs, try reducing dosage.

Some users report a loss of inhibition when taking aniracetam; while not necessarily an unwelcome side effect, a sudden feeling of loss of inhibition could be surprising and perhaps unsettling (especially in retrospect).

Each user should carefully monitor their response while taking aniracetam or any nootropic to ensure that the results are as expected and as wanted.

WHERE TO BUY

Aniracetam can only be ordered from a select few online vendors. Only buy from trusted sources to ensure you are getting a pure product.

We recommend you purchase your aniracetam from PureNootropics.net as they specialize in high-quality nootropics and all their batches tested for purity by 3rd party laboratories.

CLOSING THOUGHTS

Aniracetam is a popular nootropic, and with good reason: its reputation as a multifaceted cognitive enhancer that can improve memory and focus while reducing anxiety and lifting depression is backed up by decades of research.

It's powerful and fast-acting, has a low incidence of side effects, and is moderately priced. It's effective on its own (though additional choline is always recommended when taking any of the racetams), and many users report that it can add a new dimension to both mood and cognition when incorporated in a nootropic stack.^[17][18]

If you're looking for a nootropic that promotes calmness while sharpening cognitive skills, aniracetam may be the answer.

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ASHWAGANDHA

Ashwagandha is an ancient Ayurvedic herbal medicine that has plenty of promise for the modern world. Studies have shown it to be a potent adaptogen that may reduce anxiety, alleviate depression, and help the body cope with stress.

SUMMARY

Ashwagandha is a plant native to India, where it has been used for centuries as a tonic and restorative. Modern nootropic users are rediscovering this ancient herb, which may indirectly enhance cognition by fighting the effects of stress and improving mood.

Ayurvedic medicine uses Ashwagandha as a treatment for a variety of health issues, but it is most typically prescribed to extend longevity, promote recovery, and increase sexual function.

Extensive research confirms that Ashwagandha is a powerful adaptogen.[1] Adaptogens are natural substances that help the body adapt to stress and normalizes the function of the adrenal, endocrine, and other bodily systems.

Many users report that it reduces anxiety, enhances mood, and relieves insomnia and other sleep problems.[2]

BENEFITS AND EFFECTS

A growing body of research indicates that Ashwagandha is a safe and effective supplement with potential for protecting and enhancing cognitive function as well as promoting general health and well-being.

Reduce Stress, Anxiety, and Depression

Ashwagandha is best known to modern users for its documented ability to fight stress and anxiety.[3]
Clinical trials confirm that Ashwagandha has powerful anti-anxiety effects, capable of reducing both generalized and social anxiety in patients diagnosed with generalized anxiety disorder, but particularly effective in the context of chronic stress.[4]

Human studies also show that it has potential as a treatment for depression and panic disorder.[5]

One of the most promising effects of Ashwagandha is its ability to protect and promote overall health and well-being by reducing the levels of the stress hormone cortisol throughout the body.

High cortisol levels are strongly associated with a host of negative health implications, including impaired immune function, weight gain, high blood pressure, and heart disease.[6]

A 60-day regimen of Ashwagandha was shown to effectively reduce levels of serum cortisol in patients with chronic anxiety and mental stress.[7]

**May Indirectly Enhance Cognition**

There are limited studies on Ashwagandha's ability to directly improve memory and cognitive abilities, but its powerful adaptogenic capabilities may indirectly result in enhanced cognition.

Research has repeatedly demonstrated that anxiety can be a major factor in diminished cognitive ability, measurably impairing concentration, focus, and memory.[8]

In a small study of 20 healthy males, Ashwagandha was shown to improve both cognitive and psychomotor performance.[9]

In a review of Ayurvedic medicines with cognition-enhancing properties, Ashwagandha was noted as having potential as a treatment for childhood dyslexia.[10]

Animal studies show that daily supplementation with Ashwagandha effectively prevented cognitive decline by enhancing hippocampal plasticity.[11]

Ashwagandha is currently being studied as a possible treatment for cognitive decline related to dementia[12] and HIV.[13]
Treatment for Various Health Issues

Ashwagandha has also been shown to have potential as a treatment for a variety of disorders.

**Arthritis:** Ashwagandha’s Ayurvedic use as a treatment for joint complaints appears to be confirmed by recent research. A 2015 Indian study involving more than 100 patients with rheumatoid arthritis indicated that after taking Ashwagandha for several weeks, more than half the participants had an observable decrease in arthritic symptoms, including pain, mobility problems, and tender and swollen joints.[14]

**Alzheimer’s Disease:** Ashwagandha is being studied as a potential treatment for Alzheimer’s and other neurodegenerative diseases. Recent research suggests that Ashwagandha inhibits the formation of beta-amyloid plaques, the amino acid formations known to accumulate in the brains of Alzheimer’s patients and interfere with cognitive processes.[15] Animal studies also show Ashwagandha has the potential to act as a neuroprotectant, preventing damage from the glutamate neurotoxicity typically associated with neurodegenerative disorders.[16]

**Weight Management:** Ashwagandha’s adaptogenic properties may be useful in the treatment of obesity. A study of 52 people diagnosed with chronic stress showed that two daily doses of 300 mg of Ashwagandha resulted in a significant drop in perceived stress and food cravings, as well as a decrease in serum cortisol and body weight.[17]

**Improved Muscle Strength:** Ayurvedic medicine’s classical use of Ashwagandha as a strength-improving tonic appears to be confirmed by a series of recent studies. Healthy males taking 300–1250 mg of Ashwagandha daily demonstrated measurable improvements in muscle strength in comparison to participants taking a placebo. Those on the Ashwagandha regimen increased their bench press and leg extension capability as well as muscle size, serum testosterone, and muscle recovery.[18]

**Male Sexual Dysfunction and Infertility:** A pilot study involving 46 male participants, all of whom had low sperm counts, showed remarkable results after a three-month regimen of 675 mg daily of high-potency Ashwagandha known as KSM-66. At the end of the trial, the participants taking Ashwagandha had a 167% increase in sperm count, a 53% increase in semen volume, and a 57% increase in sperm motility.[19]
Animal tests also showed that Ashwagandha increased sexual behavior, increased testicular sperm production, and raised serum testosterone levels.\textsuperscript{[20]}

**Blood Pressure:** Studies indicate that Ashwagandha can produce a moderate but measurable reduction in blood pressure. In a 2010 study involving approximately 100 participants, over six months, an average 1.6\% decrease in systolic pressure and 5.6\% decrease in diastolic pressure was observed, along with a minor decrease in heart rate.\textsuperscript{[21]}

**Chemotherapy-induced Fatigue:** While Ashwagandha is not a treatment for cancer, it appears to be a valuable adjunct therapy for cancer patients. A 2013 trial involving over 100 breast cancer patients in all stages of the disease showed that ashwagandha effectively reduced chemotherapy-induced fatigue and improved quality of life.\textsuperscript{[22]}

**Rejuvenation and Overall Health Improvement:** A comprehensive scientific review of existing studies on Ashwagandha confirms a variety of therapeutic effects with no demonstrated toxicity. The review concluded that Ashwagandha has anti-inflammatory, antitumor, antistress, antioxidant, immunomodulatory, and rejuvenating properties, capable of exerting a positive influence on the endocrine, cardiopulmonary, and central nervous systems.\textsuperscript{[23]}

**HOW IT WORKS**

The exact mechanisms by which Ashwagandha works are not entirely understood. However, its main active substances are alkaloids and steroidal lactones that are collectively known as withanolides. The withanolides are believed to be responsible for Ashwagandha's physiological activity.

One of the known mechanisms of withanolides is the modulation of circulating levels monoamine oxidase and GABA in the brain.\textsuperscript{[24]} GABA is an amino acid that acts as an inhibitory neurotransmitter, countering to some extent the effects of the stimulatory neurotransmitter glutamate and thus serving as a natural tranquilizer.

Animal studies demonstrate that Ashwagandha enhances calmness without creating drowsiness as well as anti-depressant effects.\textsuperscript{[25]}

Ashwagandha is believed to promote the formation of dendrites. Dendrites are extensions of nerve cells that receive signals from other neurons.\textsuperscript{[26]} Increased
Dendrite formation is considered to be a marker of increased connectivity in the brain and is associated with enhanced cognition.

The active withanolides in Ashwagandha are also believed to have substantial antioxidant properties.[27] Antioxidants are chemical molecules that prevent potentially damaging oxidizing agents from affecting cells in the brain and body. Cells that have been affected by oxidation can turn into free radicals, molecules that scavenge and damage surrounding cells. The action of free radicals can trigger a chain reaction of cellular devastation that is strongly associated with aging and a variety of diseases, including Alzheimer’s disease.

Ashwagandha also appears to be an effective anti-inflammatory agent.[28] Inflammation is implicated in a wide range of disorders, and many of Ashwagandha's benefits are believed to be associated with its anti-inflammatory properties.

**DOSAGE**

Dosage recommendations for Ashwagandha extract, based on human studies, typically range from 300–500 mg, taken twice per day.[29][30]

Ashwagandha should be taken with food.

Ashwagandha may increase the effects of tranquilizers, sedatives, or other anxiolytics, including alcohol and some nootropics.

It may also potentiate drugs taken to reduce blood pressure or regulate blood sugar, so use with caution if you're taking other medications.

**STACKING**

To fully experience Ashwagandha’s cognitive enhancing effects, it does best when stacked with other supplements.

Have a look at our All-Natural Nootropic Stack for some inspiration of a stack that contains Ashwagandha.
SIDE EFFECTS

Ashwagandha appears to be exceptionally safe and well-tolerated when taken in moderate doses.

Side effects are rare and are typically associated with large doses

The most commonly reported side effects are indigestion and diarrhea, abdominal discomfort, and drowsiness.[31]

Ashwagandha could potentially interact with other supplements and medications. It may increase the effects of sedative drugs and other anxiolytics.

Women who are pregnant or nursing should not take Ashwagandha.

Infants and children should not take Ashwagandha due to limited safety information for these populations.

WHERE TO BUY

We recommend Organic India Ashwagandha capsules that can be found on Amazon.

Another option is to order directly from a specialty vendor such as PureNootropics.net as they carry Ashwagandha in its highly concentrated KSM-66 extract form, as well as a wide selection of other nootropics.

CLOSING THOUGHTS

Ashwagandha has been extensively studied and shown to be a potent adaptogen that helps the body and brain adapt to stress.

It’s also a proven anxiolytic that may improve mood and help regulate sleep. Its neuroprotective properties may help treat and prevent neurological disorders.

While Ashwagandha does not provide an immediate cognitive boost, it may indirectly increase cognitive abilities by lowering anxiety, lifting depression, and improving the quality of better sleep.
It's safe, well-tolerated, non-toxic even in large doses, and has very few side effects.

However, like most nootropics, its mechanisms of action are not entirely understood. Much of the research on some aspects of Ashwagandha has involved animal rather than human studies, and the full extent of its effects and potential interactions is unknown.

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Ashwagandha WebMD.com
Bacopa monnieri is an ancient nootropic herb that may reduce anxiety, enhance cognition, and even protect the brain against aging.

**SUMMARY**

Bacopa monnieri is a perennial herb native to marshy areas of India, Asia, and South America, that has been used for centuries in traditional Ayurvedic medicine to prevent disease, promote healthy longevity, and strengthen the mind.[1]

Extensive research has been able to confirm that Bacopa may be an effective anxiety reducer,[2] a potent cognitive enhancer,[3] and a powerful brain protectant with potential as a treatment for Alzheimer's disease.[4]

Bacopa's legal status varies throughout the world, though in most countries, including the US and Canada, it is unregulated and can be legally purchased and consumed. In Bangladesh, India, Malaysia, Pakistan, Sri Lanka, and Australia Bacopa is regulated as an ingredient in medicinal preparations.[5]

**BENEFITS AND EFFECTS**

Bacopa monnieri is considered a powerful adaptogen, or natural substance that helps the body handle stress by normalizing bodily processes.[6]

It's widely used throughout Asia, both as a pharmaceutical ingredient and as a traditional treatment for a wide variety of disorders ranging from skin diseases to psychological disorders.

In the Western world, it is usually taken for its nootropic and anxiolytic properties, and for its potential as a treatment for neurological diseases.

**Memory Enhancement**

Traditional medicine has used Bacopa monnieri as a memory booster for centuries, and modern research confirms that it may improve both memory formation and speed of recall.
Studies have shown that Bacopa significantly improved memory in groups of older people, and ongoing research is investigating its potential for treatment of memory-impairing neurological disorders including Alzheimer's disease.

Bacopa's memory-enhancing capabilities don't appear to be limited to the elderly. In a study involving 76 adults between 40 and 65 years of age, Bacopa monnieri was shown to increase the ability to retain new information, and follow-up testing indicated that it also decreased the rate of forgetting newly-acquired information.

In a six-week placebo-controlled clinical trial involving a group of 60 medical students, those who received Bacopa monnieri showed statistically significant improvement in all tests related to memory and cognitive function.

Anecdotal reports from users that have supplemented with Bacopa appear to corroborate its memory enhancing effects.

**Improved Learning Ability**

Bacopa monnieri has been shown to augment cognitive processing, making learning new things faster and easier.

A study on school-aged children indicated that Bacopa supplementation significantly improved spatial learning.

A 2015 review of five Indian studies on children and adolescents suggests that Bacopa supplementation resulted in significant, consistent improvements in language use, cognition, and memory.

Another study examining the effects of Bacopa on cognitive function in healthy adults noted significant improvements in visual processing speed, learning rate, and memory consolidation.

Bacopa monnieri has also been shown to enhance learning capacity in animal models, both in animals under stress and in animals in which non-spatial short-term memory, spatial working memory, and long-term fair memory were all artificially impaired. In these and other animal tests Bacopa successfully ameliorated cognitive dysfunction.

Many users report that taking Bacopa monnieri improved their overall cognition, particularly their memory.
Anxiety Reduction and Stress Relief

Bacopa monnieri has traditionally been used to relieve anxiety and ease the symptoms of stress.

Current research appears to confirm its anxiolytic properties, in both human and animal studies.

Though human studies on Bacopa’s anxiolytic potential are limited, those that exist are positive. A six-week study involving 54 healthy, non-demented volunteers over 65, Bacopa supplementation significantly reduced anxiety and depression.[20]

In a 12-week placebo-controlled study on 72 men and women between 30 and 60, the participants who took 450 mg of Bacopa daily scored significantly lower on state anxiety than their counterparts who took placebo.[21]

Animal studies compare Bacopa favorably to other plant extracts for the effective treatment of anxiety and other psychiatric disorders,[22] and one study concluded that a standardized extract of Bacopa worked as effectively as lorazepam, a well-known benzodiazepine anxiolytic, in reducing anxiety in mice.[23]

Anti-Aging Potential

One of the most exciting aspects of Bacopa monnieri is its potential as an anti-aging supplement.

Traditionally used in Ayurvedic medicine as a brain tonic, Bacopa has been shown to have powerful antioxidant properties that can protect the brain against environmental stressors implicated in the cognitive impairment related to aging, Alzheimer's disease, and other neurological disorders.[24][25]

Bacopa has also been shown to have a therapeutic effect on Parkinson's disease, preventing the dopaminergic neurodegeneration characteristic of the condition.[26]

In animal studies, Bacopa monnieri was shown to reduce the age-related neuroinflammation that is closely associated with neurodegenerative diseases,[27][28] and it has been proven to promote production and expression of Nerve Growth Factor, a neuropeptide involved in the growth and survival of neurons.[29]
HOW IT WORKS

Bacopa monnieri impacts many body systems, but its nootropic, anxiolytic, and neuroprotectant effects are largely created by its ability to promote neural communication and modulate the release of certain neurotransmitters.\[30\]

One important way Bacopa improves neural communication is by enhancing the growth and proliferation of dendrites, the “branched” nerve cell extensions along which neural impulses travel. Research has shown that 4–6 weeks of treatment with Bacopa monnieri extract induced structural changes in neurons that improved learning and memory.\[31\]

In addition, the active ingredient in Bacopa monnieri extract has been shown to stimulate nerve cells and make synapses more receptive to nerve impulses. It is also thought to stimulate activity in the hippocampus by increasing the activity of kinases, proteins that regulate cellular pathways.\[32\] Because the hippocampus is integrally involved in virtually all cognitive activity, this is believed to be one of the most important ways in which Bacopa boosts brain power.

Treatment with Bacopa monnieri has been shown to significantly upregulate levels of serotonin, catecholamine, GABA, glutamate, and acetylcholine, the neurotransmitter most closely associated with cognition. It was also shown to have an inhibitory effect on cholinesterase, a brain chemical which breaks down acetylcholine, and this activity is believed to further increase acetylcholine levels.\[33\]

Though it doesn't directly upregulate the production of the neurotransmitter dopamine, Bacopa has been shown to protect dopamine receptors against oxidative stress and prevent dopamine depletion.\[34\] This makes it particularly interesting as a possible treatment for Parkinson’s disease, an age-related neurological disorder characterized by low dopamine levels.

Bacopa monnieri’s ability to reduce anxiety is believed to be due in large part to its ability to raise brain levels of both serotonin and GABA, a powerful inhibitory neurotransmitter that acts to prevent anxiety by restricting the firing of neurons that are over-excited by stress.
**DOSAGE**

The standard dose of Bacopa monnieri is 300 mg, assuming that the total weight is comprised of 55% bacosides, or active compounds.

The percentage of bacosides can vary among products but should be stated on the supplement’s label.

Bacopa monnieri is available in both capsule and powder form.

It is fat-soluble and should be taken with food or milk; in Ayurvedic medicine, it is traditionally taken with clarified butter or ghee. It can be dissolved in hot liquid but has a strong taste that some find objectionable.

Though Bacopa monnieri may work relatively quickly as an anxiolytic, it must be taken regularly over several weeks to fully experience its cognitive enhancement effects.

Achieving maximum cognitive enhancing benefits from Bacopa may require an extended regimen of regular doses over two to three months.\[35\]

Bacopa appears to be very well tolerated. No incidents of toxicity were noted in human trials, and in animal studies administration of very large doses (up to 5,000 mg daily) over 270 days did not produce any toxicity.\[36\]

Some users find that the time of day that they take Bacopa monnieri is important because of how it affects their sleep and alertness. Many say it helps them sleep, though others say it can disrupt sleep, and some users report feelings of lethargy and unwanted daytime drowsiness, particularly when taking higher doses.\[37\][38]

As with any supplement, it’s wise to start with the lowest possible effective dose and closely monitor reactions and effects, adjusting dosage and schedule accordingly.

**STACKING**

Bacopa monnieri works well on its own but is considered by many to be at its best in combination with other nootropics.
It is frequently combined with other herbal supplements for general health benefits, but for cognitive enhancement and mood management, it works well to round out just about any nootropic stack.

For anti-anxiety and stress relief, it works well in a stack with other anxiolytic nootropics like aniracetam or phenibut.

For more mental and physical energy, Bacopa pairs well with oxiracetam or phenylpiracetam.

For optimal cognitive performance, it works well in combination with piracetam, pramiracetam, or adrafinil.

**Bacopa Monnieri Stack for Universal Cognitive Enhancement**

For a preformulated nootropic that contains a blend of 11 cognitive enhancing supplements, including Bacopa monnieri, designed to optimize a wide array of cognitive functions, we recommend Mind Lab Pro.

Mind Lab Pro's strategy aims at all aspects of memory, mental performance, mood and stress resistance, and brain repair, and maintenance. Their combination of nootropics is designed to affect brain energy, neurotransmitters, brain blood flow, brain waves, neuroprotection, and regeneration.

Read our Mind Lab Pro review for a detailed overview.

**SIDE EFFECTS**

Though Bacopa monnieri is generally safe and well tolerated, there are some potential side effects.

The most common side effects of Bacopa are indigestion, dry mouth, increased bowel movements, and fatigue. These side effects may be most noticeable when starting supplementation and may disappear as the body becomes accustomed to Bacopa. Reducing the amount taken daily may also relieve side effects.

An animal study found that Bacopa temporarily reduced sperm count after several weeks of supplementation. Sperm count levels returned to normal after supplementation was suspended for 56 days.
WHERE TO BUY

Bacopa monnieri is widely available via different vendors ranging from supplement stores to specialized online vendors. Keep in mind that not all Bacopa available on the market is of high quality.

There are many options available on Amazon.com of which we recommend either Double Wood Supplements Bacopa Monnieri Capsules or Pure Mountain Botanicals Bacopa Capsules.

Bacopa monnieri can also be purchased directly from PureNootropics.net, our recommended supplier of nootropics.

Alternatively, if you’d like to take a supplement that contains a blend of 11 cognitive enhancing nootropics, including Bacopa monnieri, we recommend Mind Lab Pro. Read our Mind Lab Pro review for a detailed overview.

CLOSING THOUGHTS

Bacopa monnieri is an ancient herbal supplement that has a lot to offer to the modern world.

Used for many centuries as a mental and physical tonic and treatment for a variety of ailments, it’s now recognized as a promising nootropic, anxiolytic, and neuroprotectant.

It’s safe, well tolerated, and has very few side effects.

A growing body of research suggests that it's an effective memory booster and cognitive enhancer that could also help protect brains against aging and neurodegenerative diseases.

One thing Bacopa monnieri isn’t, however, is fast acting. Though it may be acutely effective in relieving anxiety, studies show that it must be supplemented for weeks, or even months, to fully benefit from its cognitive enhancing effects.

If you’re looking for an all-natural supplement that can boost your brain power, relieve stress and anxiety, and even protect your brain against aging – and you have
the patience to keep up a regular regimen over at least two months – Bacopa could be an excellent choice.

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Bacopa WebMD.com
CDP CHOLINE

CDP Choline is a safe, powerful, and extremely well-tolerated memory booster and cognitive enhancer that works well on its own and in combination with other supplements.

SUMMARY

CDP Choline, also known as citicoline, is a powerful nootropic supplement best known for its potential to enhance memory and protect the brain against memory loss.\[1\]

However, enhanced memory is only part of the CDP choline picture; it has also been shown to heighten focus, increase mental energy, improve reaction time, and provide better clarity of thought.\[2\]

Recent studies indicate that in addition to boosting many aspects of cognition, CDP choline may also be a useful treatment for a host of medical problems including head injuries,\[3\] stroke,\[4\] age-related neurodegenerative diseases,\[5\] glaucoma,\[6\] and even cocaine dependency.\[7\]

For nootropic users, one of the most interesting aspects of CDP Choline is its ability to amplify and enhance the effects of other nootropic supplements. As a cholinergic precursor that helps increase acetylcholine levels in the brain,\[8\] CDP choline works synergistically with racetam class nootropics, significantly potentiating the effects of memory boosters such as piracetam and pramiracetam while preventing the minor but annoying headaches that are common side effects associated with racetam supplementation.

CDP choline is available by prescription only in some countries, including Brazil and parts of the EU. In the US and Canada, it is unregulated and is sold as a nutritional supplement.\[9\]

BENEFITS AND EFFECTS

CDP choline is a powerful nootropic supplement that potentiates other nootropics and works on its own to enhance many aspects of cognition and brain health.
Memory Enhancement

CDP Choline is perhaps best known for its ability to improve memory and prevent memory loss. It is frequently associated with anti-aging and has been studied as a potential treatment for Alzheimer’s disease.\textsuperscript{[10]}

Increased Mental Energy

Maintaining peak mental energy is important for everyone, from students facing exams to older people suffering from the mental slow-down often associated with aging. Clinical trials have shown that CDP Choline has a significant positive effect on mental energy, increasing frontal lobe bioenergetics and mitigating the cognitive declines associated with aging.\textsuperscript{[11]}

Better Focus and Concentration

CDP choline can increase the ability to concentrate for longer periods with less distraction, enhancing the focus needed for studying, mastering a new skill, or completing any complex and mentally demanding task. Studies show that CDP choline can improve concentration even in serious conditions including stroke, brain injury, and Alzheimer's disease.\textsuperscript{[12]}

Potentiating and Amplifying Other Nootropics

Many nootropic users consider CDP choline a must-have when constructing any stack or combination of supplements. An outstanding choline source, it works particularly well with racetam class nootropics, making their effects stronger and at the same time preventing the minor headache that is sometimes associated with racetams. It has been shown to delay the onset of cognitive deterioration in Alzheimer’s disease when used in combination with piracetam.\textsuperscript{[13]}

HOW IT WORKS

Unlike those of many nootropics, CDP choline’s mechanisms of action have been extensively studied and understood.

CDP choline is a psychostimulant nootropic that works in several ways:

- Restores and repairs neuronal membranes\textsuperscript{[14]}
- Increases the levels of dopamine, adrenaline, and norepinephrine in the central nervous system[^15]
- Enhances the production of the “learning neurotransmitter,” acetylcholine[^16]

CDP choline is a phospholipid that is hydrolyzed in the intestines and rapidly absorbed. On absorption, CDP choline splits into choline and cytidine and is resynthesized in the liver and other tissues. It then disperses throughout the body, crossing the blood-brain barrier and entering the central nervous system.[^17]

The cytidine is then converted into uridine, a nucleotide base that is crucial to neural membrane synthesis and is believed to enhance cognition. The released choline acts as a cholinergic, increasing levels of choline in the brain.

**Interaction with Racetam Class Nootropics**

CDP choline’s post-absorption action as a cholinergic makes it an ideal complement to racetam class nootropic supplements like piracetam, oxiracetam, and aniracetam, which draw heavily on choline for their brain-enhancing functions.

Choline is the precursor to the neurotransmitter acetylcholine, which is essential for many aspects of cognitive function such as learning and memory. Racetam class nootropics like piracetam are considered acetylcholine agonists, compounds that increase the production and release of acetylcholine by stimulating the appropriate neurotransmitter receptor sites.

When sufficient choline is present, the increased production and release of acetylcholine creates significant cognitive enhancements, ranging from better memory to better focus, clearer thought, faster recall, and even enhanced sensory perceptions. But when choline supplies in the brain are insufficient the effect of racetam supplements is significantly diminished. Additionally, the minor but annoying headaches that are occasionally associated with racetam use are mainly attributable to insufficient choline.

For these reasons, many nootropic users consider CDP choline a must when assembling a stack that includes racetams. Each is a powerful brain enhancer on its own, but together they’re far more potent than either one could be on their own.

Users report that taking CDP choline boosts mood and lifts brain fog.[^18] Others report that adding CDP choline to stacks containing racetams helps prevent
headaches, eliminate racetam-related depression, and improves libido and erectile function.\textsuperscript{[19][20][21]}

**Interaction With Catecholamine Neurotransmitters**

Studies show that CDP Choline impacts levels of adrenaline, norepinephrine, and dopamine, crucial neurotransmitters that are referred to as catecholamines.\textsuperscript{[22]}

The choline component of CDP choline is believed to directly increase serum levels of adrenaline and norepinephrine, while the uridine component is thought to augment dopaminergic signaling.

CDP choline has a neuroprotective effect on dopamine cells and has been shown to protect dopaminergic neurons from damage by toxins associated with Parkinson’s disease.

**DOSAGE**

A daily cumulative dose of anywhere from 250–1000 mg, either in a single dose or in two doses 8 to 12 hours apart, is generally considered safe and effective.\textsuperscript{[23]}

Dosages used in studies include 1000–2000 mg (to combat cognitive decline); 600 mg (for chronic cerebrovascular disease); and 500–2000 mg per day (for immediate treatment of ischemic stroke).\textsuperscript{[24]}

Because CDP choline is so well tolerated, a wide range of doses have been documented without significant side effects.

Interestingly, an MIT study shows that the effects a dose of 4000 mg were not measurably different from those of a 2000 mg dose, which seems to indicate there is little value in taking very high doses.\textsuperscript{[25]}

It is water soluble, and as much as 95% of an oral dose is absorbed by the body.

**STACKING**

For nootropics users, one of the most important aspects of CDP choline is its value as a potentiator for other nootropics. This is especially true for racetams, which
really shine when paired with CDP choline. The ratios and actual dosages vary depending on which of the racetam class nootropics you use.

Here are some example stack ideas to get you started.

**Piracetam and CDP Choline Stack**

Good for overall cognitive enhancement, with neither stimulant nor calming properties.

1x per day
- 300 mg **CDP Choline**
- 4800 mg **Piracetam**

**Pramiracetam and CDP Choline Stack**

Similar to the piracetam stack, but the racetam component is considerably stronger (pramiracetam is 10 or more times as powerful as piracetam), so lower doses are needed to achieve optimal effects. When taken with CDP choline, pramiracetam's cognitive enhancements, which include improvement of memory, thought clarity, focus, and sensory perception, will be potentiated.

1x–2x per day
- 300 mg **CDP Choline**
- 300 mg **Pramiracetam**

**Oxiracetam and CDP Choline Stack**

This powerful and popular racetam, sometimes referred to as the “speedy racetam,” combines the cognitive enhancements of piracetam with a major boost in energy, alertness, and wakefulness.

This stack has a marked stimulant effect and could potentially interfere with sleep if taken late in the day.

1x–2x per day
- 300 mg **CDP Choline**
- 750 mg **Oxiracetam**
Aniracetam and CDP Choline Stack

Aniracetam boosts cognitive abilities while creating a relaxing and sedative-like effect. This stack has a noticeable calming effect.

**1x–2x per day**

- 300 mg CDP Choline
- 750 mg Aniracetam

CDP Choline Stack for Universal Cognitive Enhancement

For a preformulated nootropic that contains a blend of 11 cognitive enhancing supplements, including CDP choline, designed to optimize a wide array of cognitive functions, we recommend [Mind Lab Pro](#).

Mind Lab Pro’s strategy aims at all aspects of memory, mental performance, mood and stress resistance, and brain repair, and maintenance. Their combination of nootropics is designed to affect brain energy, neurotransmitters, brain blood flow, brain waves, neuroprotection, and regeneration.

Read our [Mind Lab Pro review](#) for a detailed overview.

**SIDE EFFECTS**

Clinical trials and studies indicate that CDP choline has no documented serious side effects, even at high doses.[26]

Toxicological tests have shown that it has no serious effects on the cholinergic system and it is perfectly tolerated.[27]

Indigestion, headache, insomnia, and diarrhea have infrequently been reported as possible side effects.

In addition, some users report that high doses of CDP choline can lead to depression, lethargy, and anxiety.[28][29][30]

No studies on the effect on pregnant women have been completed, so those who are pregnant or breastfeeding are advised to refrain from supplementing with CDP choline.
WHERE TO BUY

We recommend buying CDP choline from PureNootropics.net as they are a trusted supplier of nootropics. All their products are tested for purity by 3rd party laboratories to ensure purity.

If you prefer to do your shopping on Amazon, make sure to choose high-quality products, such as Double Wood Supplements CDP Choline Capsules.

Alternatively, if you’d like to take a supplement that contains a blend of 11 cognitive enhancing nootropics, including CDP choline, we recommend Mind Lab Pro. Read our Mind Lab Pro review for a detailed overview.

CLOSING THOUGHTS

CDP choline is an excellent addition to any nootropic user’s supplement regimen.

On its own, it’s a proven memory enhancer, known to improve recall and prevent memory loss related to aging, illness, and injury. It provides increased mental energy, better focus, and clearer thought.

In combination with other nootropics it’s a powerful potentiator, and when stacked with racetams it creates synergistic effects that take cognitive enhancement to a level that neither supplement could reach without the other.

Clinically tested and studied for decades, CDP choline has been shown to be extremely well tolerated even at high doses, though high doses are not necessary to achieve optimal results.

There are no documented serious side effects, and it’s approved for medical treatment in both Europe and Japan.

CDP choline is an affordable, readily available supplement that has a strong and growing following among nootropic users. If you want to get the most from your nootropic stacks, CDP choline is a choline source worth trying.
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CENTROPHENOXINE

Centrophenoxine is an excellent choline source that can also improve memory and mental performance, enhance and protect brain health, and slow the effects of brain aging.

SUMMARY

Centrophenoxine, also known as meclofenoxate or Lucidril, is a well-known and respected nootropic that has proven itself for over five decades of use and rigorous clinical testing.

Centrophenoxine was developed in 1959 by scientists at the French National Scientific Research Center as a treatment for Alzheimer’s disease, insufficient blood flow to the brain,[1] and age-related cognitive decline.[2]

Research has shown centrophenoxine to be a powerful memory booster and anti-aging agent.

In Europe, it’s prescribed for the treatment of age-related memory loss, but it’s available over the counter as a dietary supplement in the US and Canada, where it is most frequently used for its cognitive enhancing properties.

Centrophenoxine is classified as a cholinergic, a substance that delivers or enhances the action of choline.[3] Choline is the precursor of the neurotransmitter acetylcholine, which is strongly associated with many aspects of cognitive function. Its cholinergic capability makes it an efficient and effective nootropic on its own and a powerful potentiator when used in combination with other nootropics.

Centrophenoxine has also been shown to act as an effective antioxidant[4] and neuroprotectant,[5] reversing the destructive effects of toxins and free radicals in the brain and effectively slowing cognitive decline.

BENEFITS AND EFFECTS

Centrophenoxine offers a wide range of benefits for both brain and body:
Enhances Memory and Learning

Centrophenoxine has been shown to enhance the formation, storage, and retrieval of memories.

In a study of healthy elderly human subjects, centrophenoxine appeared to improve long-term memory formation and increase mental alertness.\cite{6}

An animal study on old mice demonstrated that centrophenoxine was able to increase the speed at which they were able to learn a new task.\cite{7}

Centrophenoxine has also been shown to increase synaptic plasticity\cite{8} which in turn may enhance fluid intelligence, or the ability to solve problems without relying on acquired knowledge.

Anti-Aging and Neuroprotective Properties

Centrophenoxine has been shown to increase the lifespan of rats up to 50%.\cite{9}

Research shows that centrophenoxine is an aggressive free radical scavenger and powerful antioxidant that protects the brain from age-related deterioration, flushes out toxins, and repairs damaged cells.\cite{10}

Particularly notable is centrophenoxine's ability to repair the cellular damage done by the oxidation of fat in cell membranes\cite{11} which is strongly associated with neurodegeneration and other age-related disorders.

Centrophenoxine has also been shown to reduce accumulation of lipofuscin (age pigment) that accumulates progressively in neurons and other cells.\cite{12} Lipofuscin build-up is believed to be related to aging and is associated with many age-related disorders, including Alzheimer's disease.\cite{13}

Improves Mood and Motivation

Animal studies suggest that centrophenoxine has a measurable anti-anxiety effect.\cite{14}

Some users report that it improves both mood and motivation, acting as a mild but noticeable anti-depressant.\cite{15}
While this aspect of centrophenoxine does not appear to be universal and has not been intensively studied, it could be explained at least in part by the compound’s neuroenergizing properties.

**HOW IT WORKS**

Centrophenoxine is a combination of PCPA (para-chlorphenoxyacetic) and a synthetic version of DMAE (dimethylaminoethanol) that has been modified to improve absorption and enhance its ability to cross the blood-brain barrier.

It is a fat-soluble compound that is metabolized in the liver.

Though centrophenoxine has been the subject of decades of research, its precise mechanisms of action are still not entirely understood.

Once centrophenoxine crosses the blood-brain barrier, it ultimately increases the amount of acetylcholine in the synaptic vesicles, either by converting into an intermediary phospholipid which is then used to make acetylcholine or by breaking down into choline which is converted to acetylcholine.[17]

Acetylcholine is the neurotransmitter most strongly associated with memory and general cognitive acuity. Centrophenoxine’s ability to increase acetylcholine levels is the primary means by which it acts as a nootropic.

However, centrophenoxine enhances cognition in other ways as well, such as increasing the availability of oxygen and glucose to the brain and decreasing concentrations of cellular waste and toxins that adversely affect cognition.

Centrophenoxine has proven anti-aging as well as nootropic properties. It is an effective antioxidant[18] capable of flushing toxins from the cells and helping repair toxin-related damage.[19]

It’s known to decrease concentrations of waste products created by lipid peroxidation, or the oxidative degradation of fats in the cell membranes.[20] Cellular damage created by lipid peroxidation is associated with aging and is implicated in many diseases and disorders, including cancer, cardiac disease, and neurological dysfunction.[21]

Centrophenoxine is believed to halt and perhaps even reverse the cellular potassium buildup that is associated with age-related cognitive decline.[22]
Centrophenoxine has also been shown to reduce or even eliminate the buildup of lipofuscin,[23] a waste material present in aging cells. Lipofuscin buildup is typically found in the cells of the liver, kidney, heart muscle, and retina, as well as in nerve and ganglion cells. Because lipofuscin buildup is strongly associated with many age-related disorders, centrophenoxine’s ability to reduce or eliminate this buildup makes it an invaluable anti-aging tool.

**DOSAGE**

Recommended dosages of centrophenoxine range from 250–3000 mg a day, given in two doses, and is considered both safe and effective for most healthy adults.[24]

Higher doses may be required to maximize its anti-aging effects, but it is advisable to consult a medical professional before exceeding the recommended daily dosage.

As with all supplements, it is best to start with the lowest possible effective dose and gradually increase as needed.

Because centrophenoxine is fat-soluble, it is best taken with food.

**STACKING**

Centrophenoxine is an outstanding choline source that works exceptionally well with other nootropics, particularly the racetams.

**Centrophenoxine and Aniracetam Stack**

Here’s an example of a centrophenoxine stack that includes the popular racetam aniracetam to boost memory retention, mood, creativity, while reducing anxiety.

1–2x per day

- 250 mg Centrophenoxine
- 750 mg Aniracetam
Centrophenoxine and Noopept Stack

Here's an example of a centrophenoxine stack that includes the popular nootropic Noopept to improve memory and learning, while providing neuroprotective properties.

1–2x per day

- 250 mg Centrophenoxine
- 20 mg Noopept

Review our article on how to create a nootropic stack for a general primer on basic combinations, ratios, and tips on designing your own nootropic stack.

SIDE EFFECTS

Centrophenoxine is safe and nontoxic at recommended dosage ranges and is very well tolerated.

However, some users have experienced mild and minor side effects, including nausea, headache, gastrointestinal issues, and sleeplessness.\textsuperscript{[25]}

In most cases, the side effects were associated with high doses and reducing the cumulative daily dosage eliminated the unwanted side effects.\textsuperscript{[26]}

WHERE TO BUY

Centrophenoxine can be purchased online via Amazon or specialized nootropics vendors.

Buying from Amazon is convenient and available in capsule form such as Double Wood Centrophenoxine Capsules.

Alternatively, you can buy centrophenoxine from a specialized nootropic vendor such as PureNootropics.net.
CLOSING THOUGHTS

Centrophenoxine is a safe, effective nootropic supplement that can significantly boost memory, learning ability, fluid intelligence, and concentration.

It is also a known anti-aging supplement capable of flushing toxins from cells and halting, or perhaps even reversing, age-related cellular damage.

For nootropic users, centrophenoxine is an outstanding source of choline that works exceptionally well with other supplements like the racetams, which put heavy demand on the brain's choline supplies.

Centrophenoxine is an affordable, readily available supplement with a long track record of success.

Whether you’re interested in a powerful memory booster, an anti-aging supplement, or a high-quality choline source to combine with other nootropics, centrophenoxine may be a good fit.

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Maija Haavisto Reviving the Broken Marionette: Treatments for CFS/ME and Fibromyalgia pp. 167
COLURACETAM

Coluracetam is one of the newer and least known racetam nootropics, but it's a favorite for many. Studies suggest that it can enhance cognition and memory, and users say it also improves concentration, focus, and vision.

SUMMARY

Coluracetam is a new and unique member of the racetam class of synthetic nootropics. Originally developed as a potential treatment for Alzheimer's disease and later considered as a treatment for depression and anxiety, coluracetam has become a popular nootropic known for improving mood, increasing motivation, and enhancing vision.

Coluracetam was first synthesized in 2005 by Japan's Mitsubishi Tanabe Pharma Corporation as an Alzheimer's disease treatment. After disappointing clinical trials, coluracetam was licensed to US biotechnology firm BrainCells Inc., which started testing the compound as a treatment for depression and anxiety. Though initial test results were positive and suggested that further study of coluracetam would be worthwhile, development was discontinued and BrainCells, Inc. closed in 2014. Coluracetam has been available for licensing since 2012.

Coluracetam acts primarily as a choline uptake enhancer that selectively affects memory function. It specifically enhances high-affinity choline uptake, increasing levels of the neurotransmitter acetylcholine by providing more of the choline from which it is made. Since acetylcholine is the neurotransmitter most closely associated with memory and cognition, it is believed that this function is the primary source of coluracetam's nootropic capabilities.

Coluracetam is particularly potent and requires a much smaller dose than other racetam class nootropics. It's fast-acting, reaching high levels in plasma within 30 minutes of ingestion, but within three hours levels are in decline.

Coluracetam is unregulated in the US and is sold as a dietary supplement, but its legal status varies from country to country. In Canada and the UK, it cannot be legally sold except by prescription, but it can be legally imported and possessed.
BENEFITS AND EFFECTS

There have been few documented human studies on coluracetam, so most of the information available is based on animal testing. However, research results, in combination with self-reports from users, suggests that coluracetam may provide a variety of both cognitive and physical/sensory benefits.

Memory and Learning

Coluracetam has been shown to improve cognitive function and memory in rats, and in theory, similar results may translate to humans.

In a 2010 animal study, coluracetam improved artificially-induced memory deficits without producing any significant side effects. The positive results were still apparent three days after the last dose, even though the serum concentration of coluracetam was negligible.[7]

Some users say coluracetam dramatically improves short-term memory and free recall,[8] increases memorization and recall abilities and enhances reading comprehension,[9] and increases thought and learning speed and information retention.[10]

Depression and Anxiety

The Phase 2a clinical trial of coluracetam suggested that it may be effective for treatment-resistant patients with both depression and anxiety.

The six-week placebo-controlled study, which was one of the few coluracetam tests involving humans, determined that a dosage of 240 mg (split into three daily doses of 80 mg) was useful in treating major depressive disorder (MDD) with co-morbid generalized anxiety disorder (GAD).

At the end of the test period, the overall treatment group and the placebo group scored similarly on scales for depression and anxiety, but there was a measurable improvement in the subset of treatment group participants who had both MDD and GAD, and who had previously failed an average of two antidepressants.[11]

User reports on coluracetam’s effect on anxiety and depression vary considerably, with some saying it alleviates both[12] and is a potent and reliable mood booster,[13] while others say it can actually trigger depression and anxiety.[14]
Eyesight

Coluracetam’s effect on vision is frequently reported by users, who say it enhances color vision, shape recognition, and optical vividness.\textsuperscript{[15][16]} Some users describe the effect as “HD vision”\textsuperscript{[17]} while others say it makes lights brighter and intensifies contrast.\textsuperscript{[18]}

Though enhanced vision is one of the most commonly reported benefits of coluracetam, there is no conclusive scientific evidence to explain or confirm this effect.

HOW IT WORKS

Like most racetam compounds, coluracetam works mainly by increasing levels of the neurotransmitter acetylcholine, which is strongly associated with learning, memory, and cognition.

The means by which coluracetam modulates acetylcholine levels is unique, however; while racetams typically trigger acetylcholine production by stimulating the appropriate receptors, coluracetam does so by enhancing high-affinity choline uptake, or HACU. The HACU system determines the rate at which choline is drawn into neurons for conversion into acetylcholine.

By increasing the rate at which choline is drawn into nerve cells, coluracetam promotes the production of acetylcholine and causes brain levels of this crucial neurotransmitter to rise.\textsuperscript{[19]} It has also been shown to create an increase in the high-affinity choline transporter molecule CHT1, which leads to the rapid availability of choline for uptake.

Together these actions lead to higher levels of acetylcholine, which are associated with enhanced cognition and memory.

DOSAGE

Most of the research on coluracetam was done on animals rather than humans, so there are no universally accepted dosing guidelines. The active dosage range is generally described as 5–20 mg, though users report a wide range of doses taken both orally and sublingually.\textsuperscript{[20]}
Many users note that tolerance may develop quickly, but there is no research data on that aspect of coluracetam.

As is true with all nootropics, it’s generally best to begin dosing at the lower end of the range to determine your reaction to the substance and increase as necessary.

**SIDE EFFECTS**

None of the animal or human studies on coluracetam documented any side effects.

The lack of adverse side effects was considered one of the most notable aspects of the animal study in which coluracetam was shown to offset artificially induced memory deficits in rats.

The most commonly reported side effect associated with racetam class nootropics is headache, which can often be eliminated by taking additional choline.

Coluracetam users have also reported intermittent nausea and daytime sleepiness as negative side effects, both of which were lessened by reducing dosage.

**STACKING**

Like most racetams, coluracetam stacks well with a choline source, such as alpha GPC, for added memory and cognitive benefits.

The recommended doses for supplemental choline is 300–600 mg daily if you’re stacking with alpha GPC and 250–750 mg daily if you’re using CDP choline.

**WHERE TO BUY**

Coluracetam is only available at certain online specialty vendors. We recommend [PureNootropics.net](http://PureNootropics.net) as your source for coluracetam or any other nootropics you would like to buy.
CLOSING THOUGHTS

Coluracetam is one of the newer and less familiar members of the racetam class of nootropics, but it’s a favorite with many users.

It increases levels of the “learning neurotransmitter” acetylcholine, which may boost cognition, and animal studies show that it can offset memory deficits without significant side effects.

Though there’s little documented human research on coluracetam, the studies that exist indicate that it may be a valuable treatment for anxiety and depression.

Many users count on it as a reliable mood lifter and memory enhancer that gives them better focus and concentration, and others say it gives them the equivalent of “HD vision,” making colors brighter, contrast more intense, and lights more radiant.

Coluracetam is a potent compound, so dosage amounts are low, and it’s known to be fast acting. It’s sold as a dietary supplement in the US and can be legally imported into Canada and the UK in small amounts.

There’s still much to be learned about coluracetam, but it appears to be safe for most users when taken responsibly. If you’re interested in adding something new and different to your nootropic stack, coluracetam could be one to consider.

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Fasoracetam is the newest member of the racetam family of nootropics that is currently being developed as a potential non-stimulant ADHD treatment.[1]

In 2015, fasoracetam was accepted by the US Food and Drug Administration's Investigational New Drug program, which grants the developers permission to start human clinical trials and ship the drug across state lines.[2]

Publicly-available human studies on fasoracetam are limited but positive, indicating it may effectively treat a specific form of childhood ADHD. Animal studies and anecdotal evidence from users suggest that it may also enhance memory,[3] improve sleep,[4] relieve anxiety and depression,[5][6] and alleviate the symptoms of withdrawal from other drugs.[7]

Fasoracetam was created in the 1990s by the Japanese pharmaceutical company Nippon Shinyaku as a possible treatment for vascular dementia. Development was halted after disappointing clinical trials, but in 2013 the clinical data on fasoracetam (sometimes referred to in research literature as NS-105 or NFC-1) was purchased by the US-based firm NeuroFix, a subsidiary of Aevi Genomic Medicine.[8]

Clinical trials on fasoracetam started again in 2016, investigating the compound's potential for treating Attention Deficit Hyperactivity Disorder (ADHD) in children who demonstrate a specific mutation of the glutamate receptor system.[9] The trials suggested that fasoracetam has potential as a non-stimulant alternative to Adderall and other amphetamine derivatives for ADHD treatment.[10]

A phase II proof-of-concept trial was planned for 2018 to investigate fasoracetam as an autism spectrum disorder (ASD) treatment.[11]

Fasoracetam has not been officially approved for any use by the USFDA and is classified as a research chemical that is not intended for human use.[12]
BENEFITS AND EFFECTS

Publicly available research on fasoracetam is limited to a small number of animal studies and even fewer human studies.

However, it’s gaining recognition in the nootropic community with many users reporting benefits.

May Improve Memory and General Cognition

In animal testing, fasoracetam effectively prevented or reduced artificially induced amnesia and forgetfulness.[13]

Though there is no publicly available data on similar experiments on human subjects, many users say they experience substantial memory improvement when taking it.[14][15]

Like other racetam nootropics, fasoracetam increases the amount of acetylcholine, the neurotransmitter most responsible for memory, learning, and cognition.[16]

May Relieve Anxiety and Depression

Fasoracetam may improve mood, reduce anxiety, and lift depression by acting on two of the brain’s most powerful mood-influencing chemicals, glutamate and gamma-aminobutyric acid (GABA).[17]

By simultaneously up-regulating GABA, which is an inhibitory neurotransmitter, and suppressing the excess production of the excitatory neurotransmitter glutamate, fasoracetam provides what users describe as a smooth, non-jittery feeling of improved mood, relaxation, and calmness.

There are no publicly available studies on fasoracetam's effect on mood, anxiety, or depression in humans, but many users report that they feel more calm, less anxious, and less depressed when taking it.[18]

Animal testing also supports this claim, showing that subjects given fasoracetam in stressful situations were less prone to learned helplessness and other anxious or depressed behavior.[19]
Potential ADHD Treatment

One of the few publicly available human studies on fasoracetam suggests that it has powerful potential as a treatment for ADHD.\textsuperscript{[20]}

The study, which involved 30 subjects between the ages of 12 and 17, tested the efficacy of fasoracetam in treating ADHD among adolescents who demonstrated a specific mutation in the glutamatergic gene network. This mutation is strongly associated with ADHD and is present in a significant percentage of adolescents with the disorder.

The subjects who took fasoracetam over the five weeks of the study showed marked improvement in all clinical measures during the trial. Reduction of ADHD symptoms persisted in post-trial testing, and none of the study participants demonstrated the development of either tolerance or dependence.

May Alleviate Withdrawal From Other Drugs

Many users report that fasoracetam has helped them during withdrawal from GABA-related CNS depressants gabapentin,\textsuperscript{[21]} phenibut,\textsuperscript{[22]} and GHB (gamma-hydroxybutyric acid).\textsuperscript{[23]}

It’s important to note that there is no documented research on the efficacy or safety of this use of fasoracetam.

HOW IT WORKS

Fasoracetam’s exact mechanisms of action are not entirely understood. However, it is believed to modulate the production and release of glutamate, GABA, and acetylcholine, three of the brain’s most important neurotransmitters.

Restoring Balance To The Glutamate System

Fasoracetam is known to modulate at least some of the brain’s receptors for glutamate, a crucial excitatory neurotransmitter essential for all aspects of brain function.
Glutamate imbalances are associated with a variety of physical and mental disorders, including depressive disorder, ADHD, schizophrenia, epilepsy, and neurodegenerative disorders like Alzheimer’s disease.

Fasoracetam works on a specific group of glutamate receptors called metabotropic glutamate receptors, or mGluRs,[24] which play a variety of roles in the body and brain but are mainly involved in learning, memory, and anxiety.

The eight known mGluRs work together to maintain a delicate balance, with two acting to increase neural excitation and the remaining six reducing the risk of neurotoxicity by lessening neural excitation as needed.[25]

In animal studies, fasoracetam successfully restored the function of two inhibitory mGluRs, slightly lowering glutamate activity in the brain.[26]

However, fasoracetam may even modulate all of the metabotropic glutamate receptors, restoring balance to the glutamate system as a whole. This mechanism may explain why fasoracetam may benefit individuals with ADHD, which is typically associated with low glutamate levels, without acting as an overall stimulant.

**Upregulating GABA**

Fasoracetam has been shown to upregulate the activity of GABA-B receptors, making more GABA available in the brain and central nervous system.[27]

Glutamate is also the precursor to GABA, an important inhibitory neurotransmitter that is associated with learning, but has calming effects and helps reduce anxiety and promote sleep.

The additional GABA, in combination with the modulation of glutamate receptors, is how fasoracetam may alleviate depression and anxiety, decrease social inhibition, and increase motivation.

In rat studies, this combined action was seen as key to the subjects’ ability to overcome learned helplessness after treatment with fasoracetam.[28]

**Increasing Available Acetylcholine**

Fasoracetam acts as a cholinergic, significantly increasing the uptake of choline in the cortex and hippocampus.[29]
The brain uses the additional choline to produce more acetylcholine, the neurotransmitter most strongly associated with learning, memory, and overall cognition.

This cholinergic action, which is typical of piracetam, aniracetam, and other members of the racetam family of nootropics, can create a significant improvement in virtually all aspects of cognition.

However, the additional demand on the choline may deplete the supply, which can result in headaches, brain fog, and low mood. These side effects can usually be countered by taking supplemental choline.

**DOSAGE**

Fasoracetam’s effects on humans have not yet been comprehensively documented, so there is no definitive guideline for dosage.

In the ADHD clinical trials on adolescents, fasoracetam was administered orally in an initial single dose of 50–800 mg, followed by subsequent symptom-driven doses up to 400 mg twice daily for 4 weeks.\(^{[30]}\)

In a small Japanese study of 14 men, daily doses of 100 mg were administered.\(^{[31]}\)

However, fasoracetam is a very potent compound, and doses as low as 20 mg taken once or twice daily have been reported as effective for some users.\(^{[32]}\)[\(^{[33]}\]

As with all nootropics, it is best to start with the lowest effective dosage and increase gradually, as needed.

Fasoracetam is water soluble and may be taken with or without food. Some users say they’ve had the best results taking fasoracetam sublingually, but others find that extreme bitterness makes that method unfeasible.

Documentation on the clinical trials with ADHD patients indicates that no degree of tolerance or dependence appeared to develop over the five weeks of the test. On the contrary, maximum effectiveness was observed during the final week of the trial.\(^{[34]}\) Though this finding is positive it doesn’t mean that tolerance and dependence are impossible, so users are strongly advised to keep in mind that fasoracetam not yet completely understood, and it may be safer to use it cyclically rather than continuously.
Fasoracetam is metabolized by the kidneys, so seniors or those with impaired kidney function should consult a doctor before taking fasoracetam.

Pregnant or nursing women should not take fasoracetam, as its effects and mechanisms of action are not fully known.

**SIDE EFFECTS**

Fasoracetam appears to be safe and reasonably well tolerated when taken responsibly by healthy individuals.

The most frequently reported side effects are the same as other nootropics in the racetam family: mild and transitory fatigue, digestive discomfort, and headache.

However, some users report reduced libido and diminished orgasms when taking fasoracetam.[35][36][37]

There is no information available on specific interactions between fasoracetam and other drugs, but it may potentiate phenibut.[38]

Users who have existing medical problems or are taking any prescription medications should consult a physician before taking fasoracetam.

**STACKING**

**Fasoracetam and Choline Stack**

Fasoracetam can be taken alone, but like the other racetams, it is typically combined with a form of supplemental choline for optimal results.

1x–2x per day

- 20 mg Fasoracetam
- 300 mg CDP Choline
WHERE TO BUY

Fasoracetam is not available for purchase at brick-and-mortar stores. If you’d like to buy fasoracetam, you’ll need to order it online.

We recommend ordering fasoracetam from PureNootropics.net as they are a reliable and reputable source for bulk nootropic powders.

CLOSING THOUGHTS

Fasoracetam is a new and as yet mostly experimental drug, but it has already developed a strong following in the nootropic community.

Many users find it's an effective cognitive enhancer that also helps with anxiety, depression, sleep problems, and lack of motivation.

It’s believed to be safe and well tolerated when taken responsibly, and at this point, there seems to be no evidence that taking fasoracetam leads to either tolerance or dependence.

However, very little is known about it. There are few publicly available studies, and there is no documentation on the safety of long-term use, whether cycling is better than continuous dosage, or how it interacts with other drugs.

If you’re only comfortable taking supplements that are well established and thoroughly documented, fasoracetam may not be for you. But if you’re interested in an innovative nootropic that may help banish anxiety and depression, improve focus and concentration, and boost cognition without disturbing your sleep or making you jittery, fasoracetam may be worth exploring.

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GINKGO BILOBA

Ginkgo biloba is a natural supplement that has been used for thousands of years as a general health tonic. Modern research confirms its use as a memory booster, cognitive enhancer, and brain protectant.

SUMMARY

Ginkgo biloba is one of the world's oldest natural medicines. Its use dates back tens of thousands of years to ancient China, where it was used to improve energy and treat a variety of ailments ranging from infection to asthma.

Modern research confirms Ginkgo biloba, usually supplemented in the form of a standardized 50:1 concentrated extract, has many benefits for both brain and body.

Some of Ginkgo biloba's most exciting benefits are related to memory, mood, and cognition.

It's also known to act as an antioxidant, protecting the brain from oxidative stress and damage from free radicals.

Because it interacts very well with other supplements and may act as a potentiator for other nootropics, Ginkgo biloba is a popular addition to nootropic stacks.

Ginkgo is not regulated as a pharmaceutical in the US and is available as a dietary supplement.

BENEFITS AND EFFECTS

Memory Improvement

Ginkgo biloba has a longstanding reputation as a memory enhancer, and recent research is proving that reputation to be well-earned.

A number of studies and clinical trials have shown that Ginkgo biloba supplements markedly improved memory, particularly in individuals suffering from mild to moderate age-related dementia.[1][2]
Many clinical trials suggest that Ginkgo biloba also enhances certain aspects of memory in cognitively healthy populations. A six-week study involving middle-aged participants with no cognitive impairment showed that daily administration of Ginkgo biloba substantially boosted information recall, though overall cognition remained unchanged.³

In a similar study involving elderly participants with no cognitive impairment, daily administration of Gingko biloba improved delayed recall and recognition but did not enhance other aspects of memory.⁴

Studies indicate that while Gingko biloba is most effective as a memory enhancer in older populations, it may improve some aspects of memory in younger users as well.⁵

Anecdotal user reports support Ginkgo biloba's memory enhancing effects.⁶⁷⁸

Enhanced Cognition

Ginkgo biloba's ability to improve circulation and blood flow in the brain makes it a useful and powerful nootropic, both on its own and in combination with other supplements.

Its ability to reduce blood viscosity is key to its nootropic capability; it literally makes the blood less sticky, which improves blood flow, enhances the absorption of oxygen and nutrients, and ultimately boosts cognitive function.⁹

Gingko biloba also enhances cognition by increasing levels of acetylcholine, the neurotransmitter most closely associated with learning, and dopamine, the neurotransmitter associated with motivation and reward.

Studies and clinical trials indicate that Gingko biloba can attenuate mild age-related non-Alzheimer's cognitive decline¹⁰ and significantly reduce cognitive deterioration associated with Alzheimer's disease and other forms of dementia.¹¹

Increased Energy

Ginkgo biloba has been considered a powerful energy booster for thousands of years, and modern research indicates that the ancient Chinese physicians who prescribed it as a general tonic were definitely on the right track.
By improving circulation throughout the body, Ginkgo biloba enhances oxygenation and the absorption of nutrients, increasing endurance and making muscles work better and perform longer.[12]

Gingko biloba has also been shown to increase energy by improving insulin signaling, decreasing inflammation,[13] and reducing the oxidative stress that can lead to cellular death.[14]

**Mood Management**

Ginkgo biloba has traditionally been used as a mood elevator, and clinical trials on participants suffering from anxiety disorders confirm that it is an effective treatment for anxiety.[15]

It has also been shown to be an effective mood modulator for adults with geriatric depression.[16]

**HOW IT WORKS**

Studies show that Ginkgo biloba has several mechanisms of action. Its primary active components are ginkgo flavone glycosides, which act as free radical scavengers, and terpene lactones, which have antibacterial and other pharmaceutical functions.[17]

The actions of these components make Ginkgo an anti-inflammatory and antioxidant that also enhances cerebral glucose utilization, reduces platelet aggregation, regulates neurotransmitter release, and impacts the vasomotor system.[18]

One of Ginkgo biloba’s most important actions is inhibiting the platelet activating factor (PAF) receptor, which improves circulation throughout the brain and body by dilating blood vessels and making the blood less sticky.[19]

Ginkgo also protects the vascular system from damage by incomplete atoms known as free radicals, which are formed during the process of oxidation.[20] Free radicals scavenge and damage other cells and can significantly impair circulation. Ginkgo biloba is a powerful antioxidant that neutralizes free radicals, preventing them from damaging surrounding cells and even repairing some of the damage free radicals may have already done.
Improved circulation plays a significant role in Ginkgo biloba's therapeutic and nootropic capabilities. Enhanced cerebral circulation makes the brain work more efficiently, absorbing oxygen and nutrients faster and more thoroughly.

Ginkgo has also been found to modulate the release of several important neurotransmitters, increasing levels of serotonin, acetylcholine, and norepinephrine.

In addition, Ginkgo biloba has natural monoamine oxidase (MAO) inhibiting properties similar to those in prescription antidepressants. MAO inhibition keeps the mood-related neurotransmitters dopamine, serotonin, and norepinephrine in balance and may provide a feeling of mental clarity.

**DOSAGE**

There is no standard dosage of Ginkgo biloba extract, but amounts ranging from 120–600 mg per day have been used in studies and found to be safe and effective for improving memory.

Ginkgo should be taken with food, and the daily total amount can be taken all at once or spread over two to three doses.

**STACKING**

Ginkgo biloba is a popular natural nootropic that works very well alone but truly shines in combination with other supplements. Some users report its cognition-enhancing effects are best realized when it is combined, or “stacked,” with other supplements.

Here are some all-natural nootropic stack examples.

**Ginkgo Biloba Stack for Memory Enhancement**

Vinpocetine is a natural nootropic that is best known as a memory booster. Like Ginkgo biloba, it has been shown to improve circulation and act as a brain protectant.

2x per day
Ashwagandha is an ancient herbal nootropic that dates back to Ayurvedic medicine. Known primarily for its powerful anti-anxiety effects, it also boosts mood and cognition.

Gotu Kola is a respected natural supplement known mainly for increasing energy, but it also positively affects cardiovascular health and is known to improve conditions of chronic venous insufficiency.

**SIDE EFFECTS**

Ginkgo biloba is considered both safe and well tolerated, but some minor side effects including nausea, headaches, and rapid heartbeat have been reported. These effects are rare and are usually temporary, but if you experience them a dosage reduction is recommended.

There is some indication that Gingko biloba can increase the risk of bleeding,[25] so anyone who has a bleeding disorder or who is planning surgery or recently had surgery should consult a physician before taking it.

Women who are pregnant or nursing are advised to avoid Ginkgo biloba, as there is little data on its effects in these situations.

Gingko biloba may interact with blood thinners, aspirin and NSAID pain relievers, antidepressants, anticonvulsants, diabetes drugs, and anti-platelet drugs. People who are taking any of these medications are advised to avoid taking Ginkgo biloba.[26]
WHERE TO BUY

Ginkgo biloba extract is one of the most widely available supplements and is both available in regular storefronts and, conveniently, can also be ordered online. Based on our research, we recommend the following Ginkgo biloba supplements that can be ordered from Amazon:

- Nature's Bounty Ginkgo Biloba Capsules

Alternatively, we recommend purchasing Ginkgo biloba from PureNootropics.net, a trusted vendor for specialty supplements.

CLOSING THOUGHTS

Ginkgo biloba is an ancient natural supplement that has stood the test of time.

Widely prescribed as both a specific treatment and a general tonic for tens of thousands of years, it is currently being studied in its standardized extract form as a potential treatment for a variety of circulatory and memory-related disorders and is rapidly gaining in popularity as a natural nootropic.

Ginkgo biloba extract may boost energy, improve memory and cognition, and act as a powerful potentiator in combination with other supplements.

It’s safe, well-tolerated, affordable, and readily available everywhere.

If you're interested in making the most of your brain and body, Ginkgo biloba extract is a supplement that may be well worth a try.

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HUPERZINE A

Huperzine A is a natural nootropic that may enhance memory and cognition, stabilize neurotransmitter levels, and protect the brain from oxidative damage.

SUMMARY

Huperzine A is a natural plant-based neuroprotectant that may enhance memory and boost overall cognition. An alkaloid compound derived from the Chinese club moss Huperzia serrata, huperzine A was first identified in the 1980s, but Chinese herbal medicine has been using extracts of the plant for centuries.

Though it's typically used in the treatment of Alzheimer's disease and other neurodegenerative disorders, huperzine A's nootropic potential is making it increasingly popular with students and otherwise healthy individuals who want to think more clearly, learn more quickly, and recall more accurately.

BENEFITS AND EFFECTS

Huperzine A offers benefits for both brain and body.

Neuroprotectant

Among the most important benefits of Huperzine A is its ability to protect the brain from oxidative damage, one of the most common problems associated with aging. Oxidative damage is at the heart of most age-related illnesses and is believed to play a major role in the development of Alzheimer's disease and other neurological disorders.[1]

Oxidative damage starts with an abnormality that occurs when oxygen molecules split into individual atoms, a normal process that constantly happens in the body. Ideally, each atom should be surrounded by pairs of electrons that orbit the atom in layers, but as we get older the process becomes less reliable, and an increasing percentage of new atoms are formed without a full complement of electrons. These imbalanced or unstable atoms, called free radicals, scavenge surrounding cells in search of electrons they can appropriate to balance their electron layer.
When free radicals attack nearby cells they create a chain of potentially damaging chemical reactions and ultimately destabilize the cells from which they “borrow” electrons. This effect can be offset by the presence of antioxidants, or molecules that can “donate” an electron to a free radical without becoming unstable themselves. When free radicals and antioxidants are present in balance, the process can actually be beneficial, but when free radical activity outstrips antioxidant activity, the result is oxidative stress that damages lipids, proteins, and DNA.

Over time this damage can lead to a number of debilitating and even deadly age-related disorders, including diabetes, hypertension and heart disease, atherosclerosis or hardening of the arteries, cancer, and neurodegenerative diseases like Alzheimer’s and Parkinson’s.

Huperzine A is a potent antioxidant that has been shown to positively affect oxidative balance and is considered a safe, effective, and well-tolerated adjunct treatment for Alzheimer’s disease.

**Memory Enhancer**

Huperzine A can improve memory by improving brain levels of acetylcholine, an important neurotransmitter crucial to all aspects of cognition. It has been shown to significantly inhibit the production of acetylcholinesterase, an enzyme that breaks down and degrades acetylcholine; this action effectively raises the levels of acetylcholine in the brain, which in turn enhances cognition in general and improves memory in particular.

While this benefit is of great importance in the treatment of Alzheimer’s disease, clinical trials indicate that huperzine A can improve both memory and learning ability in healthy young people as well.

**Protects Against Glutamate Toxicity**

Glutamate is a powerful excitatory neurotransmitter responsible for sending signals between nerve cells. It plays an important role in learning and memory when present at normal levels, but when concentrations are too high it can become toxic and may lead to cell damage and even cell death. Chronic glutamate toxicity caused by oversensitive receptors is a typical feature of neurodegenerative diseases and causes anxiety, restlessness, increased sensitivity to pain, and a diminished ability to focus or concentrate. This syndrome is particularly dangerous to older people, as
Age appears to increase receptor sensitivity and make neurons more susceptible to glutamate toxicity.\[^7\]

Huperzine A has been shown to act as an antagonist to glutamate receptors in the brain, preventing neurons from being overactivated by glutamate.\[^8\] This action helps normalize glutamate levels and is considered valuable in the treatment of neurodegeneration.

**Relieves Symptoms of Depression**

A 2016 review of three clinical trials suggests that huperzine A supplementation may be effective in alleviating the cognitive impairment symptoms of major depressive disorders.\[^9\] A total of 238 people aged 16 to 60 were involved in the trials, which compared the effectiveness of antidepressant treatment to treatment with antidepressant supplemented with huperzine A. While the addition of huperzine A did not appear to treat the depressive disorders, the group who took both antidepressants and huperzine A showed significantly greater improvement in both cognitive functioning and quality of life.

**HOW IT WORKS**

Huperzine A is a water-soluble alkaloid that readily crosses the blood-brain barrier and rapidly distributes throughout all regions of the brain. In humans, it appears in the blood within 5–10 minutes, and peak concentration is achieved in about an hour. It has a half-life of about 10 hours and is mostly eliminated through urine within 24 hours.\[^10\]

In the brain, huperzine A inhibits the production the G4 isoform of acetylcholinesterase, an enzyme that degrades and diminishes levels of the neurotransmitter acetylcholine. This action effectively raises levels of acetylcholine, which is strongly associated with all aspects of cognition and has been shown to play a vital role in the formation of new memories. High acetylcholine levels also enhance brain signaling and improve the response time of cortical circuits, while simultaneously decreasing excitatory feedback that can impede memory retrieval.

Studies show that huperzine A has a potency equal to or even greater than prescription acetylcholinesterase inhibitors.\[^11\]
Huperzine A has also been shown to act as a powerful antioxidant, neutralizing and in some cases preventing or even reversing oxidative damage caused by free radicals in the brain. This antioxidant capability is considered key to huperzine A’s value as an adjunct therapy in the treatment of Alzheimer’s disease and other neurological disorders.

Huperzine A is also known to help protect the brain against glutamate toxicity by blocking certain types of glutamate receptors. This action keeps brain cells from being overactivated and helps normalize glutamate levels, preventing the chronic glutamate toxicity that is typically associated with dementia and other age-related neurological disorders.

**DOSAGE**

There is no medically recognized guideline for Huperzine A dosage, but in clinical research studies it has been safely administered as follows: 50–200 mcg twice daily for the treatment of Alzheimer’s disease, 100 mcg twice daily to improve memory in adolescents, and 30 mcg twice daily to relieve senile or pre-senile dementia.\(^{[12]}\)

It can be taken with or without food at any time of day.

Due to its long half-life of over 10 hours, cycling may be useful. A cycle of 2–4 weeks of supplementation followed by a break from supplementation is typical, though no optimal cycle length has been identified.

**STACKING**

While huperzine A will have an effect on its own, stacking it with the right components may yield even better results.

Taking huperzine A in combination with a choline source such as Alpha GPC can increase the amount of acetylcholine in the brain, further enhancing the effect of huperzine A.

Many individuals lack sufficient choline in their diets, therefore, supplementation may be beneficial.

A racetam is also a good choice for stacking with huperzine A. Racetams are thought to activate glutamate receptors that are located near acetylcholine
receptors. This activity sensitizes the acetylcholine receptors so they are more likely to become activated. Sensitizing the receptors with a racetam and increasing the amount of acetylcholine with huperzine A enhances the nootropic effect of both drugs.

Huperzine A is also often paired with Noopept, a powerful synthetic nootropic.

**Memory Boosting Huperzine A Stack**

**Daily**

- 20 mg [Noopept](#)
- 300 mg [Alpha GPC](#)

**As Needed / Cycled**

- 200 mcg [Huperzine A](#)
- 10 mg [Vinpocetine](#)

**SIDE EFFECTS**

Huperzine A appears to be safe and well tolerated when taken in moderation, though long-term safety or safety during pregnancy have not been studied. No incidence of toxicity has been documented in studies and trials on huperzine A. When taken in amounts commonly used for supplementation, side effects are infrequent and transitory and consist mainly of minor digestive upset.

When taken in very large doses huperzine A can cause nausea, vomiting, and diarrhea, slurred speech, muscle twitching, drooling, incontinence, elevated blood pressure, and a slow heart rate.

Huperzine A may interact with anticholinergic medications such as atropine and scopolamine; it may also interact with antihistamines and antidepressant medications.[13] Individuals who are taking these medicines or who have heart disease, hypertension, or are taking anticholinergic medications for Alzheimer’s or glaucoma should discuss huperzine A with their doctor before taking it.
WHERE TO BUY

Huperzine A supplements are relatively easy to find wherever supplements are sold locally or can be purchased online. We recommended Double Wood Supplements Huperzine A tablets from Amazon.

Alternatively, you can order Huperzine A from a specialized nootropic vendor such as PureNootropics.net.

There are also nootropic supplements that contain Huperzine A as one of their active ingredients such as Alpha Brain.

CLOSING THOUGHTS

Huperzine A is a natural supplement that acts as an antioxidant, neuroprotectant, and nootropic. Decades of research indicate that it may enhance memory and overall cognition, relieve the cognitive impairment symptoms of major depressive disorders, help treat neurodegenerative diseases, and even protect the brain from age-related oxidative damage. It's safe, well-tolerated, and non-toxic when taken in moderation.

If you're interested in a reliable, affordable nootropic that can boost your memory while it helps maintain optimal brain health, huperzine A may be a good addition to your stack.

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L-THEANINE

L-Theanine is a naturally occurring amino acid found primarily in green tea leaves. It is an effective anxiety reducer that can also improve memory, attention, and mood.

SUMMARY

L-Theanine is a unique amino acid present in ordinary tea leaves that has been proven to relax the mind without causing drowsiness.\(^1\)

When taken in combination with caffeine, L-theanine may relieve depression, enhance memory, focus, and overall cognitive performance.\(^2\)

L-Theanine is a recognized anxiolytic (anxiety reducer) that has been shown to improve the quality of sleep and positively affect both mental and physical stress symptoms by inducing a feeling of calmness and reducing heart rate and blood pressure.\(^3\)

Unlike some other natural anxiolytics such as valerian and hops, L-theanine does not act as a sedative that depresses central nervous system activity; on the contrary, it works by boosting levels of calming brain chemicals.

Studies show that it has enormous potential as a neuroprotectant that can help prevent oxidative damage in the brain,\(^4\) and may even help offset the cognitive decline associated with aging.\(^5\)

BENEFITS AND EFFECTS

L-Theanine provides a surprising array of benefits that can have positive effects both physically and mentally.

Reduces Stress and Anxiety

L-Theanine’s ability to reduce anxiety, offset the physical effects of stress, and enhance feelings of calmness are among its most well-known benefits and are no
doubt in large part responsible for the enduring global popularity of tea (which is the second most popular drink in the world after water).[6]

Studies show that L-theanine effectively reduces concentrations of cortisol, often referred to as “the stress hormone,”[7] reduces both psychological and physiological stress responses,[8] and promotes alert relaxation.[9]

**Improves Memory, Attention, and Mood**

L-Theanine’s calming effects may have a variety of benefits, including boosting attention, focus, and learning ability through sensorimotor gating, or filtering environmental stimuli to prevent an overload of irrelevant information in the higher cortical centers of the brain.[10]

Studies show that this “gating” effect reduces distraction and improves cognitive alertness, increasing the ability to focus and enhancing overall cognitive efficiency.[11]

L-Theanine has been shown to be particularly effective as a nootropic when taken in combination with caffeine.[12]

Combining the two eliminates the vasoconstrictive effect and behavioral effects of caffeine, thus improving cerebral blood flow and in turn enhancing cognition and mood.[13]

The L-theanine–caffeine combination has also been shown to improve memory and selective attention and increase brain theta waves, which are an indication of cognitive alertness.[14]

**Improves Sleep**

Research indicates that L-theanine is a safe, natural sleep aid that works by reducing anxiety as opposed to sedation.[15]

L-Theanine has been shown to improve both the ability to fall asleep and the quality of sleep itself without causing daytime drowsiness or other negative side effects.[16]
Reduces Blood Pressure

Oral administration of L-theanine has been shown to substantially lower both systolic and diastolic blood pressure. This effect was particularly pronounced among “high response” participants who demonstrated a significant rise in blood pressure in response to psychological stress.[17]

Caffeine has been shown to elevate blood pressure during stress,[18] but when taken in combination with L-theanine, caffeine did not increase blood pressure.

Because repeated temporary stress-related blood pressure elevation can lead to hypertension, L-theanine is believed to have some potential as a hypertension preventative for young adults who show a large blood-pressure response to psychological stress.

Improves the Effectiveness of Cancer Treatment

Research suggests that L-theanine may be a valuable adjunct therapy for cancer treatment.

Both human trials and animal studies show that theanine suppressed the growth of lung cancer and leukemia cells, enhanced the anticancer activity of cancer treatments such as trichostatin, and reduced cancer cell migration and invasion.[19]

Research also suggests that L-theanine could be used as an effective chemopreventive agent for cancer.[20]

HOW IT WORKS

L-Theanine works primarily by modulating levels of various brain chemicals, increasing the levels of inhibitory neurotransmitters and actively blocking the overproduction of excitatory neurotransmitters.[21]

L-Theanine's chemical structure is similar to that of glutamate, the most important excitatory neurotransmitter, and that similarity enables it to bind to and block glutamate receptors in the brain. This effectively lowers glutamate levels and prevents glutamate receptor overactivity that is typically triggered by stress, resulting in increased calm and relaxation.[22]
L-Theanine also increases levels of the calmative neurotransmitters dopamine, serotonin, and GABA, all of which are important for regulating mood, alertness, sleep, and energy. At the same time, it suppresses overproduction of the potentially damaging stress-related hormone cortisol and triggers the release of Alpha waves, a state of brain activity associated with wakeful relaxation.[23]

L-Theanine is a water-soluble amino acid that is metabolized in the kidneys and readily crosses the blood-brain barrier. It reaches maximum concentrations in the brain in less than an hour.

**DOSAGE**

L-Theanine has been shown to interact positively with caffeine,[24] and is often taken with caffeine in a 2:1 ratio, particularly when used as a cognitive enhancer. Doses of 100–200 mg L-theanine and 50–100 mg caffeine are considered typical and are generally both effective and well tolerated.

Those who are unaccustomed or particularly sensitive to caffeine may want to reduce the amount of caffeine taken with each dose or omit it entirely.

**STACKING**

L-Theanine boosts focus and enhances relaxation on its own but is most effective when combined, or “stacked,” with other nootropics.

**L-Theanine and Caffeine Stack**

L-Theanine improves cognitive performance and subjective alertness when “stacked,” or combined, with caffeine.[25]

L-Theanine can take away the jitteriness often associated with caffeine, leaving a relaxed but alert state that is perfect for productivity.

The benefits of stacking L-theanine with caffeine may include:

- Improved memory
- Enhanced focus
- Increased motivation
- Boosted mood
• Reduced anxiety

Stacking L-theanine with caffeine is one of the most popular choices among those looking for a cognitive boost due to its simplicity, low cost, and effectiveness.

The combination is best taken only when an energy boost is needed, as opposed to daily, to avoid building up a tolerance.

**Maximum 1x–2x per day**

- 200 mg **L-Theanine**
- 100 mg **Caffeine**

NOTE: For a convenient way to take this stack, we recommend getting caffeine + L-theanine capsules from PureNootropics.net

**L-Theanine Stack for Universal Cognitive Enhancement**

For a preformulated nootropic that contains a blend of 11 cognitive enhancing supplements, including L-theanine, designed to optimize a wide array of cognitive functions, we recommend Mind Lab Pro.

Mind Lab Pro's strategy aims at all aspects of memory, mental performance, mood and stress resistance, and brain repair, and maintenance. Their combination of nootropics is designed to affect brain energy, neurotransmitters, brain blood flow, brain waves, neuroprotection, and regeneration.

Read our Mind Lab Pro review for a detailed overview.

**SIDE EFFECTS**

L-Theanine is considered extremely safe and has been designated as a GRAS (Generally Recognized as Safe) ingredient by the US Food and Drug Administration.[26]

In animal testing, even very high dosages continued over prolonged periods failed to produce toxicity or carcinogenicity.[27]

There are no documented serious L-theanine side effects.
Minor side effects including dizziness and headache are infrequently reported when L-theanine is taken in combination with caffeine.

WHERE TO BUY

If you’d like to buy L-theanine, we recommend:

- Double Wood Supplements L-Theanine Capsules from Amazon.com
- L-Theanine Capsules from PureNootropics.net

For L-theanine combined with caffeine, we recommend:

- Caffeine + L-Theanine Capsules from PureNootropics.net

Alternatively, if you’d like to take a supplement that contains a blend of 11 cognitive enhancing nootropics, including L-theanine, we recommend Mind Lab Pro. Read our Mind Lab Pro review for a detailed overview.

CLOSING THOUGHTS

L-Theanine is a natural and safe amino acid that offers a surprisingly broad range of benefits.

It has been shown to ease anxiety, improve sleep, enhance cognition, memory, and focus, and protect the brain. But that’s only part of the L-theanine picture; research indicates that it can help reduce and might prevent stress-related hypertension, and it may be a valuable adjunct therapy for cancer patients.

If you’re interested in an effective natural nootropic that has no documented serious side effects, L-theanine may be worth a try.

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L-TYROSINE

L-Tyrosine is an amino acid that, when supplemented, may improve mood and memory, enhance cognitive abilities, increase focus, and reduce the adverse effects of stress. Also available as N-Acetyl L-Tyrosine (NALT), a more bioavailable form.

SUMMARY

L-Tyrosine naturally-occurring amino acid that is essential to both physical and mental function. It is the precursor for dopamine, adrenaline, and norepinephrine, three of the most important neurotransmitters.

Dopamine is associated with reward and pleasure and plays an important role in mood, motivation, and cognition; adrenaline and norepinephrine are the hormones behind the body’s “fight or flight” response to stress, and together they influence energy by modulating heart rate, blood pressure, and blood sugar levels. These three neurotransmitters, which share a distinct chemical structure, are called catecholamines.[1]

L-Tyrosine is also necessary to the production of both thyroid hormones, which regulate metabolism, and melanin, a natural pigment occurring in the hair, skin, and eyes.

L-Tyrosine is available in high-protein dietary sources like dairy products, meats, fish, and eggs, but the body also produces it from another amino acid called L-phenylalanine. Because the body can produce adequate amounts of L-tyrosine, supplementation isn't essential for basic health.

Research suggests that supplemental L-tyrosine can enhance cognition, increase energy, boost mood, and increase motivation, particularly for people under physical or environmental stress.

BENEFITS AND EFFECTS

L-tyrosine has been proven to offer a variety of benefits for both mind and body, particularly in situations that involve some degree of physical or mental stress.
Cognitive Enhancement Under Stress

Decades of studies show that supplemental L-tyrosine can significantly boost cognition in stressful conditions, effectively offsetting deficits in working memory and information processing created by environmental stressors such as extreme weather or intense cognitive demand.

By creating a “buffer” of raw material from which the brain can produce neurotransmitters, L-tyrosine supplementation may prevent the depletion that’s associated with stress.[2]

L-tyrosine has also been shown to improve cognitive performance by modulating the body’s physical response to stress. In a 1999 military study of cadets on a combat training course, subjects taking L-tyrosine supplementation had significantly lower systolic blood pressure than those receiving placebo, and performed better on memory and tracking tasks.[3]

L-tyrosine was even shown to offset the effects of sleep deprivation, an environmental stressor that typically degrades the performance of cognitive tasks. In a 1995 study, sleep-deprived individuals receiving supplemental L-tyrosine performed significantly better at a variety of cognitive and psychomotor tasks than a similar group which was given a placebo.[4]

Improved Working Memory

L-tyrosine appears to boost working memory as tasks become increasingly more challenging. A 2013 study on adults doing a progressively challenging mental task found that participants who took supplemental tyrosine did better on the more difficult levels of the task but showed little or no improvement on the easier levels.[5]

The researchers concluded that L-tyrosine selectively targets cognitive control operations, providing more resources under mentally demanding tasks.

Increased Cognitive Flexibility

A small 2015 study involving 22 healthy adults showed that supplemental L-tyrosine enhanced cognitive flexibility, the ability to switch between tasks or modalities of thought.[6] This result was attributed mostly to the fact that L-tyrosine increases brain levels of dopamine, which is believed to control cognitive flexibility.
ADHD Treatment and Focus Enhancement

Low levels of tyrosine are not uncommon among people diagnosed with ADHD, and supplemental L-tyrosine has been studied for its potential as an adjunct treatment for the disorder. A 2011 trial involving both adult and pediatric ADHD patients showed that 77% of patients treated with L-tyrosine alone showed significant improvement over a period of 10 weeks.[7]

Further studies indicated that the positive effects of pharmaceutical ADHD medication were significantly enhanced by taking L-tyrosine alongside it.[8]

Anecdotal reports from users claim similar experiences saying that it provides energy, focus, and motivation similar to the effects of Adderall.[9][10]

HOW IT WORKS

L-Tyrosine's primary mechanisms of action have been extensively studied and are well understood.

Most of its actions are related to its use in the production of catecholamine neurotransmitters dopamine, adrenaline, and norepinephrine; it doesn't cause them to be produced, but it does provide the raw material from which they're made.

L-tyrosine is created when its precursor amino acid, phenylalanine, is metabolized in the liver. Having sufficient levels of L-tyrosine provides a buffer of material the body can use when it needs to produce more catecholamines.

Intense physical or mental stress increases the release of adrenaline, norepinephrine, and dopamine, and levels can quickly become depleted. When this happens the brain initiates the process of creating more by releasing an enzyme which converts L-tyrosine first into the catecholamine precursor L-DOPA and then into dopamine, part of which is oxidized and converted into norepinephrine and adrenaline.[11]

This built-in regulatory system can be seen as an argument in favor of L-tyrosine supplementation. Maintaining sufficient levels of L-tyrosine may increase catecholamine synthesis and release by ensuring enough tyrosine during prolonged periods of stimulation.[12]
**DOSAGE**

For increasing mental performance or mitigating the effects of stress, a single daily dose of 500–2000 mg of L-tyrosine has been shown to be safe and effective.

Tyrosine supplements are also available as N-Acetyl-L-Tyrosine or NALT, a modified form of L-tyrosine that has an acetyl group attached to the tyrosine molecule to enhance bioavailability. NALT is more soluble than the standard form but has a lower conversion rate in the body, so larger doses may be required. Both forms of the supplement provide the same functions and benefits.\(^{[13]}\)

**STACKING**

**N-Acetyl-L-Tyrosine Stack for Universal Cognitive Enhancement**

For a preformulated nootropic that contains a blend of 11 cognitive enhancing supplements, including NALT, designed to optimize a wide array of cognitive functions, we recommend Mind Lab Pro.

Mind Lab Pro's strategy aims at all aspects of memory, mental performance, mood and stress resistance, and brain repair, and maintenance. Their combination of nootropics is designed to affect brain energy, neurotransmitters, brain blood flow, brain waves, neuroprotection, and regeneration.

Read our Mind Lab Pro review for a detailed overview.

**SIDE EFFECTS**

L-tyrosine is considered safe when taken at recommended doses.

Commonly reported side effects tend to be both mild and temporary, and include headaches, migraine, indigestion, stomach trouble, and gastrointestinal upset.

**Contraindications:** L-Tyrosine should not be taken by people who are taking high blood pressure medication, Levadopa, thyroid medication, MAO inhibitors, or stimulants. L-tyrosine should not be taken by individuals with thyroid disease, Graves’ disease, or melanoma. L-tyrosine has not been proven safe for women who are pregnant or nursing.\(^{[14]}\)
WHERE TO BUY

L-Tyrosine is readily available in retail stores that sell supplements as well as via online vendors.

We recommend buying L-tyrosine from PureNootropics.net, a one-stop shop for cognitive enhancing supplements.

If you prefer to do your shopping on Amazon.com, we recommend Source Naturals N-Acetyl L-Tyrosine Capsules as a high-quality source of L-tyrosine.

Alternatively, if you’d like to take a supplement that contains a blend of 11 cognitive enhancing nootropics, including NALT, we recommend Mind Lab Pro. Read our Mind Lab Pro review for a detailed overview.

CLOSING THOUGHTS

L-Tyrosine is a tested and proven supplement with evidence that it can enhance memory, increase cognitive flexibility, and improve mental performance in individuals exposed to acute stress or elevated cognitive demand.

One of the most interesting aspects of L-tyrosine supplementation is that it performs best under pressure, but that doesn't necessarily mean that L-tyrosine's effectiveness is limited to extreme situations. While there is limited research on this aspect of L-tyrosine, the few studies that have been done, combined with anecdotal evidence from users, indicate that L-tyrosine may well be beneficial even for those that are not experiencing military-grade stress.

Working or studying long hours, struggling with anxiety, and even intense exercise are all stressors that can have a negative effect on cognition, and L-tyrosine supplementation may help.

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Lion's Mane is an ancient medicinal mushroom with powerful properties. It is a proven neuroprotectant that may also enhance brain function, fight anxiety and depression, and even promote neurogenesis.

SUMMARY

Lion's Mane is an ancient Chinese medicinal mushroom that is becoming universally recognized as a supplement that provides a wide array of benefits.

Its proven neuroprotective qualities, its ability to stimulate the production of nerve growth factor (NGF), and potential for cognitive enhancement and relief of depression and anxiety make Lion's Mane one of the most popular and promising natural nootropics.

Used for centuries as a general tonic and health treatment, the Lion's Mane Mushroom (also known as Hericium Erinaceus, Yamabushitake or Satyr's Beard) is native to China, Japan, North America, and Europe. Though it was traditionally prescribed as a restorative, its effect on the brain has always been recognized, and ancient physicians used it to treat what we would now describe as neurodegenerative diseases.

Modern research has discovered that Lion's Mane extract enhances the production of nerve growth factor (NGF). NGF is a protein that, in the brain, plays a critical role in the survival and function of neurons responsible for attention, arousal, motivation, memory, and consciousness. Increased levels of NGF have been shown to enhance memory and learning.

Studies also suggest that Lion's Mane is a powerful neuroprotectant that could be useful in the treatment of a variety of conditions such as liver damage, obesity, and even some types of cancer.
**BENEFITS AND EFFECTS**

**Neurogenesis, Neuroprotection, and Nerve Growth Factor**

One of the most exciting aspects of Lion’s Mane is that it significantly increases levels of nerve growth factor (NGF), a specific type of brain protein which plays an essential role in brain plasticity, learning, and memory.

High levels of NGF are associated with optimal brain health, function, and resilience. NGF protects existing neurons and is also key to neurogenesis, or the regeneration of neural connections impaired by age, injury, or disease.

Research confirms that Lion’s Mane is a powerful neuroprotectant. In a notable Japanese study, mice were fed a diet containing both Lion’s Mane and a peptide known to create learning and memory impairment. Lion’s Mane successfully prevented the cognitive impairments and dysfunction the peptide typically produces, a result the researchers attributed to increased NGF.

Lion’s Mane has also demonstrated significant antioxidant and anti-inflammatory properties, both of which add to its neuroprotective capability.

**Enhanced Memory and Brain Function**

Though there is only one documented study on how Lion’s Mane affects learning and memory in humans, the results suggest that it has real potential as a cognitive enhancer.

In a 2009 Japanese clinical trial, healthy adults with mild cognitive impairment received 3 g per day of Lion’s Mane extract over 16 weeks. The participants were tested throughout the trial. Their cognitive function scores increased with each test but dropped when supplementation ended.

Animal studies also support claims for the supplement's ability to enhance memory and cognition in healthy subjects. Healthy mice that received Lion’s Mane as a dietary supplement displayed a significant improvement in both spatial and visual recognition memory.

The results of these and similar studies suggest that Lion’s Mane mushrooms may have potential as a cognitive enhancing supplement for healthy individuals as well as in the treatment of Alzheimer’s disease and other neurological disorders.
Reduces Depression and Anxiety

Lion’s Mane may help improve depression and anxiety symptoms.

In a 2010 Japanese study involving 30 women, half the participants were given Lion’s Mane, and half received a placebo over 4 weeks. Tests at the end of the trial indicated that the women who were given Lion’s Mane had better sleep quality and significantly less anxiety and depression symptoms than those who had taken the placebo.¹⁹

Though this is the only documented human study on how Lion’s Mane affects depression and anxiety, animal testing had similar results. In a 2015 study, mice given Lion’s Mane extract displayed fewer depressive behaviors and showed blood markers indicative of lower depression than mice that did not have supplemental Lion’s Mane.²⁰

In both the human and animal studies, researchers primarily attributed the reduction in depression and anxiety to the anti-inflammatory effects of Lion’s Mane.

Other Health Benefits

The most traditional use of Lion’s Mane in Chinese medicine is to treat stomach problems, and recent studies have supported its gastroprotective effects.²¹

Lion’s Mane may be useful in the treatment of obesity. Animal studies show that it has an anti-obesity effect because it decreases the ability to absorb lipids.²²

Lion’s Mane may be beneficial in the treatment or prevention of cardiovascular problems. An ethanol extract of Lion’s Mane improved the lipid metabolism of mice fed a high-fat diet,²³ and it was also shown to prevent blood platelet aggregation that is associated with thrombosis.²⁴

HOW IT WORKS

Lion’s Mane’s mechanisms of action are quite different from those of other nootropics.
While racetams and other synthetic nootropics work by modulating the production of various neurotransmitters, Lion’s Mane works by increasing the amount of nerve growth factor (NGF) in the brain.[25]

NGF is a neurotrophin, a small secreted protein that is essential for the growth, maintenance, proliferation, and survival of neurons.

First identified in the 1950s, NGF has been extensively studied and shown to be one of the primary building blocks of brain health and neuroplasticity.[26]

The presence of sufficient NGF enhances cognition by encouraging the growth and branching of axons, the long threadlike nerve cell extensions along which impulses are conducted. The more axons that exist and the better their health, the more rapidly and efficiently impulses can be transmitted and the better the cognition and overall brain function.

Insufficient NGF impairs cognition by leading to neuronal decay and the eventual death of nerve cells, and there is increasing evidence that low NGF levels are associated with neurological disorders such as Alzheimer’s disease.[27]

NGF also enhances cognition by promoting myelination, the development of the lipid/protein sheath that encases and protects axons.[28] Myelin acts as an electrical insulator, increasing the speed at which impulses travel along the axons. It also lays the groundwork for the repair and regrowth of severed or damaged axons, providing a track along which regrowth can occur.

The active components in Lion’s Mane that are responsible for stimulating NGF are erinacines and hericenones. They are small molecules which can easily cross the blood-brain barrier.

Unlike most modern nootropics, Lion’s Mane does not produce immediately noticeable effects and must be taken for a minimum of several weeks to experience its benefits.

**DOSAGE**

Typical dosage recommendations range from 500–3000 mg per day.

Because human studies on Lion’s Mane are limited, no optimal dosage standard has been determined. Participants in the Japanese study on cognition received a
cumulative total of 3,000 mg daily of 96% pure Lion’s Mane extract, administered in 3 oral doses. This amount appeared to be effective and well tolerated by research participants, with no adverse side effects noted.²⁹

Commercial preparations of Lion's Mane vary considerably in strength, purity, and composition, which makes it impossible to identify an optimal dosage. The amount needed to experience its benefits depends largely on the potency of the extract, so follow the directions on the product label.

**SIDE EFFECTS**

Lion’s Mane appears to be well tolerated and associated with very few side effects. In animal testing, no signs of toxicity were observed even at very high dosages of up to 5 g/kg.³⁰

The most commonly reported side effect is a sensation of itchy skin, which may be explained by an increase in nerve growth factor levels.³¹

**STACKING**

Lion’s Mane is very effective on its own, but it can also be combined, or “stacked,” with other supplements for even greater results.

**Lion’s Mane Stack for Immediate Cognitive Boost**

For an immediate cognitive boost, Lion’s Mane can be stacked with fast-acting nootropics like **piracetam**, **pramiracetam**, **aniracetam**, or **oxiracetam**.

When racetams are part of a stack it’s particularly important to include a high-quality choline supplement like **Alpha GPC**, **CDP Choline**, or **centrophenoxine** to ensure that there is sufficient choline available for transformation to acetylcholine, the neurotransmitter most closely associated with cognition.

**2x per day**

- 500 mg **Lion's Mane Mushroom**
- 750 mg **Aniracetam**
- 300 mg **Alpha GPC**
- 1 g **Fish Oil**
Note: Aniracetam can be substituted by another racetam (such as piracetam, pramiracetam, oxiracetam), at its respective recommended dosage.

**Lion's Mane Stack for Long-term Cognitive Enhancement**

Lion’s Mane’s most desirable benefits lie in long-term supplementation (several weeks to months) resulting in lasting improvements to brain function.

Some of the supplements that best complement Lion's Mane include uridine and fish oil, both of which protect cellular membranes; zinc, which regulates synaptic function; and **ALCAR or Acetyl-L-Carnitine**, which reduces brain cell death.

Other possible additions to a Lion's Mane stack would be Pregnenolone or P5, which encourages the production of new neurons, and melatonin, which reduces neuronal death.

**1x per day**

- 1500 mg [Lion’s Mane Mushroom](#)
- 250 mg [Uridine](#)
- 2 g [Fish Oil](#)
- 15 mg [Zinc](#)
- 300 mg [Alpha GPC](#)
- 10 ml [Ashitaba](#)
- 5 mg [Pregnenolone](#)
- 500 mg [ALCAR](#)
- 500 mg [L-Tyrosine](#)

**Lion’s Mane Stack for Universal Cognitive Enhancement**

For a preformulated nootropic that contains a blend of 11 cognitive enhancing supplements, including Lion's Mane, designed to optimize a wide array of cognitive functions, we recommend [Mind Lab Pro](#).

Mind Lab Pro’s strategy aims at all aspects of memory, mental performance, mood and stress resistance, and brain repair, and maintenance. Their combination of nootropics is designed to affect brain energy, neurotransmitters, brain blood flow, brain waves, neuroprotection, and regeneration.

Read our [Mind Lab Pro review](#) for a detailed overview.
WHERE TO BUY

Lion’s Mane supplements are widely available for purchase.

Lion’s Mane extract is available in both bulk powder and capsule form from various online vendors.

We recommend buying Lion’s Mane extract online from PureNootropics.net, as they are a one-stop shop for cognitive enhancing supplements. Their Lion’s Mane is derived from organic whole fruiting body extracts, with not only testing to verify the percentage of active beta-glucans, but also that starch content is low, and that there are no pesticide residues.

If you prefer doing your shopping on Amazon.com, we recommend Vitaling 20:1 Dual Extract Lion’s Mane Powder.

Alternatively, if you’d like to take a supplement that contains a blend of 11 cognitive enhancing nootropics, including Lion’s Mane, we recommend Mind Lab Pro. Read our Mind Lab Pro review for a detailed overview.

CLOSING THOUGHTS

Lion’s Mane is a unique and exceptionally promising natural nootropic that has been proven to improve brain health, enhance cognition, and protect the brain against injury, disease, and the effects of aging.

Though it doesn't have the immediate effects of modern synthetic nootropics, it may be a highly beneficial supplement that deserves a close look from anyone that wants real, long-lasting, improvements to memory and overall brain function.

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Modafinil is a wakefulness-promoting agent with proven nootropic properties. Its effectiveness has been well-documented in dozens of studies over decades of research, and it's often used off-label by healthy individuals who want to enhance their mental performance.

**SUMMARY**

Modafinil is a powerful stimulant and wakefulness-promoting drug developed for the treatment of narcolepsy and other daytime sleep disorders. But its ability to prevent sleepiness and fatigue is only part of the picture; extensive testing has shown that modafinil offers an impressive list of cognitive benefits ranging from enhanced mood and mental alertness\(^1\) to increased motivation,\(^2\) improved reaction time,\(^3\) and better memory.\(^4\)

Modafinil is a fast acting, highly bioavailable derivative of the ground-breaking non-amphetamine stimulant adrafinil. It was developed in the 1970s and approved by the US Food And Drug Administration for use as a narcolepsy treatment in the late 1990s.\(^5\)

Modafinil is listed as a Schedule IV controlled substance in the US and is sold as a prescription drug in the US and Canada, where it is typically prescribed under the names Provigil and Alertec. However, its proven cognitive benefits also make it a potent and increasingly popular nootropic or “smart drug,” used off-label by students, business people, shift workers, and others who are interested in increasing wakefulness and enhancing mental performance.

Though the effects of modafinil are similar to those of amphetamines like Adderall, it’s a very different substance. Modafinil is an eugeroic that specifically improves alertness, while Adderall and other amphetamines are psychostimulants that produce a temporary increase in overall psychomotor activity. Because modafinil’s actions are more targeted and selective, it is thought to provide a “smoother,” less jittery energy, have fewer serious side effects, and be better tolerated with a lower potential for abuse or addiction than amphetamines.\(^6\)


BENEFITS AND EFFECTS

Modafinil has been extensively studied and found to have a number of benefits.

Promotes Wakefulness and Alertness

First and foremost, modafinil excels at what it was originally designed to do: it promotes wakefulness, increases alertness, and enhances mental function in a sleep-deprived state.

Modafinil has consistently been shown to effectively prevent excess daytime sleepiness without disrupting normal nighttime sleep, which makes it an extremely valuable treatment for people with narcolepsy\(^7\) or related sleep disorders such as obstructive sleep apnea.\(^8\)

It is also useful for people whose jobs require them to be alert and active at night when their circadian clocks are telling them to sleep.

The US military has successfully used modafinil to help helicopter pilots stay alert throughout sustained operations.\(^9\)

A 1997 study determined that modafinil is more effective than methamphetamine at inhibiting the sleep drive, even though modafinil increased motor activity only slightly while methamphetamine produced profound increases in motor activity.\(^10\)

The same study also demonstrated that modafinil produced more consolidated periods of wakefulness than methamphetamine.

Interestingly, modafinil has been shown to restore normal levels of learning ability in methamphetamine addicts.\(^11\)

While modafinil addiction is recognized as a possibility, it is widely believed to have significantly lower addiction risk than amphetamines\(^12\) and has even been proposed as a treatment for methamphetamine and cocaine addictions.

Cognitive Effects

Modafinil has been shown to enhance cognition significantly, both in healthy non-fatigued people\(^13\) and in people experiencing sleep deprivation.\(^14\)
Studies indicate that modafinil can improve attention, executive functions, memory, and learning in healthy people whether sleep-deprived or not.\[15\]

Some studies suggest that modafinil’s effects may be most marked among low-performing subjects.\[16\]

Clinical trials confirmed that modafinil improves mood in healthy subjects but may result in anxiety.\[17\]

Many users report that in addition to increasing wakefulness and alertness, modafinil enhances focus, memory, motivation, and verbal fluency.\[18\]

It has also been shown to improve mental function for people with conditions that impair attention processing, such as ADHD,\[19\] cognitive decline related to physical or neurological disorders,\[20\][21\] or drug dependence.\[22\]

**Enhanced Exercise and Sports Performance**

Modafinil has been shown to improve sports and exercise performance, largely by significantly extending the time before feelings of exhaustion are experienced and reducing the perception of fatigue.\[23\]

Modafinil was added to the World Anti-Doping Agency's list of prohibited substances in 2004.\[24\]

**Neuroprotectant**

Interesting new research suggests that modafinil may promote brain health.

It has antioxidant properties that can reduce the presence of damaging free radicals in the brain tissue, making it an effective neuroprotectant.\[25\]

**Impulse Control**

Modafinil has been shown to be an effective means of impulse control in a variety of situations, including schizophrenia,\[26\] alcoholism\[27\] and gambling addiction.\[28\]

**Treatment of Other Conditions**

Research indicates that modafinil is comparable to amphetamine in the treatment of ADHD.\[29\] Though it is now sometimes used as an alternative to conventional
stimulants for the treatment of adult ADHD, it is currently not approved as a treatment for childhood ADHD.

Studies also suggest that modafinil is an effective treatment for both the fatigue and memory impairment related to multiple sclerosis.\[^{30}\]

Ongoing clinical trials are testing modafinil as a treatment for a broad range of conditions, including depression, schizophrenia, seasonal affective disorder, and nicotine addiction.

**HOW IT WORKS**

Modafinil's effects are similar in some ways to those of conventional stimulants, but its unique mechanisms of action set it apart.

Unlike amphetamine, methylphenidate, and other central nervous stimulants that induce wakefulness by general widespread neuronal activation, modafinil activates neurons selectively, focusing primarily on the hypothalamus and amygdala.

While it is known that modafinil modulates the brain's histamine, norepinephrine, serotonin, dopamine, and orexin systems, the precise mechanisms of its action have not been identified in terms of locating a single site of action or major receptor binding.\[^{31}\]

However, it is clear that modafinil's effect on various important neurotransmitters is at the heart of its potency, both as a eugeroic and as a nootropic.

- **Orexin/Hypocretin:** Much of modafinil's wakefulness promoting action is attributable to its action on the brain's orexin/hypocretin system, which is located in the hypothalamus and is responsible for regulating wakefulness, arousal, and appetite.\[^{32}\] The most common form of narcolepsy is caused by a lack of orexin, which modafinil is believed to address by acting directly on orexin neurons. Stimulating these neurons also increases the production of histamines and other important neurotransmitters that are related to wakefulness and alertness.

- **Histamine:** Though we usually hear about histamine in relation to allergies and local immune responses, it also plays an important role in the regulation of the sleep/wake cycle. Modafinil's action in the hypothalamus is believed to
elevate histamine levels, contributing significantly to wakefulness and alertness.[33]

- **Dopamine:** An important neurotransmitter associated with the stimuli/reward response, dopamine can improve mood and increase motivation and focus. Unlike amphetamines and other stimulants which directly stimulate dopamine release and increase dopamine levels in a very rapid and highly amplified manner, modafinil works indirectly by blocking the dopamine transporter or DAT, a protein that pumps dopamine out of the synapses back into intracellular fluid to be stored for future release. By blocking the DAT, modafinil effectively elevates the amount of dopamine available for immediate use in the brain.[34] This gradual and somewhat indirect action on the dopamine system is an important feature of how modafinil works because it reduces the “rush” type of euphoria that is associated with addiction.

- **Norepinephrine:** Modafinil increases the availability of norepinephrine, a stimulant neurotransmitter that promotes wakefulness and increases alertness. The exact means by which modafinil accomplishes this increase is unclear, though studies suggest that it blocks the norepinephrine transporter or NET in much the same way that it blocks the dopamine transporter, thus increasing the amount of immediately available norepinephrine.[35]

- **Glutamate and GABA:** Modafinil has been shown to both elevate levels of glutamate, the brain’s principal excitatory neurotransmitter, and decrease levels of the primary inhibitory neurotransmitter, GABA.[36] Glutamate plays a crucial role in cognitive function, and increased availability is believed to play important role in modafinil’s nootropic effects.[37] GABA produces a calming and relaxing effect that is necessary for sleep, and decreased levels are thought to play a role in Modafinil’s eugeroic effect.

- **Serotonin:** Modafinil is known to increase levels of serotonin, a neurotransmitter important for regulating mood, by stimulating the serotonergic system in the cortex, hypothalamus, and amygdala. While modafinil appears to enhance serotonin release, research indicates that it doesn’t cause serotonin release or reuptake.[38]

**DOSAGE**

Modafinil is a regulated drug that is approved for use only as a treatment for specific disorders, so there is no official recommendation for dosage when it is
used off-label as a nootropic. Many users report optimal results with dosages between 50–200 mg daily.\[39]\n
In the treatment of narcolepsy or sleep apnea, modafinil is most commonly prescribed in a single daily dose of 200 mg, to be taken immediately upon waking. For Shift Work Disorder, the recommended dosage is typically 200 mg, taken one hour before the commencement of the shift. \[40]\nFor adult ADHD, daily doses ranging from 200–400 mg have been prescribed. Doses up to 400 mg/day have been well tolerated, though there is no consistent evidence that doses greater than 200 mg/day provide additional clinical benefit. \[41]\n
The dosage for the treatment of other conditions, including mood disorder, addiction, and fatigue and cognitive impairment caused by multiple sclerosis, varies depending on each patient.\[42]\n
Modafinil appears to be safe for prolonged periods at moderate (100–200 mg) daily dosages, and large-scale clinical trials showed no significant indications of the development of tolerance over periods ranging up to several months.\[43]\nHowever, many off-label users self-report developing tolerance over periods as brief as a few days and recommend intermittent use or cycling.\[44]\n
Modafinil is both fast-acting and long-lasting. It is metabolized in the liver and peak plasma concentrations occur within 2 – 4 hours, though initial effects may be felt within an hour. It has a long half-life of 15 hours, and could potentially interfere with normal sleep patterns if taken late in the day.\[45]\n
**STACKING**

**Modafinil + Phenylpiracetam Stack**

This stack has been reported to increase energy and focus, as expected from modafinil, while the addition of phenylpiracetam and ALCAR help increase fluidity of thought, curiosity, and self-perceived creativity. Credit to TramMcD for this stack idea.

**1x per day**

- 50 mg Modafinil
- 100 mg Phenylpiracetam
SIDE EFFECTS

Though modafinil is generally considered both safe and well-tolerated, it’s a powerful substance and does have some possible negative side effects, which can range from minor annoyances to major health threats.

The most commonly reported side effects include headache, dizziness, upper respiratory tract infection, nausea, diarrhea, nervousness, anxiety, agitation, dry mouth, and trouble sleeping. These are considered minor and non-severe but should be reported to a physician if they persist or worsen.

There are a number side effects that are regularly though not frequently reported, and are considered very serious. Anyone who experiences them is advised to seek medical attention immediately. These include fever, easy bruising or bleeding, hallucinations, depression, chest pain, fast or irregular heartbeat, or mood changes such as confusion, depression, hallucinations, or thoughts of suicide.[46]

Modafinil is known to interact with a number of drugs, including high blood pressure medications and beta blockers, blood thinners, warfarin, anti-seizure medications, and some types of antidepressants. It may also decrease the effectiveness of hormonal birth control such as pills, patch, or ring.[47]

WHERE TO BUY

In many countries, including Canada, the US, the UK, and Australia, modafinil is only available by prescription.

Some people opt to order modafinil from international pharmacies where drugs are sold without a prescription; this may be illegal in your country, and there may be additional risks including receiving drugs that contain the wrong active ingredient, too much or too little of the active ingredient or contain dangerous ingredients.

However, adrafinil, which is a precursor to modafinil, is a legal alternative that has very similar effects. Like modafinil, adrafinil increases wakefulness and alertness, reduces fatigue, and offers substantial cognitive benefits, including better mood, memory, and motivation.
Click here to learn more about adrafinil.

Adrafinil can be purchased online from specialized vendors such as PureNootropics.net, a popular source for cognitive enhancing supplements.

**CLOSING THOUGHTS**

Modafinil is definitely one of today's most exciting, widely discussed, and intriguing nootropics, and with good reason: it packs the eugeroic and cognitive “punch” of amphetamines, making it possible to perform both physically and mentally at peak levels for long periods, but without amphetamines’ typical jitteriness, irritability, paranoia, and eventual devastating sleep-debt crash.

It’s generally safe and well-tolerated, and it appears to have a low potential for addiction.

But even a quick read through any of the top nootropic community forums will show that users’ results with modafinil are varied. While some are hailing it as a modern miracle that can change your life, make you smarter, and rewrite the book when it comes to the need for sleep, others caution that the modafinil experience isn't equally rosy for everyone. Some users report disappointing or even unpleasant outcomes, and others caution taking it off-label. Which view is correct?

As usual, both sides of the story are important. There’s no denying the decades of research that have irrefutably proven that modafinil has tremendous cognitive benefits and low addiction potential, but at the same time there’s no way around the fact that it is indeed a very powerful drug that can have some serious side effects, and to which everyone responds differently.

The bottom line? Decades of research have shown that modafinil is safe, effective, and well-tolerated, but it’s a regulated drug that cannot be legally purchased without a prescription in many countries, including the US, Canada, the UK, and Australia.

If you're interested in using modafinil for maximizing your cognitive abilities and minimizing fatigue and sleepiness for limited periods but don't want to run the risks associated with ordering from international pharmacies, you may want to consider its precursor, adrafinil.
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**NOOPEPT**

Noopept is a powerful, fast-acting nootropic that's an efficient brain booster and a potent neuroprotectant. It's similar to Piracetam but up to 1,000 times stronger, so a little Noopept goes a long way.

**SUMMARY**

Noopept is a powerful synthetic nootropic with proven cognitive enhancement and neuroprotective properties.

Its effects and mechanisms of action are similar to those of piracetam, but Noopept has a different chemical structure and is not technically a racetam. Like piracetam, Noopept enhances cognition, provides significant neuroprotection, and has both psychostimulant and anti-anxiety properties. The biggest differences between the two are relative strength and speed of action; Noopept is approximately 1,000 times more potent than piracetam,[1] and it is absorbed more rapidly.

Noopept also appears to work faster and last longer than piracetam,[2] and may have fewer undesirable psychostimulatory effects.[3]

Noopept was developed in Russia in the mid-1990s and continues to be used there as a prescription treatment for a variety of cognitive disorders, including traumatic brain injury, cerebral vascular insufficiency, and age-related cognitive decline.[4]

Though Noopept is very similar to piracetam and often grouped together with it, many users say they can feel the effects of Noopept within an hour of ingestion.[5][6]

Noopept is unregulated in both the US and Canada.

**BENEFITS AND EFFECTS**

**Memory and Learning**

Noopept was developed as a treatment for cognitive impairment, and it is best known as a brain booster and memory enhancer.
Like piracetam, Noopept assists with memory formation, but with additional benefits including enhanced memory consolidation and retrieval.\(^7\)

According to Russian pharmaceutical product information, Noopept improves learning ability and memory by acting on all phases of processing, from initial information processing to consolidation and extraction.\(^8\)

Most research on Noopept's effects on memory has been done on models of cognitive decline or brain damage, and it has been used successfully in Russia to treat a variety of cognitive impairments, including stroke,\(^9\) organic brain disease, age-related neurodegeneration, and alcohol-related brain damage.\(^10\)

At present, there are no documented studies on Noopept's cognitive enhancing effects on healthy humans, but anecdotal reports from users taking Noopept for its nootropic effects are positive.\(^11\)[12][13][14][15]

Some users also report improved sensory perception, including enhanced vision and hearing.\(^16\)[17][18]

### Increased Levels of NGF and BDNF

In animal studies, Noopept has been shown to stimulate the expression of two important cognition-related chemicals, Nerve Growth Factor (NGF) and Brain-Derived Neurotrophic Factor (BDNF).\(^19\)

NGF is a unique protein that is crucial to the growth, maintenance, and survival of nerve cells, including brain cells. NGF is a key component in neurogenesis, or the body's ability to create new nerve cells.

Neurogenesis is known to improve the performance of neural networks within the brain, and better brain structure is associated with enhanced performance in virtually all areas of cognition. Low levels of NGF are associated with a host of disorders, including dementia, Rett syndrome, schizophrenia, Alzheimer's disease, and bipolar disorder, as well as acute coronary and metabolic syndromes.\(^20\)

Brain-Derived Neurotrophic Factor (BDNF) has a similar role to NGF but is primarily active in the hippocampus, cortex, and basal forebrain, areas of the brain that are vital to learning, memory, and higher thinking.\(^21\) BDNF is one of the most important molecules involved in memory, playing a vital role in both short-term and long-term memory formation.\(^22\)
Neuroprotective Properties

Studies show that Noopept has powerful neuroprotective properties that help protect the brain from a variety of factors that impair cognition.

Noopept is a potent antioxidant that protects cells against oxidative damage from free radicals, incomplete molecules formed when the body is exposed to contaminants or stressors. Oxidative damage is closely associated with age-related cognitive decline and neurodegenerative disorders such as Alzheimer's disease.[23]

Noopept is also an effective anti-inflammatory agent,[24] which may further protect and enhance cognition; systemic inflammation is associated with loss of spatial reasoning, short-term memory, verbal proficiency, verbal learning and memory, and executive function.

In addition, Noopept protects and promotes neurological health by improving blood flow to the brain and inhibiting neurotoxicity caused by excess calcium and glutamate. [25]

Anxiety Reduction

There is evidence that Noopept may be able to reduce anxiety.

Animal studies suggest that subjects treated with Noopept appeared to have significantly lower anxiety levels,[26] and in a human study of patients with mild cognitive disorders, 10 mg of Noopept twice daily resulted in anxiety reduction.[27]

Self-reports from users vary on Noopept’s anxiolytic ability. Some users say they find it relieves anxiety, while others say Noopept actually makes them feel anxious.[28]

HOW IT WORKS

Noopept is metabolized in the liver, rapidly absorbed by the digestive system, and readily crosses the blood-brain barrier.[29] Noopept acts quickly once it is in the bloodstream, maximizing concentration after just 15 to 20 minutes.[30]

Noopept’s exact mechanisms of action are not completely understood, but it is thought to work in the brain in several ways. It is believed to have a sensitizing effect on acetylcholine processes, effectively increasing the neural response to
acetylcholine, the neurotransmitter most closely associated with learning and cognition.\textsuperscript{[31]}

It has also been shown to increase expression of both NGF and BDNF, two important neurotrophin proteins that play a vital role in cognition and memory.

Animal studies further suggest that Noopept modulates the activity of both AMPA and NDMA receptors, which regulate brain levels of the excitatory neurotransmitter glutamate.\textsuperscript{[32]} This action not only prevents glutamate toxicity, which can lead to neuronal damage, it also enhances neuroplasticity, which is crucial to the formation of long-term memories.

Noopept has been shown to have significant antioxidant and anti-inflammatory capabilities, which make it a powerful neuroprotectant.

In addition, it is known to promote the elimination of excess glutamate and calcium and improve blood composition and flow.\textsuperscript{[33]}

**DOSAGE**

The standard dose of Noopept is 10 mg, taken twice per day after a meal. Dosage may be increased to 30 mg per day if necessary.\textsuperscript{[34]}

Taking Noopept late in the evening may interfere with sleep.

The recommended course of prescription Noopept treatment is 1.5 to 3 months, but if necessary, another cycle may be started after a 1-month break.

It is recommended to start with the minimum effective dose and increase dosage only as needed. Some users report that higher doses diminish the desired cognitive effects of Noopept.\textsuperscript{[35]}

User experiences differ on whether or not prolonged uninterrupted use of Noopept leads to tolerance. Many users say they take Noopept in cycles to prevent tolerance.\textsuperscript{[36][37]}
STACKING

Noopept can be taken alone but also does very well in nootropic stacks for additional synergistic benefits.

**Noopept, Piracetam, and Choline Stack**

Because Noopept delivers results similar to piracetam, stacking the two may result in synergistic benefits.

The two nootropics work on two different neurotransmitters, glutamate and acetylcholine, respectively. Enhanced functionality of both transmitters could create a boost to a variety of cognitive processes.

Furthermore, adding a choline supplement to the stack could make the piracetam more effective and help to hold off headaches reported by some initial-stage Noopept users.

**1x–2x per day**

- 10 mg [Noopept](#)
- 2 g [Piracetam](#)
- 300 mg [Alpha GPC](#)

**Noopept, Aniracetam, Sulbutiamine Stack**

Stacking Noopept with aniracetam and sulbutiamine would be a powerful stack that may not only boost cognition but also provide improvements to mood as well as reduce anxiety.

These effects on mood and anxiety should also indirectly lead to improved creativity and mental performance due to the relaxed mindstate.

Sulbutiamine should be cycled to avoid building up a tolerance to it.

**1x–2x per day**

- 10 mg [Noopept](#)
- 750 mg [Aniracetam](#)
- 200 mg [Sulbutiamine](#)
Noopept and Mind Lab Pro Stack

An easy and effective stack is to combine Noopept with a preformulated nootropic blend, such as Mind Lab Pro by Opti-Nutra which contains 11 all-natural research-backed ingredients. Mind Lab Pro can serve as an excellent foundation to your stack as it is designed to improve all aspects of memory, mental performance, mood and stress resistance, maintenance, and brain repair.

For a detailed overview of its ingredients and effects, refer to our Mind Lab Pro review.

1x–2x per day

- 10 mg Noopept
- 2 capsules Mind Lab Pro

SIDE EFFECTS

Noopept is generally considered safe and well tolerated, with only minor side effects including headaches, restlessness, dizziness, and irritability. These are most common when Noopept is taken in high doses.

Some users report that Noopept temporarily impairs short-term memory when taken above recommended dosages.\(^{[38][39]}\)

Noopept is contraindicated for women who are pregnant or lactating, people with lactose intolerance or kidney or liver malfunction, and children under 18 years of age. Noopept may also increase blood pressure in individuals with hypertension.\(^{[40]}\)

WHERE TO BUY

Noopept is not typically available for purchase at brick-and-mortar stores. If you’d like to buy Noopept, you’ll need to order it online.

We recommend ordering Noopept from PureNootropics.net as they are a reliable and reputable source for bulk nootropic powders.
CLOSING THOUGHTS

Noopept is a popular nootropic with a growing user base.

It’s effective and well-tolerated, and its standard low dosage makes it both affordable and easy to use. It works well on its own, and it shines in combination with other nootropics, which makes it a top choice for stacking.

Most side effects less-than-satisfactory experiences are related to high doses, and the possibility of developing tolerance is easily managed through cycling.

Whether you’re an experienced nootropic user or just getting started, Noopept may be worth your consideration.

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OXIRACETAM

Oxiracetam may enhance memory, concentration, and learning ability. It also acts as a mild stimulant that may improve and restore both physical and mental energy.

SUMMARY

Oxiracetam is a potent and popular nootropic that has been shown to enhance a broad range of cognitive processes such as memory, learning capacity, attention, and even verbal fluency.[1][11]

It also acts as a mild stimulant that may increase mental energy, alertness, and motivation.[2]

Developed in the 1970s, oxiracetam is a synthetic derivative of piracetam, the original nootropic. Though its chemical structure and mechanisms of action are similar to those of piracetam, oxiracetam is more potent.[3]

Its stimulant properties, which are similar to those of phenylpiracetam, are powerful enough to promote wakefulness without significantly interfering with normal sleep patterns.[4]

Oxiracetam has been studied as a potential treatment for memory loss related to Alzheimer’s disease and other neurological conditions. Clinical trials involving aged patients with cognitive decline indicate oxiracetam may be useful in dementia treatment, and there is even clinical evidence that it can help restore memory.[5]

Research suggests that oxiracetam is safe and effective in long-term therapy,[6] and may promote and preserve brain health.[7]

Though there is no documented research on oxiracetam’s effect on young, healthy human subjects, it is a popular nootropic believed by many to enhance memory, learning ability, and overall cognition regardless of age or cognitive condition.

Oxiracetam has not been explicitly approved for any specific use by the USFDA. Oxiracetam is currently unregulated in the US, Canada, Australia, and the UK.
BENEFITS AND EFFECTS

Oxiracetam offers a broad range of nootropic benefits, including the following:

**Improved Memory**

Oxiracetam’s potential as a memory booster is one of its best known and most studied properties.

Both animal studies[^8][^9] and clinical trials on adults with age-related cognitive decline[^10][^12] indicate that oxiracetam can improve memory in general, enhancing both memory formation and retention and exerting a significantly positive effect on the speed of recall.[^13]

There are no studies on how oxiracetam affects users with normal cognitive ability, but anecdotal evidence indicates that it acts as a powerful memory boosting nootropic, particularly useful to students taking exams[^14][^15] or studying logic-intensive subjects such as math.[^16]

Animal studies on healthy rodents appear to support these reports.[^17]

**Learning Enhancement**

Both animal studies[^18][^19] and research involving dementia patients[^20] indicate that oxiracetam can improve learning ability. This effect may be due to oxiracetam’s ability to improve the speed of both memory formation and recall.

**Concentration and Focus**

Anecdotally, oxiracetam is reported to improve overall concentration and focus, making it easier to learn for extended periods of time without waning interest or attentiveness.[^21]

Oxiracetam’s cognitive enhancement effects combined with its mild stimulant properties make it attractive to individuals looking for a combination of focus and energy.
**Enhanced Verbal Fluency**

In studies on elderly subjects with primary or multi-infarct dementia, oxiracetam supplementation was shown to stem symptoms of cognitive decline with a particularly marked positive effect on verbal fluency and verbal learning.\[^{22}\][\[^{23}\]]

**Neuroprotectant**

Research suggests that oxiracetam may have a significant neuroprotective effect that could potentially block the brain damage associated with Alzheimer’s disease and other forms of dementia.

In animal studies, brain trauma typical of neurological disorders was modeled by introducing neurotoxins known to impair memory formation. The studies indicated that animals given pre-treatment with oxiracetam were resistant to neurotoxicity.\[^{24}\]

In further testing, oxiracetam was also found to alleviate blood-brain barrier dysfunction and protect against ischemic stroke in rats.\[^{25}\]

**Mild Stimulant and Promotes Wakefulness**

Oxiracetam is a cholinergic, or substance which releases or responds to the neurotransmitter acetylcholine, and as such acts as a mild psychostimulant.

In animal testing, it was shown to promote arousal and inhibit sleep.\[^{26}\]

Studies also indicate that it may promote wakeful alertness by enhancing blood flow to and within the brain, improving energy metabolism.\[^{27}\]

**HOW IT WORKS**

While its exact mechanisms of action are not completely understood, oxiracetam’s actions are similar to those of other racetam-class drugs, which enhance cognitive function by stimulating specific neurotransmitter receptor sites and directly modulating the production and release of certain neurotransmitters.\[^{28}\]
Modulates Cholinergic and Glutamatergic Systems

Oxiracetam affects both the cholinergic and glutamatergic systems and directly modulates the release of their respective neurotransmitters, acetylcholine and glutamate.

Both of these neurotransmitters are crucial to memory, learning, and overall cognitive function. This action is similar to that of other racetams, including piracetam, but oxiracetam's effect is more potent and long-lasting.

Enhances Neuronal Communication

Oxiracetam has also been shown to enhance neuronal communication in the hippocampus, the part of the brain that regulates emotion, memory, and the autonomic nervous system, by affecting lipid metabolism and stimulating the release of D-aspartic acid.[29][30]

Both of these actions have the effect of improving neural signaling, which is closely associated with enhanced memory, cognition, and motivation.

Acts as a Mild Stimulant

Oxiracetam is known to act as a mild central nervous system stimulant.

This effect may be attributable in part to the fact that it is an ampakine.[31]

Ampakines are compounds that interact with the glutamatergic AMPA receptors. Ampakines are classed as stimulants but appear to lack many of the classic adverse side effects, such as sleeplessness and feelings of nervousness, that are strongly associated with other stimulants such as amphetamine, caffeine, and methylphenidate (Ritalin).[32]

DOSAGE

Dosage recommendations for oxiracetam, based on human studies, range from 1200–2400 mg per day, split into two or three doses.[33][34][35]

Though studies using higher cumulative daily doses of oxiracetam have shown no adverse effects,[36] it is recommended to begin with the lowest effective dosage and gradually increase as needed.
For maximum cognitive enhancing effects, oxiracetam should be taken one hour before a learning activity. Research suggests that it may also be beneficial to take oxiracetam regularly for at least five days before peak performance is established.\textsuperscript{[37]}

Attempting to bypass the benefits of regular usage by taking an initial high dose of oxiracetam is an approach that should be considered with caution. While the concept behind high initial doses is to deliver maximum effects in minimum time, there is no documented evidence that a single high dose will provide maximum benefits. High doses also significantly increase the possibility of unwanted side effects such as headaches.

Oxiracetam is water soluble and mixes readily, therefore it can be taken in either capsule or powder form, with or without food.

It is absorbed from the gastrointestinal tract, reaching peak levels within 1–3 hours of ingestion. It has been shown to cross the blood-brain barrier within an hour of ingestion, and it has a relatively long half-life of 8–10 hours.\textsuperscript{[38]}

**STACKING**

Oxiracetam works exceptionally well as a cognitive enhancer and mild central nervous system stimulant, both on its own and in combination with other supplements.

It’s important to remember that when racetams are stacked their individual effects may be magnified.

**Oxiracetam and Choline Stack**

It’s essential to maintain sufficient choline in the system when taking oxiracetam or any racetam-class nootropic, so it’s typically recommended to include a good choline source in your daily regimen.

Maintaining sufficient choline will not only help maximize the effect of oxiracetam, but it will also go a long way toward eliminating headaches, which are the most commonly reported side effect.

*1x–2x per day*
**Oxiracetam and Pramiracetam Stack**

Oxiracetam stacks particularly well with other racetams.

When stacked with pramiracetam, it can enhance and extend the powerful cognitive enhancement effects of both supplements, and the mild CNS stimulation it provides can improve feelings of alertness and mental energy.

**1x–2x per day**

- 750 mg Oxiracetam
- 300 mg Pramiracetam

**Oxiracetam and Aniracetam Stack**

When stacked with aniracetam, which like oxiracetam is an ampakine, the powerful cognitive enhancement and mild stimulant properties of both supplements work very well together.

The distinct mood-elevating and anxiety-lessening effects of aniracetam create an effect that users describe as mellow and pleasant.

An example oxiracetam and aniracetam stack may look like this.

**1x–2x per day**

- 750 mg Oxiracetam
- 750 mg Aniracetam

**SIDE EFFECTS**

Oxiracetam is generally well tolerated, and no serious side effects have been reported, even when taken at high dosages.[39][40]

The most commonly reported unpleasant side effect of oxiracetam is headache, which is true of all racetam class nootropics. Racetam related headaches are usually associated with either high dosage or choline depletion, so adding a good
cholesterol source to your regimen or reducing the amount of oxiracetam ingested can often eliminate the problem.\textsuperscript{[41]}

Because it does have mild stimulant properties, oxiracetam could potentially interfere with normal sleep cycles if taken too late in the day.

Side effects of insomnia and nervousness, while rare, have occasionally been reported.\textsuperscript{[42]} These effects can generally be avoided by taking oxiracetam earlier in the day or reducing dosage.

**WHERE TO BUY**

Oxiracetam can be purchased online via vendors that specialize in nootropics.

We recommend that you buy oxiracetam from PureNootropics.net, a popular source of nootropics due to their competitive pricing and high-quality products that are all tested for purity by 3rd party laboratories.

**CLOSING THOUGHTS**

Oxiracetam is a powerful synthetic nootropic with a proven track record of cognitive enhancement backed by decades of research. Clinical trials indicate that it can enhance memory formation and retention,\textsuperscript{[43]} increase learning ability,\textsuperscript{[44]} and improve verbal fluency;\textsuperscript{[45]} it is also a mild stimulant that has been shown to increase alertness,\textsuperscript{[46]} and it has neuroprotective properties that can help keep the brain healthy.\textsuperscript{[47]}

Oxiracetam is known to be safe and non-toxic even at high doses, and it is associated with virtually no serious side effects.\textsuperscript{[48]}

It works well on its own and in combination with other supplements and is considered by many to be a worthy component of any nootropic stack.

Though there are no documented studies on oxiracetam's effects on young, healthy subjects, it is a popular nootropic with a strong following among students and others seeking sustained mental energy for processing information over extended periods of time.
If you’re looking for a safe, reliable nootropic to give your energy, motivation, and general cognition a boost, oxiracetam may be one to try.

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PHENIBUT

Phenibut is a central nervous system depressant developed in Russia for the treatment of anxiety disorders. It’s a proven calmative that may also have cognitive enhancing effects.

SUMMARY

Phenibut is a central nervous system depressant developed in the 1960s in Russia as a treatment for insomnia and anxiety. It is sold by prescription in Russia, Latvia, Kazakhstan, and the Ukraine, where it is used for a variety of conditions ranging from sleep disorders and depression to alcoholism, stuttering, and motion sickness.[1]

It is not approved for any medical use in North America or Europe but is widely used off-label as a recreational drug and nootropic.

Phenibut is a controversial supplement. Many people praise it for its ability to reduce anxiety and increase social fluency. Others are skeptical due to the lack of human studies on it, along with its many side effects, the potential for overdose and addiction, and intense withdrawal symptoms make it a dangerous drug.

Phenibut’s legal status varies throughout the world. In the US it is unregulated and can be legally sold and possessed. It is illegal to sell phenibut in Canada, but it can be legally imported and possessed in amounts not exceeding a 90-day supply. In other nations, regulations on phenibut are complex and varied.

BENEFITS AND EFFECTS

Anti-Anxiety Treatment

Phenibut was created as an anxiety reducer. It is widely used in Russia to treat a range of anxiety-related disorders, including tension and fear, asthenia, depression, post-traumatic stress syndrome, and as a pre- or post-operative medication. It is also used to treat post-traumatic stress, stuttering, and balance disorders.[2]
The majority of research on phenibut consists of Russian animal studies, but there is more human research on its anti-anxiety properties than any other aspect of the drug.

In one study trial involving 30 children aged 8 to 16 years old, daily administration of phenibut for 2 months was shown to diminish occurrences of tension headaches.[3]

In a similar study by the same research group, 500 mg of phenibut was given daily to 34 adolescents with ADHD, while their mothers were given a tranquilizer called Adaptol. At the end of the 45-day study, 73.5% of the adolescents showed improvement in anxiety symptoms, while 69.7% of the mothers showed improvement.[4]

In a study of 62 adult patients with anxiety-phobic disorders, supplementation with 1000 mg of phenibut daily resulted in improvements in 73% of cases.[5]

Many users report that phenibut gives them relief from social anxiety,[6] obsessive-compulsive disorder,[7] and psychiatric problems.[8]

**Cognitive Enhancement**

Phenibut's creators describe it as a cognitive enhancer, but research on that effect is minimal.

In one of the few cognition-related human studies, a group of 50 adolescents with ADHD given 500–700 mg of phenibut per day for a month were reported to show improvement in self-control, sustained attention, and acoustic-verbal memory.[9]

Animal studies suggest that phenibut enhances cognition by facilitating movements in response to a conditioned stimulus,[10] accelerating the development of defensive conditioning,[11] and improving interhemispheric transmission in rat brains.[12]

Whether or not phenibut has significant nootropic properties is a subject of debate among users, with some saying that it gives them mental clarity and motivation.[13] Others report that its sedating effects are so strong that it interferes with mental performance.[14]
Insomnia Treatment

In countries where phenibut is prescribed, such as Russia, often used to treat insomnia and sleep disorders.\footnote{15}

Anecdotal evidence from users on this aspect of phenibut is mixed. Some users say that it can provide sound, refreshing sleep when taken in relatively low doses.\footnote{16} Others report that taking phenibut interfered with their ability to fall or stay asleep.\footnote{17}

HOW IT WORKS

Phenibut is an analog of the brain chemical gamma-aminobutyric acid or GABA, the primary inhibitory neurotransmitter.

GABA blocks impulses between nerve cells in the brain, playing the opposite role of the excitatory neurotransmitter glutamate.

Though GABA can be taken as a supplement, it cannot cross the blood-brain barrier.

Phenibut is created by adding a phenyl group to the GABA molecule, which enables it to cross the blood-brain barrier and bind to GABA receptors in the brain.

Activating GABA receptors calms neural activity, reducing anxiety and creating a sense of relaxation. This action is believed to be responsible for phenibut's calmative and anti-anxiety properties.\footnote{18}\footnote{19}

Phenibut also stimulates the brain’s receptors for dopamine, the neurotransmitter associated with pleasure, reward, and motivation. This action may be responsible, at least in part, for the mood lifting, decrease of social anxiety, and feelings of euphoria reported by many phenibut users.\footnote{20}

Phenibut is metabolized in the liver and crosses the blood-brain barrier within 2–4 hours of ingestion. It has a half-life of about 5 hours, and its duration of action can extend from 15–24 hours, depending on the amount ingested.\footnote{21}\footnote{22}
DOSAGE

The recommended dosage of the branded version of phenibut, Noofen, for anxiety treatment is 250–500 mg, taken 3 times per day.\[^{[23]}\]

The maximum single dose can be increased to 750 mg for patients under 60 years old.\[^{[24]}\]

The course of treatment is 2–3 weeks, but can be extended to a maximum of 4–6 weeks, if necessary.\[^{[25]}\]

There is no universally accepted optimal dosage for phenibut taken recreationally or for off-label use. Users report a wide range of dosages.\[^{[26]}\[^{[27]}\]

It's worth noting that the usual recommendation to start with the lowest possible effective dosage and adjust as necessary is particularly pertinent to phenibut. It's a very potent and long-lasting compound, and its effects vary considerably from user to user.

Cases of overdose\[^{[28]}\] and dependence\[^{[29]}\] related to high doses have been documented, and higher doses are more likely to trigger unpleasant side effects.

Taking phenibut regularly can lead to dependence and addiction.\[^{[30]}\[^{[31]}\]

STACKING

Stacking is the term used when two or more nootropic supplements are taken to derive synergistic benefits through the presence of the other components. This practice has commonly been among nootropic users.

When it comes to phenibut, it is sometimes added to people's stacks simply to reduce anxiety on days that are extra stressful.

Stack for Mood and Anxiety

Because phenibut has known anxiety-reducing and quality sleep-generating results, the supplement should be a consideration for any mood enhancing stack.

A fairly powerful stacking option to address anxiety, mood control, or sleeplessness is a combination of phenibut, phosphatidylserine, and bacopa monnieri.
### Stack for Athletic Recovery

Today, extreme athleticism seems to be the lifestyle of many weekend warriors.

Athletes seeking an additional edge or extra help with hard training may consider a recovery stack.

Phenibut in combination with L-theanine and centrophenoxine could help to reduce body soreness, help to motivate to a new strength or endurance level and result in enhanced muscular development.

### SIDE EFFECTS

Side effects associated with phenibut range from headaches, excessive sleepiness, hangover-like effects, dizziness, nausea, poor balance, fatigue, and feelings of electric shocks in the arms and legs.

When taken in large doses, phenibut can cause trouble breathing and unconsciousness.\(^{[32]}\)

Phenibut users also report additional side effects related to high doses, including vivid nightmares, night sweats, sleep paralysis, and night terrors;\(^{[33]}\) severe depression;\(^{[34]}\) and sexual/erectile dysfunction.\(^{[35][36]}\)

According to user self-reports, withdrawal symptoms including anxiety, insomnia, and depression are very common and may be experienced even after taking phenibut for a short time.\(^{[37]}\)
There is no documented listing of substances with which phenibut is known to interact, but it may dangerously potentiate other compounds that affect GABA or depress respiration, including benzodiazepines, antidepressants, opioids (such as oxycodone and hydrocodone), or alcohol.[38]

WHERE TO BUY

Phenibut can be purchased online in bulk powder form from specialty vendors. We recommend AbsorbYourHealth.com as a trusted source for ordering phenibut or any other nootropics that you may be looking for.

CLOSING THOUGHTS

For many people, phenibut relieves crippling anxiety and restores them to normal life. Others condemn it as a dangerous and potentially addictive pharmaceutical that's easy to abuse.

Phenibut has been used in Russia as a reportedly successful medical treatment for more than 50 years, but taking a prescription drug under the supervision and monitoring of a physician is different than self-medicating.

There isn't a lot of available research on how phenibut affects humans, but studies indicate that it can be a medically sound treatment for anxiety-related disorders.

As phenibut use becomes more common, more is being learned about its many side effects, withdrawal symptoms, and alarming potential for dependence and addiction.

Does phenibut have significant nootropic properties? Possibly, but there isn't enough research on how it affects human cognition to say for sure.

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PHENYLPIRACETAM

Phenylpiracetam is a powerful racetam nootropic, developed in Russia for use by cosmonauts on long space missions. It’s a potent stimulant that may also improve mood, memory, cognition, and even athletic performance.

SUMMARY

Phenylpiracetam is a powerful synthetic stimulant nootropic that may enhance memory, cognition, mood, and physical function.[1]

Phenylpiracetam is a modified version of piracetam developed at the Russian Academy of Sciences in 1983. It was created as a treatment for the prolonged stress experienced by cosmonauts on extended space missions.[2]

Though human research on phenylpiracetam is limited to a small number of Russian studies, it has been shown to help restore neurological functions and daily living activities to post-stroke patients,[3] and improve depression, anxiety, and cognitive function in patients with organic brain lesions.[4]

Phenylpiracetam was sold by prescription in Russia under the name Phenotropil until 2017. Production was discontinued due to conflicts between Phenotropil inventor Valentina Akhapkina and Russian pharmaceutical company Valenta, which produced the drug. A newly-formed company called Vira Innfarm will produce the drug in the future.[5]

In North America and other parts of the world, phenylpiracetam is widely used off-label as a nootropic, believed by many to enhance memory, focus, productivity, and physical stamina.

Phenylpiracetam has not been approved for any use by the US Food and Drug Administration and is unregulated in the US, where it can be legally sold and purchased. It can not be legally sold in Canada but may be legally imported and used there.

Phenylpiracetam has been banned by the World Anti-Doping Agency because of its stimulant properties and its ability to help users tolerate extreme cold.[6]
**BENEFITS AND EFFECTS**

**Memory and Cognitive Enhancement**

Clinical trials show that phenylpiracetam improved cognition in stroke patients\(^7\) and patients with organic brain lesions.\(^8\)

While there is no documented research on how phenylpiracetam affects young, healthy individuals, many users report that it makes them alert, motivated, and productive.\(^9\)[10]

Some users say it particularly enhances memory, bringing back memories from many years ago.\(^11\)

Animals studies indicate that phenylpiracetam has anti-amnesic properties.\(^12\)[13]

**Energy Booster**

Phenylpiracetam is known to act as a psychostimulant, an effect that may be due in part to its chemical resemblance to phenethylamine substances like Adderall.

The extent of phenylpiracetam’s energizing effect on humans has not been studied, but animal testing confirms that it increases locomotor activity.\(^14\)

A 2015 patent application for phenylpiracetam’s use as a sleep disorder treatment says tests on rats indicated the compound’s ability to combat sleepiness and improve motivation is stronger than that of methylphenidate and amphetamine.\(^15\)

Many user self-reports indicate that phenylpiracetam's stimulant effects are similar to those of modafinil, decreasing feelings of fatigue and improving both productivity and social fluency.\(^16\)

Other users say its effects are similar to those of dextroamphetamine.\(^17\)

Phenylpiracetam is included on WADA’s list of banned stimulants.\(^18\)
**Anxiety Reducer and Antidepressant**

Animal studies suggest that phenylpiracetam can act as an anti-depressant and anxiolytic, preventing anxiety and fear response while increasing locomotion and exploratory behavior in mice.\(^{[19]}\)

Though there are no documented human studies on this aspect of phenylpiracetam, user reports confirm that it has significant anti-depressant and anti-anxiety effects.

Former Russian cosmonaut Aleksandr Serebrov, who took phenylpiracetam during his 197-day space voyage, said it was prescribed for its ability to enhance the performance of both the mind and body under high stress. Serebrov described phenylpiracetam as an “equalizer of the whole organism” and “completely excluding impulsiveness and irritability, inevitable in the conditions of high nervous tension of space flight.”\(^{[20]}\)

**HOW IT WORKS**

Phenylpiracetam’s chemical structure is the same as piracetam, with an additional phenyl group attached. The phenyl group increases phenylpiracetam’s ability to dissolve in fats, oils, and lipids, which in turn may enhance its absorption within the body.\(^{[21]}\) This property may explain why phenylpiracetam is more potent than piracetam and how it crosses the blood-brain barrier more readily and efficiently.

Phenylpiracetam is fast-acting, detectable in the brain within 30 minutes of ingestion. It has a half-life of 2–3 hours.

In the brain, phenylpiracetam has several mechanisms of action, most of which involve stimulating the production of various neurotransmitters.

It acts as an ampakine, increasing levels of the excitatory neurotransmitter glutamate by stimulating AMPA receptors. This action is associated with improved cognitive function\(^{[22]}\) and may play a significant role in phenylpiracetam’s ability to enhance memory, focus, and overall cognition.

Animal studies showed that phenylpiracetam also increases extracellular dopamine levels, both by activating the dopaminergic system and by acting as a dopamine reuptake inhibitor.\(^{[23]}\) Dopamine is an important neurotransmitter that is
associated with reward, motivation, memory, attention and the regulation of emotions and body movements. Increased dopamine levels are believed to be responsible, at least in part, for phenylpiracetam's positive effects on motivation, mood, and focus.

Dopamine is also a direct precursor of the stimulatory neurotransmitter norepinephrine, which increases heart rate, blood pressure, and the levels of fat and sugar in the blood. These effects are thought to be related to phenylpiracetam's energy and stamina boosting capability.

Like other racetam-type nootropics, phenylpiracetam also increases production of acetylcholine, sometimes referred to as “the learning neurotransmitter” because it is so closely associated with all aspects of cognition. The brain uses choline to produce acetylcholine and may quickly deplete its stores when taking racetams, which is why supplemental choline is generally suggested to be taken with phenylpiracetam.

**DOSAGE**

A typical dose of phenylpiracetam ranges from 100–250 mg per dose, taken with meals, up to three times a day. It is not recommended to exceed the maximum dosage of 750 mg per day.\[24]\n
New users are advised to start at the lower end of the dosage range and increase if necessary.

It is widely but not universally reported by users that tolerance to phenylpiracetam's effects may develop relatively quickly; user self-reports suggest that tolerance is limited to phenylpiracetam's energizing and physical stamina properties.\[25]\n
Many users advocate cycling the phenylpiracetam or taking it as an occasional “booster” as needed rather than taking it continuously.\[26][27]\n
**STACKING**

Here is an example of how phenylpiracetam can be combined with other nootropics, for enhanced effects.
**Daily**

- 300 mg **Alpha GPC**
- 1 dose **Fish Oil**
- 1 dose **Multivitamin**

**As Needed for Studying/Workouts/Tests**

- 100 mg **Phenylpiracetam**
- 200 mg **Sulbutiamine**

This stack may be especially suitable for students or athletes. A healthy balanced daily routine while saving the powerful effects of phenylpiracetam for when it is needed most.

Benefits may include enhanced motivation, focus, energy, a reduced need for sleep, increased stamina, and improved mood.

**SIDE EFFECTS**

Like other nootropics in the racetam class, there are few reported side effects from supplementing phenylpiracetam at the recommended dosages.

The most commonly reported side effect are headaches, which is typical of most racetams, and may be a sign that additional choline should be supplemented.\[^{28}[^{29}]\]

Some users report unpleasant effects the day after taking phenylpiracetam, including irritability and brain fog.\[^{30}\]

Others say that taking high doses of phenylpiracetam continuously over a prolonged period can result in difficulty sleeping, depression, and emotional instability.\[^{31}\]

**WHERE TO BUY**

Phenylpiracetam can be ordered online from PureNootropics.net. They are one of our trusted suppliers for nootropics as their batches are tested for purity by third-party labs.
Always stick to reputable vendors when buying nootropics.

CLOSING THOUGHTS

Phenylpiracetam is a powerful drug with an intriguing history and an impressive list of potential benefits.

Originally developed for use by Soviet cosmonauts on long space voyages, it’s known to be a potent stimulant that can help users tolerate extreme cold. It was prescribed in Russia as a general tonic for more than a decade, and it’s believed by many to boost mood and motivation, improve memory and focus, and enhance general cognition.

Its energizing and stamina-producing properties are intense, fast acting, and effective enough to land it on WADA’s list of banned stimulants.

Many users say it gives them a powerful cognitive boost and makes them intensely productive, fiercely focused, and extremely motivated.

There are few documented side effects, and it’s readily available at reasonable prices.

There is little available documented research on how phenylpiracetam affects humans, so most evidence is based on anecdotal reports.

Its effects appear to vary considerably from user to user. User self-reports suggest tolerance to its energizing and physical stamina effects may build quickly, and though most users experience little to no side effects, others say it leaves them with a definite “day after” syndrome that includes lethargy, irritability, and brain fog.

Taken responsibly, with close attention to recommended dosages, cycling, and stacking, phenylpiracetam may provide a significant physical and cognitive boost.

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PHOSPHATIDYLSEERINE

Phosphatidylserine is a natural compound that helps maintain cellular health, improves mood, memory, and learning ability, reduces the effects of stress, and has been proven to slow or even reverse age-related mental decline.

SUMMARY

Phosphatidylserine or PS is a little-known but extremely important compound that occurs naturally in all species. It's essential for cellular health, structure, and protection, but that's just part of the PS picture: studies show that it's also a powerful nootropic that may sharpen memory, increase focus, and enhance the ability to learn, reason, and solve problems.[1]

PS is an amino acid derivative compound that's naturally manufactured by the body but is also available through diet and supplementation. Its primary function is as a crucial component of the cellular membrane, a phospholipid layer that surrounds all cells and provides structure and protection. PS keeps the membrane flexible and fluid, promotes cellular healing, and helps the cells take in crucial nutrients and flush out waste products.

In addition, research has proven that PS is vital to virtually all aspects of cognitive function, including memory, mental processing speed and accuracy, and language. It has also been shown to fight the effects of stress and is believed to prevent or delay the onset of age-related cognitive decline effectively.[2]

In early life, the amount of PS that the body naturally synthesizes and assimilates from foods (including soy lecithin, meat, and some fatty fish) is generally sufficient to prevent deficiency. But studies show that PS levels decline with age,[3][4] suggesting that natural production and dietary assimilation may become less efficient as we get older. This change means that supplementation may be key to realizing the many therapeutic and nootropic benefits PS offers.

PS supplements were originally made from cow brains, but because of concerns about potential pathogens in animal tissue PS supplements are now typically derived from soy lecithin, sunflower, and even cabbage.
PS is sold without prescription as a dietary supplement in the US and Canada.

**BENEFITS AND EFFECTS**

At the most basic level, PS helps the entire organism by keeping cellular membranes strong, flexible, fluid, and healthy. But studies show that supplemental PS offers a host of substantial benefits for both brain and body.

**Improves Memory**

PS is a tested and proven memory booster, particularly among the elderly. Japanese research involving adults aged 50 and over who had memory complaints showed that PS supplementation increased both overall memory scores and verbal recall.[5]

PS supplementation on Alzheimer’s patients had similar positive results, significantly improving memory along with lifting mood and increasing verbal fluency.[6]

**Reduces the Negative Effects of Stress**

PS is known to downregulate the release of cortisol, often referred to as “the stress hormone.”

Cortisol is intended to provide the body with a boost of emergency energy under stressful situations; it does this by converting a portion of the body's protein stores to glucose, which can fuel the “fight or flight” response.

However, high cortisol levels over extended periods of time can lead to hyperglycemia, hypertension, metabolic syndrome, suppressed libido, and other serious physical problems.

PS has been shown to significantly reduce concentrations of cortisol in subjects exposed to mental stressors and to help maintain the efficiency of the adrenal glands, especially in response to mental stress.[7]

PS supplementation has also been shown to positively influence mood and help regulate heart rate under stress.[8]
Many users self-report that PS acts as an anxiolytic, improving mood, reducing irritability, and providing a relaxed feeling.\(^{[9][10]}\)

**Improves Symptoms of Depression**

Studies indicate that PS supplementation can substantially improve depressive symptoms in people of all ages.

Trials involving geriatric patients of both sexes who experienced late-life depression showed that PS supplementation improved memory and reduced depression-related cognitive impairment.\(^{[11]}\)

In otherwise healthy young males, PS supplements improved emotional responses and reduced symptoms of distress.\(^{[12]}\)

In children with depressive disorder, supplementation with PS and omega-3 fatty acids improved attention and cognition and relieved depressive symptoms.\(^{[13]}\)

**Boosts Endurance and Improves Athletic Performance**

Research on PS’s ability to improve sports and athletic performance is ongoing, but there is evidence that PS supplementation can increase the amount of time that people can do strenuous exercise before reaching the point of exhaustion. This effect is believed to be due at least in part to the fact that PS helps keep the body’s choline levels stable, preventing the choline depletion associated with exhaustion and fatigue.\(^{[14]}\)

**Relieves Symptoms of Alzheimer’s and Parkinson’s Diseases**

One of the most exciting possibilities for supplemental PS is as a treatment for Alzheimer’s disease and other forms of dementia.

Research has conclusively shown that PS increases learning ability, improves memory and verbal fluidity, and reduces brain inflammation in Alzheimer’s patients.\(^{[15]}\)

PS has also been cited as a valuable adjunct therapy for Parkinson’s Disease, boosting the amount of dopamine available in the system and improving mood and brain function in Parkinson’s patients.\(^{[16]}\)
May Delay the Onset of Age-Related Cognitive Decline

The body’s internal systems and metabolism become less efficient as we age. The resulting deficiency of many critical hormones and brain chemicals can lead to substantial memory loss and other forms of cognitive impairment, but researchers believe that supplementation with PS and other nutrients can delay the onset of age-related cognition issues.

Research is ongoing, but studies indicate that PS supplementation (modified to contain omega-3 fatty acids) effectively reduced memory problems in non-demented elderly people with memory complaints.[17]

HOW IT WORKS

The body primarily uses PS as a structural component of the double layer of lipids that forms the cellular membrane. In this capacity, PS appears to increase cell fluidity, facilitating the entrance of nutrients and the discharge of waste products. [18]

PS is also involved in neural signaling, or transferring information from one nerve cell to another. In this role, PS is instrumental in initiating blood clotting and in triggering the elimination of dead cells.[19]

In addition, PS appears to modulate the production of specific enzymes, upregulating some and downregulating others. PS decreases the production and release of acetylcholinesterase or AchE, an enzyme that breaks down the neurotransmitter acetylcholine.[20] Decreasing the amount of AchE in the brain effectively increases the amount of immediately available acetylcholine, which is closely associated with all aspects of cognition. The ability to boost acetylcholine levels plays a major role in the compound's nootropic properties and is the basis for the use of PS as an Alzheimer's disease treatment; one of the effects of Alzheimer's is cholinergic hypofunction, which results in acetylcholine deficiency and cognitive decline.

At the same time, PS promotes the production of Na+/K+ stimulated ATPase, an enzyme that pumps sodium out of cells and pumps potassium into them. This action is associated with PS's ability to extend the time that physical activity can go on before a point of exhaustion is reached.[21]
PS also affects mood, motivation, and cognition by decreasing the release of cortisol, the “fight or flight” hormone typically triggered by stress, and increasing levels of both serotonin (“the happiness molecule”) and dopamine (“the motivation molecule”). The ability to modulate the release of these critical compounds is in large part responsible for PS’s ability to lift mood and combat depression. It is also why PS is considered a valuable adjunct treatment for Parkinson’s disease, which is characterized by the loss of dopamine production.\[22][23]

PS has further been shown to prevent the decay of dendritic spines, portions of nerve cells in the hippocampus that are crucial to information storage.\[24] Dendritic spines are known to decay with age, which negatively affects synaptic action and inhibits the transmission of information between cells. Loss of synaptic function directly correlates with cognitive decline, so PS’s action on dendritic spines is an integral part of its ability to restore memory and delay the onset of age-related cognitive decline.

PS may also increase Nerve Growth Factor (NGF) to support brain cell creation, maintenance, and repair,\[25] potentially making it a great supplement for building long-term lasting structural improvements to the brain.

**DOSAGE**

For adults, the standard base dosage of 100 mg taken three times daily for a total of 300 mg is both safe and effective for preventing cognitive decline.

Appropriate dosage may vary depending on age, condition, and the results being sought; lower doses have been effective for some people, and tests involving adolescents and healthy non-elderly people typically involved doses from 200–400 mg.\[26]

As with all supplements, it is good practice to start with the lowest effective dosage and only increase as needed. Women who are pregnant or breastfeeding should consult their physicians before taking PS, as should those who are taking antidepressants, antihistamines, or medications for Alzheimer’s disease or glaucoma.

There have been concerns that PS derived from bovine brain tissue could transmit pathogens, including mad cow disease. Though no instance of such transmission
has been documented, it's safest to take PS synthesized from plants, which is just as effective as bovine-sourced PS and is widely available.

**SIDE EFFECTS**

PS appears to be safe and very well tolerated when taken in doses of 300 mg or less daily.

Reported side effects include insomnia and upset stomach, but both of these effects are associated with higher dosages.[27]

PS has been safely administered to adults for more than six months and to children for up to 4 months with no adverse effects.

**STACKING**

Phosphatidylserine is commonly taken along with other cognitive enhancing supplements in order to maximize its position effects.

**An Example All-Natural Stack**

1x–2x per day

- 100 mg Phosphatidylserine
- 1 g Fish Oil
- 300 mg CDP Choline
- 250 mg Uridine Monophosphate
- 1000 mg Lion's Mane Mushroom

**Phosphatidylserine Stack for Universal Cognitive Enhancement**

For a preformulated nootropic that contains a blend of 11 cognitive enhancing supplements, including phosphatidylserine, designed to optimize a wide array of cognitive functions, we recommend Mind Lab Pro.

Mind Lab Pro's strategy aims at all aspects of memory, mental performance, mood and stress resistance, and brain repair, and maintenance. Their combination of nootropics is designed to affect *brain energy, neurotransmitters, brain blood flow, brain waves, neuroprotection, and regeneration.*
Read our Mind Lab Pro review for a detailed overview.

WHERE TO BUY

Phosphatidylserine supplements are relatively easy to purchase.

We recommend buying phosphatidylserine online from PureNootropics.net, as they are a one-stop shop for cognitive enhancing supplements.

If you prefer doing your shopping on Amazon.com, we recommend sticking to Double Wood Supplements Phosphatidylserine Capsules as a source of high-quality phosphatidylserine.

Alternatively, if you’d like to take a supplement that contains a blend of 11 cognitive enhancing nootropics, including phosphatidylserine, we recommend Mind Lab Pro. Read our Mind Lab Pro review for a detailed overview.

CLOSING THOUGHTS

Phosphatidylserine doesn’t get a lot of publicity; it’s not rare, it’s not flashy, and it certainly doesn’t have a catchy name. Instead, it’s a quietly efficient multitasker that keeps both brain and body working at peak productivity.

It boosts levels of the brain chemicals that can enhance mood, motivation, and cognition, and it has been shown to effectively combat both stress and depression.

It may improve endurance so you can exercise longer and more efficiently, and it can keep your brain working better as you get older. And while it’s doing all that, it also provides structure and protection to every cell in your body.

For anyone who is interested in maximizing their mental and physical capabilities and staying sharp as they age, phosphatidylserine is definitely a nootropic worth considering.

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Picamilon is a Russian nootropic that improves cognitive function and increases mental energy while decreasing feelings of stress and anxiety. It was banned by the FDA in 2015 and can no longer be legally sold as a dietary supplement in the US.

SUMMARY

Picamilon is a unique and controversial drug. Initially developed in the Soviet Union for the treatment of neurological disorders, it was sold legally in the US until 2015, when the USFDA banned it as a dietary ingredient and ruled that all products containing it be removed.[1]

The FDA ruling and its repercussions sparked a major controversy that has triggered accusations against the FDA,[2] spawned a pair of lawsuits,[3][4] and sunk the legality of picamilon into a confusing gray area.

Picamilon, which is still sold by prescription in Russia, is created by synthesizing niacin (vitamin B3) and the inhibitory neurotransmitter GABA. Picamilon crosses the blood-brain barrier and then separates into its separate components; the GABA is believed to reduce anxiety by stimulating the brain’s GABA receptors, while the niacin acts as a vasodilator, improving blood flow and circulation in the brain.

In October, 2015 the Oregon Attorney General filed a lawsuit against US supplement mega-retailer GNC for selling products containing picamilon, claiming that GNC was knowingly violating the law. GNC countered that it had received no direct notice from the FDA on the ban and only learned of the FDA’s ruling on picamilon after the suit was filed. GNC stopped selling products containing picamilon, but the publicity created by the lawsuit sent GNC’s stock prices plunging and stockholders filed a class action suit against the company.

A month after the Oregon lawsuit was filed, Montana Senator Claire McCaskill of the Senate Special Committee on Aging wrote directly to major retailers, asking them to voluntarily remove products containing picamilon. She said she did so because of the FDA’s failure to respond to her repeated requests to take action, and because the agency remained silent on whether products containing picamilon should be recalled or removed from sale.[5]
In December, 2016 the Department of Justice announced that GNC Holdings Inc. agreed to pay $2.25 million and take steps to ensure the legality of its products, but upheld GNC’s claim that it did not sell banned substances knowingly.[6] The shareholders’ lawsuit was dismissed in 2017.[7]

In the meantime, the legality of picamilon is questionable and confusing. Selling picamilon or any product containing it as a dietary supplement is a violation of the FDA’s ruling, which makes it very difficult to find for purchase. At the same time, it is not a scheduled or controlled substance in the US and it is not illegal to possess or use.

**BENEFITS AND EFFECTS**

Picamilon has not been extensively tested, and much of the research that has been done is documented in Russian. But the studies and trials that exist suggest that it offers a variety of cognitive and mood-enhancing benefits.

**Learning and Memory Enhancement**

Picamilon has been shown to make learning faster and easier and to improve both long-term and short-term memory.

In animal studies a single dose elevated subjects to 80% level of learning and subjects achieved maximal level of learning within 3–5 trials. In these tests picamilon far outperformed piracetam, which had no significant effect on either short or long term memory.[8][9]

**Better Concentration, Alertness, and Mental Stamina**

Picamilon has been shown to have significant positive effects on a wide array of cognitive functions, including increasing the ability to focus thought and enhancing overall mental energy or stamina.[10] This effect is believed to be due at least in part to picamilon’s ability to stimulate better flow and circulation of blood in the brain.

**Anti-Anxiety and Mood Stabilization**

Picamilon is most well known for its anti-anxiety and stress reducing effects, which are thought to be due in large part to the GABA it delivers to the brain.
GABA is the body's most important inhibitory neurotransmitter and increasing levels of GABA is known to have calming, relaxing effects.

In animal studies, injections of picamilon normalized behavioral effects of anxiety and depression and effectively increased the number of active GABA-A receptors.[11]

Many users report that picamilon has a welcome anxiolytic effect, but some note that it is subtle rather than powerful. [12]

**HOW IT WORKS**

Picamilon is a combination of two common but essential nutrients, niacin and GABA or gamma-aminobutyric acid. Supplemental GABA cannot cross the blood-brain barrier on its own, but the niacin component of picamilon crosses the blood-brain barrier easily, taking the bonded GABA component with it.

The actual mechanism of action through which picamilon works is both rapid and direct. It is a water-soluble compound that is absorbed readily and reaches maximum bioavailability within an hour of ingestion.

After crossing the blood-brain barrier picamilon is hydrolyzed, or chemically split back into separate components.

The niacin component acts as a vasodilator, increasing blood flow within the brain and improving the absorption of oxygen and other nutrients.

At the same time, the GABA component increases brain levels of this important inhibitory neurotransmitter, which acts as a calmative and anxiolytic by reducing neuronal excitability.[13]

Research suggests that picamilon's cognitive enhancement effects can be attributed in large part to increased brain blood circulation and oxygen absorption.[14] Improved blood flow in the brain also enhances the delivery and absorption of glucose and other nutrients, which may increase alertness and overall brain energy.

Picamilon is also believed to have an antioxidant effect,[15] helping break down and remove toxins in the brain.
**DOSAGE**

The product information sheet provided with Russian-manufactured picamilon provides the following dosage recommendations:[16]

- For anxiety: 40–80 mg daily for 4 to 6 weeks.
- For depression: 40–200 mg daily for up to three months.
- For treatment of cerebrovascular diseases: 60-150 mg daily, taken over an initial treatment course of 1–2 months and followed up with a second course 5 to 6 months later.
- For athletes: 60–80 mg daily for two weeks of the training period.

**STACKING**

Picamilon is effective in many modes: it can be taken alone on a daily basis, cycled with other supplements, or combined with other nootropics.

In a stack with racetam-class nootropics such as piracetam or pramiracetam, picamilon’s cognitive enhancement properties will be potentiated. However, depending on which racetam supplement you combine with picamilon, you could also experience heightened energy or relaxation effects, or even both. In combination with ampakine racetam supplements such as aniracetam and oxiracetam, both of which have stimulant properties, picamilon’s energy-boosting and mood-modulating effects will be enhanced.

Some users say combining picamilon with other supplements such as kava can increase its energy producing properties while using it in combination with relaxant supplements like valerian will make its calming properties stronger.

**SIDE EFFECTS**

Picamilon is typically considered to be safe and well-tolerated, but reported side effects include nausea, headache, dizziness, irritability, agitation, anxiety, and allergic reactions such as rash and itching.[17]
WHERE TO BUY

Picamilon is no longer available for sale in the United States due to recent regulatory changes with the FDA.

For an alternative substance that has a similar effect as picamilon, have a look at phenibut.

CLOSING THOUGHTS

For many years picamilon enjoyed increasing popularity as a useful anxiolytic with nootropic potential, but the picture has changed.

It has never been approved as a drug in the US or Canada and the FDA’s 2015 ruling that it doesn’t qualify as a dietary ingredient means it can’t be sold as a supplement, so picamilon is effectively no longer readily available in North America.

If you’re looking for a nootropic with similar effects, our best advice is to consider an alternative like phenibut.

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Piracetam is the first-ever synthetic smart drug, created as a cognitive enhancer more than 50 years ago. Though it is the first of lab-created brain boosters, it remains one of the most popular and widely used nootropics.

**SUMMARY**

Piracetam is it the first synthetic smart drug ever developed and is the compound that inspired the creation of the word nootropic.

It's one of the most extensively researched nootropics, with thousands of research documents and hundreds of clinical trials posted on PubMed, the National Library of Medicine's public archive.

Piracetam has been a safe, popular, and reliable brain booster for more than 50 years with new uses and potential benefits still being discovered today.

Piracetam was invented in 1964 by Romanian psychologist and chemist Dr. Corneliu E. Giurgea, whose purpose was to synthesize a compound that could safely enhance memory and the ability to learn. He coined the word nootropic – a combination of the Greek words Greek words noos, which means “mind,” and tropein, which means “to bend or turn” – to describe his creation.[1]

Piracetam is a cyclical derivative of the inhibitory neurotransmitter GABA, but the body does not produce piracetam nor does it occur naturally in any plant or food source.[2]

The legal availability of piracetam varies from nation to nation. Though it cannot be legally marketed in the US as a dietary supplement, it can be sold for research purposes and may be legally purchased and possessed without a prescription. In Canada, it cannot be legally sold, but it can be legally imported for personal use. In the UK and Australia, piracetam is available by prescription only, though small amounts for personal use may be legally imported into either country.[3]

In Europe, Russia, South America, and Asia, piracetam is used to treat myoclonus (involuntary muscle twitching) and is legally available by prescription only.
BENEFITS AND EFFECTS

Piracetam’s extensive list of proven benefits and positive effects make it one of the most popular and widely-used nootropics.

Cognitive Enhancement

Piracetam was developed as a cognitive enhancer and it’s definitely best known and most widely used for that purpose. Both anecdotal evidence\(^4\) and clinical trials suggest that piracetam is an effective brain booster, particularly in the areas of memory, concentration, and psychomotor speed.\(^5\)

Studies show that while piracetam’s effects on cognition are measurable among all ages, they’re most significant in populations of older older adults who are experiencing the organic cognitive decline typically associated with normal aging.

By improving blood flow within the brain and boosting the production and function of crucial brain chemicals, piracetam increases synaptic plasticity, or the creation and maintenance of new connection between neurons, which is crucial to learning.

Users report that piracetam can increase energy, improve focus, and enhance both verbal fluency and creativity, particularly when taken in combination with choline.\(^6\)

Studies support these self-reports, showing that piracetam significantly increases verbal learning in both healthy students and students who suffer from dyslexia.\(^7\)

Memory Enhancement

Piracetam has been proven to act as a powerful memory enhancer, particularly when taken in combination with choline.\(^8\)

In the case of elderly subjects (both animal and human), much of piracetam’s memory benefit may be attributed to the fact that it improves blood flow to and within the brain and enhances cellular membrane fluidity.

However, piracetam has been shown to improve memory in subjects of all ages, including children who have received a general anesthetic\(^9\) and even healthy young adults.\(^10\)\(^11\)
**Depression Treatment**

Studies show that piracetam is capable of relieving the symptoms of depression, including impaired coordination, stress and anxiety.\[12\][13]

It also proved to be a valuable adjunct therapy for drug-resistant depression in patients with a variety of psychotic conditions, providing rapid and significant clinical improvement.\[14\]

**Neuroprotective Properties**

Piracetam has been conclusively shown to have powerful neuroprotective properties, effectively protecting the brain against age-related cognitive decline.\[15\]

Piracetam has also been successfully used as a neuroprotectant in stroke patients,\[16\] and in the treatment of cognitive disorders caused by cerebrovascular issues or trauma.\[17\]

**Anticonvulsant Properties**

Piracetam's well-documented anticonvulsant properties make it a valuable adjunct therapy in the treatment of epilepsy and other seizure disorders.\[18\]

**Treatment for a Variety of Disorders**

Ongoing research on piracetam indicates that it's useful and effective in the treatment of a number of physical and mental maladies, including schizophrenia,\[19\] alcoholism\[20\], neuroinflammation,\[21\] and age-related cognitive decline.\[22\]

An innovative 2017 study even looked at the potential positives of piracetam's use as a heroin adulterant. The study authors said drug trafficking organizations in Asia and Europe have been adding piracetam to heroin because it provides a more intense experience and decreases hangover, effects that are attributable to piracetam’s neuroprotective effects. The study investigated piracetam's ability to prevent heroin-induced apoptosis or cellular death as a potential means of helping users kick the habit by reducing withdrawal symptoms.\[23\]

Piracetam is also being studied as a treatment for binge eating disorder or BED, a stress-related disorder characterized by acute episodes of excessive food intake. BED is known to compromise acetylcholine levels and lead to anxiety and cognitive
deficits. A 2018 animal study showed that piracetam regulated acetylcholine levels, alleviated BED-related cognitive deficit, and significantly decreased binge eating behavior and associated body weight.\textsuperscript{[24]}

**HOW IT WORKS**

Though Piracetam's precise mechanisms of action are not fully understood, it is widely believed to work by increasing cerebral blood flow and by acting on various crucial neurotransmitters.

**Improved Cerebral Circulation**

One of the primary means by which piracetam is believed to enhance memory, verbal fluency, focus, and other cognitive factors is by improving blood flow within the brain itself.\textsuperscript{[25]} Cognition is dependent on sufficient cerebral circulation, which delivers the oxygen and crucial nutrients brain cells need to function efficiently.

The exact method by which piracetam increases cerebral circulation is not thoroughly understood, but it is thought to enhance blood flow by promoting the production of red blood cells and at the same time reducing their tendency to adhere to cell walls.

Piracetam has also been shown to have a positive effect on brain metabolism, causing the brain cells to use oxygen and nutrients more rapidly and effectively.\textsuperscript{[26]} This in turn creates a higher demand, which may play a role in triggering increased cerebral circulation.

Research has shown that piracetam also increases the permeability of neurons in the brain, making it easier for nutrients to enter and for waste to be eliminated.\textsuperscript{[27]}

**Modulating Neurotransmitter Production and Activity**

Piracetam appears to have several neurotransmitter-related mechanisms of action within the brain, all of which work together to boost cognition.

**Increases Acetylcholine Activity**

Acetylcholine is one of the most important neurotransmitters and plays a primary role in learning, memory, concentration, and all aspects of cognition.
Piracetam has been observed to increase the density of the acetylcholine receptors in aged rodent brains, which may explain its positive effects on memory.\(^{[28]}\)

It may also upregulate the production of acetylcholine.\(^{[29]}\)

While these actions can enhance cognition, they can quickly deplete the brain's store of choline, which is essential to the neurotransmitter's creation. For this reason choline is frequently recommended as a complimentary supplement for anyone taking piracetam.

**Modulates Glutamate Receptors**

Piracetam is also believed to modulate the brain's receptors of glutamate, an excitatory neurotransmitter that is involved in 90% of all synaptic connections. Glutamate is particularly vital for synaptic plasticity, which is the ability of synapses to strengthen or weaken over time. Synaptic plasticity is crucial to cognitive functions such as learning and memory, and by increasing glutamate receptor sensitivity, piracetam may significantly enhance memory and learning ability.\(^{[30]}\)

**DOSAGE**

The standard piracetam dosage for cognitive enhancement effects for healthy adults is 4800 mg a day, sometimes split into three doses.

A research study evaluating different dosages of piracetam for cognitive enhancement for healthy adults found that a single dose of 4800 mg was most effective.\(^{[31]}\) Another study concluded that 1200 mg of piracetam, taken three times per day, had measurable positive effects on cognition.\(^{[32]}\)

Piracetam is rapidly and extensively absorbed, reaching peak plasma concentration is within 60–90 minutes after dosing. It has a half-life of approximately 5 hours.\(^{[33]}\)

Positive effects may be observable immediately, but it may take up to two weeks of daily supplementation for the full effects to be experienced.

Nootropics users self-report very broad dosage ranges, but it is recommended to start low and build up slowly to see how your unique biology responds to piracetam.
STACKING

Piracetam can be taken on its own but is most effective when combined with other supplements.

**Piracetam and Choline Stack**

Choline supplementation is essential if you are going to take piracetam because of the way it affects acetylcholine in the brain.

When supplementing piracetam, your brain may need more acetylcholine and, without choline supplementation, it's possible to reach depleted levels of acetylcholine in the brain, leading to a foggy feeling and headaches.

Stacking piracetam with choline not only mitigates negative side effects but allows the piracetam to be even more effective than without it.

There are various choline sources, but we recommend alpha GPC or citicoline. When using a high-quality choline source such as those, a good starting point is 1 part choline for 8 parts piracetam.

**1x per day**

- 4800 mg **Piracetam**
- 300 mg **Alpha GPC**

**Piracetam and Aniracetam Stack**

Piracetam is also commonly stacked with other racetams. When combined with other nootropics, the results are usually synergistic.

Aniracetam known for its excellent effect on memory, mood, and creativity, is commonly taken with piracetam.

The commonly recommended ratio is 4:1 of piracetam to aniracetam. Remember, when stacking, the potency of each individual nootropic increases, therefore, it's important to adjust dose sizes accordingly.

**1x–2x per day**

- 2400 mg **Piracetam**
SIDE EFFECTS

Piracetam is generally considered safe and well-tolerated. Adverse effects are typically minor and transitory, and include headache, anxiety, and insomnia.\[^{[34]}\]

Headache is the most widely reported side effect and can often be remedied by stacking with a choline supplement.

Piracetam has been observed in clinical studies including Alzheimer's patients taking 8 grams per day without any reported side effects.

WHERE TO BUY

Piracetam is not typically found in regular stores and instead can be purchased online from specialty vendors.

We recommend that you buy piracetam from PureNootropics.net as they specialize in high-quality nootropics and all their batches tested for purity by 3rd party laboratories.

CLOSING THOUGHTS

Piracetam is the oldest synthetic nootropic and one of the most extensively studied brain boosters available.

Its ability as a cognitive enhancer is thoroughly documented, with literally thousands of related research papers, studies, and clinical trials available to the public.

It's also a proven neuroprotectant that's useful in the treatment of a variety of conditions, and though it's been available for more than 50 years, new uses for it are still being discovered.

It has very low toxicity, few side effects, and is generally well tolerated.
If you’re interested in maximizing your cognitive abilities with a compound that’s been proven both safe and effective, piracetam could be worth your consideration.

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Pramiracetam is a drug that may enhance memory and improve overall cognition. Its unique properties make it a potentially powerful brain performance optimizer on its own or in a nootropic stack.

SUMMARY

Pramiracetam is a synthetic derivative of piracetam, the first laboratory-created nootropic, but is significantly more potent.\(^1\)

Discovered and developed by Parke-Davis in the 1970s, pramiracetam has been extensively studied as a potential treatment for cognitive problems and memory loss associated with Alzheimer's disease and brain injury\(^3\) and as a treatment for a variety of central nervous system disorders.\(^2\)

Pramiracetam has been clinically proven to improve memory in healthy elderly adults with memory loss\(^4\) and enhance overall cognition in young adults with memory problems.\(^5\)

Anecdotal evidence suggests that pramiracetam optimizes overall brain function and increases focus and productivity making it a popular choice among students and others who want to enhance their mental abilities.\(^6\)\(^7\)\(^8\)

Pramiracetam has not been approved for any specific use by the USFDA and is unregulated in the US, where it can be legally purchased, possessed, and used. Pramiracetam may not be legally sold in Canada but can be legally imported into Canada for personal use. It is available by prescription Europe, where it is sold under the brand names Neupramir, Pramistar, and Remen for treatment of dyslexia, ADHD, dementia and memory problems caused by Alzheimer's disease and other neurological conditions.

BENEFITS AND EFFECTS

Pramiracetam is a true nootropic, created specifically to enhance cognition. Its benefits and effects include the following:
Improved Memory

Pramiracetam is a proven memory enhancer, extensively tested over several decades and shown effective in both animal studies[9][10] and clinical trials of young adults with cognitive impairment due to brain injuries.[11]

Pramiracetam improves memory both by stimulating the hippocampus, the part of the brain primarily responsible for the creation of new memories and by acting as a potent anti amnesic that reduces forgetfulness.[12] This dual action makes pramiracetam a very effective memory booster, and many users also report significant improvement in speed of recall, a claim that has been corroborated by animal studies.[13]

Increased Alertness and Expanded Learning Capacity

Pramiracetam's reputation as a general cognitive enhancer that increases alertness and expands learning capacity has made it a popular choice among students seeking a reliable study aid.

Though no human studies on these specific effects have been documented, animal studies indicate that pramiracetam contributes to the mechanisms underlying learning and memory improvement by increasing neuronal type nitric oxide synthase (NOS) activity in the hippocampus.[14] NOS activity is associated with neural development and brain plasticity, both of which are crucial to all aspects of cognition.

Pramiracetam is also known to increase high-affinity choline uptake in the hippocampus, thus indirectly fueling the production of acetylcholine, an important neurotransmitter that is strongly associated with learning and cognition.[15]

Dementia Treatment

Open-label trials in patients with primary degenerative dementia show that Pramiracetam effectively reversed amnesia, significantly enhancing recall and reducing forgetfulness.[16]

In other studies, which measured the effects of pramiracetam and other racetam-class nootropics on patients with mild to moderate dementia, outcomes included observable cognitive benefits including cognitive gains and improved memory; it is
believed that these outcomes are attributable at least in part to the nootropics’ potentiation of existing neurotransmitters.\[17\]

Though pramiracetam has not been approved as an Alzheimer’s treatment in the US, it typically prescribed in Europe for treatment of dementia and other cognitive issues related to Alzheimer’s disease and other neurological disorders.

**Social Fluency**

While there is no documented research on this aspect of pramiracetam, many users report that it makes them more conversationally creative and socially fluent. This may be attributable at least in part to pramiracetam’s reputed emotional blunting effect,\[18\] which is sometimes described as similar to that of Ritalin. This effect may reduce social anxiety and in turn enhance social fluency.

**Neuroprotective Capabilities**

Pramiracetam is known to have considerable neuroprotectant effects, capable of improving cognition in humans who have experienced brain trauma.\[19\]

Studies have also shown it to have a demonstrable neuroprotective effect when used during coronary bypass surgery, as well as in the treatment of cognitive disorders of cerebrovascular origin.\[20\]

**HOW IT WORKS**

Like most nootropics, pramiracetam affects the release of neurotransmitters, brain chemicals that transmit signals from one nerve cell to another. But pramiracetam does it indirectly, in a manner somewhat different from the usual actions of racetam supplements, and it stimulates the brain in other ways as well.

Most racetams work by directly stimulating specific neurotransmitter receptor sites and thus increasing production and release of specific neurotransmitters,\[21\] but pramiracetam doesn’t directly result in changes in neurochemical levels, and it doesn’t appear to have an affinity for any major neurotransmitter. Its primary direct action is a significant increase in high-affinity choline uptake in the hippocampus.\[22\]

Choline is a precursor of acetylcholine, a neurotransmitter profoundly involved in all cognitive processes, including learning speed, memory, and concentration.
By stimulating choline uptake, pramiracetam indirectly modulates the release of acetylcholine and stimulates increased activity in the hippocampus. Because this part of the brain is essential to memory function, the general stimulation that pramiracetam creates can improve both the formation of new memories and the retention of reference or long-term memories. The increased activity in the hippocampus also increases cerebral blood flow, which enhances alertness and improves cognitive abilities in general.

Pramiracetam may have other mechanisms of action as well. Researchers have hypothesized that in addition to its effect on the brain, pramiracetam acts in peripheral sites outside the brain that rely on the adrenal glands.[23]

Animal studies suggest that pramiracetam may also increase or restore brain membrane fluidity, which facilitates cell signaling.[24]

Unlike many other racetam class nootropics, pramiracetam doesn't appear to actively alter either wakefulness or emotional states. This can be explained by pramiracetam's limited influence on the production and release of the neurotransmitters that have the greatest effect on mood and anxiety levels such as serotonin, GABA, and dopamine.[25]

Pramiracetam is fat soluble rather than water soluble, which means it is absorbed into the bloodstream via fatty acids. It reaches peak concentrations and maximum bioavailability relatively quickly, generally within 30 minutes, and it has a moderately long half-life of 4.5-6.5 hours.[26]

**DOSAGE**

The existing human studies used a total daily intake of 1200 mg of adrafinil, divided into two or three doses per day.[27][28]

They did not indicate that this dosage was optimal, but it was found to be both effective and well tolerated and may be a good reference point in determining personal dosage needs.

It is always wise to start with the lowest possible effective dose and adjust amounts as needed.
The fact that pramiracetam is fat rather than water soluble means that mixing the powder with water or any nonfat liquid is difficult; instead of dissolving, it will simply float on the surface. Some users report dissolving their dose of pramiracetam powder with a small amount of oil,[29] which may also enhance absorption and bioavailability.

Many individuals opt to take pramiracetam in capsule form due to its pungent flavor.

**STACKING**

Pramiracetam works well on its own, but one of its most interesting aspects is that it appears to be a powerful potentiator for other nootropics, increasing their effectiveness.

It is a particularly effective potentiator for other racetams, making it a natural addition to most nootropic stacks.

Adding a choline supplement to a pramiracetam stack could have multiple benefits. Not only can it enhance pramiracetam's effects, but it can also prevent headaches, which are the most commonly reported side effect.

Because pramiracetam has such potent effects, it is advisable to use it on its own for a trial period before combining it with other nootropics.

**Pramiracetam and Oxiracetam Stack**

Stacking pramiracetam with an energy enhancer like adrafinil or oxiracetam can intensify the mental alertness and extend it over a longer period.

1x per day

- 300 mg **Pramiracetam**
- 750 mg **Oxiracetam**
- 300 mg **CDP Choline**

**Pramiracetam and Aniracetam Stack**

Stacking pramiracetam with a powerful anti-anxiety agent like aniracetam can give users heightened focus and concentration while improving mood and reducing
feelings of mental strain and anxiety. Some users say this stack promotes social fluency and improves their public performance ability.

### 1x per day

- 300 mg Pramiracetam
- 750 mg Aniracetam
- 300 mg CDP Choline

### SIDE EFFECTS

Pramiracetam is usually well tolerated even at high dosages, and very few adverse side effects have been documented.\(^{[30]}\)

There are infrequent reports of minor and transitory side effects, including headache, gastrointestinal distress, and feelings of nervousness or agitation.\(^{[31]}\)

In many cases, side effects are associated with high dosage and can be avoided by reducing amounts ingested.

Headache associated with choline depletion is a typical side effect of racetam type nootropics and may possibly be prevented by taking pramiracetam in conjunction with supplemental choline.

Pramiracetam is non-addictive, and no significant adverse effects of long-term use have been documented. In fact, there is evidence that this supplement may even promote brain health and to some extent restore function in aging brains.\(^{[32]}\)

### WHERE TO BUY

It isn't usually possible to find pramiracetam in retail stores, but it is available from specialty online stores that carry nootropics. It is important to order from reputable vendors.

We recommend PureNootropics.net for ordering pramiracetam and other nootropics. All their products are tested for purity by 3rd party laboratories.
CLOSING THOUGHTS

Pramiracetam is a unique and powerful nootropic that has been proven to enhance memory,[33] improve overall cognition,[34] and act as a neuroprotectant.[35]

Though Pramiracetam is prescribed as a dementia treatment in Europe, in the US and Canada it is most frequently used off-label as a study aid and general cognition booster.

The pros of pramiracetam include the fact that it’s safe and generally well tolerated, with few reported side effects; it’s powerful, fast acting, and relatively long-lasting, effective on its own and with other compounds in nootropic stacks. Users generally report that it helps them study efficiently and remember clearly, along with increasing alertness. Many users also say it enhances their sense of social fluency.

The cons of pramiracetam include the taste, which is particularly pungent, and the price, which tends to be higher than that of other racetam type nootropics. Though some users report that pramiracetam tends to blunt their emotions,[36] reactions to that effect are mixed; some people regard it as welcome objectivity and relief from social anxiety, while others say it makes them feel dissociated.

Overall, pramiracetam is widely accepted as a safe, effective nootropic. If you're interested in improving your memory, learning speed, and general mental acuity, it may be worth considering.

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PRL-8-53

PRL-8-53 is an experimental compound which many believe to be one of the most effective memory boosters available. Only one human study has been conducted since it was patented 40 years ago, so more research is needed to confirm its safety and effectiveness.

SUMMARY

PRL-8-53 is a synthetic research chemical that has intrigued the nootropic community for decades. There has been only one small human study, funded by the patent holder, on the compound in over 40 years, but the results suggested that a single dose of PRL-8-53 could improve short-term memory by more than 200%.\[1\]

PRL-8-53, a derivative of benzoic acid and phenylmethylamine, was discovered in 1972 by the late neuropharmacologist Dr. Nikolaus Hansl, who patented it three years later.\[2\]

Hansl died in 2011 and development of PRL-8-53 has not been continued, but the compound is available for purchase and has developed a following of users who say it compares favorably to known memory enhancers like noopept.\[3\][4][5]

Preliminary animal studies conducted in the 1970s indicated that PRL-8-53 was both safe and significantly nootropic, boosting avoidance learning in rodents with no adverse effects.\[6\] But the real interest in PRL-8-53 was sparked by a 1978 study on human volunteers, which showed that a single dose could more than double memory as measured by word retention scores.\[7\]

The one-day study involved a group of 47 healthy volunteers between 24 and 86 years of age. While participants who had good baseline word retention scores showed little improvement after taking PLR-8-53, participants who had low initial scores or who were over 30 demonstrated significant improvement following a 5 mg dose of PLR-8-53, in many cases more than doubling their rate of recall. No adverse effects were noted in the human study.

Counterculture interest in PRL-8-53 was fueled by comments from author and longevity specialist Durk Pearson, who was quoted in the underground magazine
“High Frontiers” (which later became “Reality Hackers” and then “Mondo 2000”) as follows: “PRL-8-53 is a terrific memory enhancer. Normally you can memorize about seven or eight digits just by looking at them for a second. PRL-8-53 gives the average person a memory span of about 21 to 22 digits.”[8]

Anecdotal evidence appears to support claims for PRL-8-53’s safety and nootropic capabilities, but it is still considered an experimental drug due to its limited testing.

PRL-8-53 is currently an unscheduled drug and can be legally purchased in the US.

**BENEFITS AND EFFECTS**

**Memory Enhancement**

The one and only human study on PRL-8-53 indicates that it may significantly boost memory, particularly in older people. [9]

The double-blind study used word memorization as a measure, testing the participants’ ability to recall a list of 12 one-syllable words, first to establish a baseline and then again after ingesting PRL-8-53 or a placebo. The subjects were tested on their ability to recall the words 24 hours after hearing them and then again one week later.

The study results indicate that participants who had higher baseline scores showed the least improvement after ingesting PRL-8-53, while subjects who had demonstrated poorer initial memory or who were over 30 years of age showed significant improvement in recall.

Hansl described the effect on the older participants as follows:

“This group was age 30 or older. As might be expected, rote memory did not come as easily to this group as it did to the younger students. The average retention after 24 hours when on placebo was just under three words out of a possible 12. The average retention after one week was two words. However, the same subjects, when learning subsequent to drug administration, retained an average of 5.85 words after 24 hours and 5.25 words after one week. Again the increases were statistically significant. The improvement expressed in percent of placebo performance was 108% for the 24-hour test and 152% for the one-week recall.”[10]
HOW IT WORKS

PRL-8-53’s exact mechanisms of action are not well understood, but it is believed to regulate the brain’s production of and response to several crucial neurotransmitters.

In the only available article on the human study, Hansel said PRL-8-53 potentiates dopamine, partially restricts production of serotonin, and enhances the brain’s response to acetylcholine.\[11\] Though Hansl’s research report on the 1978 human study suggests those actions, it does not detail the mechanism of action.

The fact that older subjects saw the most nootropic benefit from taking the drug supports the concept that dopamine modulation plays a significant role in PRL-8-53’s effects. Upregulating the normal age-related slowdown of dopamine production that is associated with cognitive decline could have a significant positive impact on both learning and memory.

In the same article Hansl also suggested that PRL-8-53 works in part by converting short-term memory to long-term information storage. “PRL-8-53 has been shown to augment responses to noradrenaline in the animal model both peripherally and centrally. Therefore, it seems reasonable to assume that a similar function may be present in humans. Translated into behavioral effects, it implies that this drug is also capable of facilitating the conversion of short-term to long-term memory, causing an increased storage of informational code.”

Hansl also noted that PRL-8-53 enhances the response to acetylcholine, and further said “The drug is not a stimulant, and in the experimental animal toxicity appears only after it is given a dose more than one thousand times as large as the projected human dose. In summary, we now have a potentially useful drug that will boost a specific chemical system in the brain, the cholinergic system, and thereby improve our ability to recall, to retrieve information from a pre-existing information pool.”

DOSAGE

The only human study on PRL-8-53 was based on the ingestion of a single 5 mg dose. There is no data on the effectiveness or potential toxicity of any other dosage in humans.
STACKING

PRL-8-53’s mechanisms of action and potential interactions with other nootropics are unknown, so it's impossible to make informed recommendations on how it could be used in nootropic stacks.

SIDE EFFECTS

No adverse effects from a single 5 mg dose of PRL-8-53 were observed in the human study.

Animal studies suggest that the compound has a high therapeutic threshold, but the evidence is very limited because no comprehensive toxicity studies have been completed.\[12\]

Though no side effects have been documented, PRL-8-53 is a highly experimental research chemical and caution is advised.

WHERE TO BUY

It’s particularly important to purchase experimental drugs like PRL-8-53 from reputable nootropic vendors you can trust to deliver an authentic product.

We recommend NootropicsDepot.com for buying PRL-8-53 for both their reasonable pricing and the fact that all their nootropics are tested by 3rd party laboratories for purity.

CLOSING THOUGHTS

PRL-8-53 is a largely unexplored synthetic nootropic that might have real value as a cognitive enhancer, but at this time there are many more questions than answers about its safety and potential benefits.

Though it triggered strong interest when it was introduced more than 40 years ago, research on its possibilities came to a halt less than a decade after its discovery. Little has been learned about it since the study that sparked such strong interest in its potential as a memory enhancer; its optimal dosage, side effects, toxicity, interactions with other drugs, and even mechanisms of action remain unknown.
There doesn't appear to be any ongoing research on PRL-8-53, but curiosity about its potential continues and it has a small but enthusiastic following who consider it to be one of the best short-term memory boosters available.

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Rhodiola rosea is a Eurasian herb that’s been used as a restorative tonic for centuries. Modern research shows that it’s also a powerful stress-fighting adaptogen that may boost energy, mood, and cognition, and even help protect the brain.

SUMMARY

Rhodiola rosea is a traditional herbal remedy that may help combat the stresses of modern life.

A high-altitude herb native to the Arctic areas of Europe and Asia, rhodiola rosea has a long history of effectiveness as a fatigue-fighting tonic for both mind and body. It was commonly used in Chinese, Scandinavian and Russian traditional medicine as a physical restorative, and in many parts of the world it remains a popular remedy for fatigue and “burn out.”

New research confirms rhodiola’s physical and mental benefits as a powerful adaptogen, a natural substance that helps prevent the negative effects of stress.\(^1\) Studies suggest that it may restore energy, improve mood, and enhance cognition.\(^2\) It’s also believed to be an effective brain protectant that could prevent damage from toxins,\(^3\) and some studies suggest it may even promote longevity.\(^4\)

BENEFITS AND EFFECTS

Reducing Fatigue

Rhodiola is primarily known as an outstanding fatigue fighter, typically reducing or eliminating the negative physical and mental effects of minor physical exhaustion.

It’s most effective in combating the kind of fatigue produced by prolonged or repetitive low-intensity exertion or extended periods of stress; it has been shown to increase the length of effective exercise time, but the data is mixed on whether it substantially improves athletic performance.
While rhodiola may be only minimally effective as a performance enhancer for athletes, it may be useful for students, shift workers, and others who simply need to keep going with everyday life after fatigue sets in.

Rhodiola has been shown to relieve or reduce many physical symptoms of fatigue, including muscle aches and soreness, feelings of tiredness and sleepiness, and headache.[5]

It has also been proven to address many of the cognitive symptoms of fatigue, including moodiness and irritability, impaired judgment and decision-making ability, and diminished capacity for mental work.[6]

There is some evidence that rhodiola was used by the Soviet military to improve the performance of soldiers and athletes, and to help Cosmonauts cope with the stresses of space travel.[7]

**Coping with Stress**

New studies show that rhodiola is an excellent adaptogen that helps the body achieve systemic balance and return to normal function after exposure to stress.[8]

This could be of great benefit to users who frequently deal with intense situations, hectic schedules, and high expectations, but it is equally important for those who cope with the “burnout” effect of long-term repetitive work or prolonged periods of stress.

Clinical trials involving subjects with life stress symptoms showed clinically relevant improvements in all stress symptoms across the board, including low energy, headache, muscular aches and discomfort, depression, moodiness, sleep disorders, and more.[9]

In a double-blind, placebo-controlled pilot study involving students under the stress of exams, rhodiola was shown to substantially enhance general well-being and physical fitness, reduce mental fatigue, and improve scores on a battery of neuro-motoric tests.[10] In addition, the students taking rhodiola scored an average of 8.4% higher on their exams than the students taking a placebo.

Animal studies confirm that rhodiola rosea supplementation effectively lowered levels of cortisol,[11] a stress-related hormone that is associated with impaired
immune function, hypertension, hyperglycemia, and a number of other physical disorders.

**Cognitive Enhancement**

While there is little research specifically investigating rhodiola rosea’s nootropic capabilities, both animal and human studies indicate that rhodiola’s proven ability to reduce fatigue positively influences cognitive abilities, including memory, motivation, and capacity for mental work.

A comprehensive review of research data on a total of 140 compounds isolated from the rhodiola rosea plant indicates that rhodiola’s anti-fatigue effect increases mental performance, particularly enhancing the ability to concentrate in healthy subjects, and reduces burnout in patients with fatigue syndrome.\(^{[12]}\)

These conclusions are borne out by a number of clinical trials, one of which involved a group of healthy physicians on night duty over a period of six weeks. The double-blind placebo-controlled study showed that the participants taking rhodiola outscored those taking placebo on a wide range of complex perceptive functions, including associative thinking, short-term memory, calculation, concentration, and perceptive speed, and overall level of mental fatigue.\(^{[13]}\)

A study of military cadets performing night duties showed that 5 days of supplementation with rhodiola rosea significantly decreased fatigue and increased capacity for mental work.\(^{[14]}\)

**Treatment of Depression**

Rhodiola may have potential as a safe and effective treatment for mild depression.

Clinical trials indicate that twice-daily doses of rhodiola resulted in a significant lessening of depression, insomnia, emotional instability, and other symptoms in patients diagnosed with mild to moderate depression.\(^{[15]}\)

**Neuroprotection and Treatment of Neurodegenerative Diseases**

Several enzymes in rhodiola have potent antioxidant properties.\(^{[16]}\)

Not only do these enzymes protect neurons against oxidative damage and extend cell life, but they also represent a potential treatment for neurodegenerative
disorders like Parkinson’s disease, which is characterized by major oxidative stress and neuronal damage.

Animal studies indicate that rhodiola can halt oxidative damage to the cellular mitochondria and thus has potential as an adjunct treatment for Parkinson’s disease.[17]

**Other Potential Health Benefits**

Though research is ongoing and results remain inconclusive, rhodiola is believed to have potential as a treatment for a wide range of disorders, including high blood pressure,[18] cancer,[19] and longevity.[20]

**HOW IT WORKS**

Rhodiola’s mechanisms of action are still being studied, but it appears to act primarily by modulating a variety of signaling pathways and molecular networks in the brain.

It affects this modulation to a large extent via a number of phytochemical components that act as monoamine oxidase inhibitors,[21] or agents that slow or prevent the enzymatic breakdown of monoamine neurotransmitters serotonin, dopamine, and noradrenaline.

This action effectively increases levels of these important neurotransmitters, which are associated with mood stabilization, pleasure response, motivation, and drive/energy. This, in turn, improves neuronal communication and positively impacts mood, reduces fatigue perception, and enhances cognitive abilities.[22]

Rhodiola is also believed to expedite the intra-brain movement of monoamines and other neurochemical messenger substances, improving processing and reaction time.

Rhodiola is also known to interact with the HPA (Hypothalamic-Pituitary-Adrenal) system, suppressing the production and release of cortisol, a potentially damaging hormone closely associated with stress.

This action in the HPA system is also thought to increase the production and release of beta-endorphins and opiate peptides, which have an anti-depressant action and are associated with stress reduction.[23]
**DOSAGE**

Rhodiola has been tested and found safe and effective in doses ranging from 50–680 mg daily.

There is no single universally accepted dosage recommendation for rhodiola, and effective amounts vary according to several factors, including age, weight, and general health.

Some users find the actions of rhodiola to be very dose-dependent, varying considerably depending on the size of the dose and the time at which it's taken.[24]

Higher doses have not been shown to be toxic but may be ineffective, and many users find that taking rhodiola in a cycle rather than continuously is the best way to prevent tolerance from forming.

It can be taken with or without food but may be most effective when taken on an empty stomach. Rhodiola should be taken early in the day to avoid interruptions in normal sleep patterns.

Rhodiola may interact with other compounds, so if you're taking medications or other supplements use rhodiola carefully and monitor the effects.

Consult your doctor before taking rhodiola if you've been prescribed drugs to lower blood sugar or treat diabetes; medicine for the treatment of high or low blood pressure; CNS depressants or stimulants; anti-depressants, including MAOIs and SSRIs; sedatives; heart regulating drugs; and antibiotics.[25]

There is insufficient data on how rhodiola affects infants and children, so it is advised for use by adults only.

Pregnant or nursing women should not take rhodiola.

**STACKING**

To fully experience rhodiola's cognitive enhancing effects, it does best when stacked with other supplements.
Rhodiola Rosea Stack for Universal Cognitive Enhancement

For a preformulated nootropic that contains a blend of 11 cognitive enhancing supplements, including rhodiola, designed to optimize a wide array of cognitive functions, we recommend Mind Lab Pro.

Mind Lab Pro’s strategy aims at all aspects of memory, mental performance, mood and stress resistance, and brain repair, and maintenance. Their combination of nootropics is designed to affect brain energy, neurotransmitters, brain blood flow, brain waves, neuroprotection, and regeneration.

Read our Mind Lab Pro review for a detailed overview.

SIDE EFFECTS

Rhodiola appears to be generally safe, non-addictive, and well-tolerated by adults taking moderate (50–680 mg daily) doses for a limited period of time, up to 10 weeks.

The most common side effects include mild to moderate dizziness, anxiety, agitation, insomnia, nausea, restlessness, and increased libido.[26]

Side effects tend to be dosage-dependent and are more pronounced when larger doses are taken, so it’s important to take the minimum effective dosage to eliminate or minimize side effects.

WHERE TO BUY

We recommend Double Wood Supplements Rhodiola Rosea Capsules that can be found on Amazon.

Another option is to order directly from a reputable specialty supplement vendor such as PureNootropics.net where you’ll be able to find rhodiola rosea as well as a wide selection of other nootropics.

Alternatively, if you’d like to take a supplement that contains a blend of 11 cognitive enhancing nootropics, including rhodiola, we recommend Mind Lab Pro. Read our Mind Lab Pro review for a detailed overview.
CLOSING THOUGHTS

Rhodiola is a Eurasian herbal treatment used in traditional medicine as a restorative tonic.

Modern research confirms that it’s a potent adaptogen that may boost energy, mood, and cognition, help the body cope with stress, and even protect the brain from oxidative damage.

There are lots of pros associated with rhodiola rosea. It has a long history of practical use; it has been extensively researched and found to be safe and well-tolerated, with very few side effects; it’s affordable and readily available, and clinical trials suggest that it’s an effective energy restorative with some decided nootropic benefits.

There are some cons, as well. Rhodiola can interact negatively with some prescription medications, and it could potentially interfere with normal sleep patterns. It’s not entirely clear whether effects are acute or need some time to develop, and it’s uncertain whether tolerance is a problem when rhodiola is taken for long periods.

Rhodiola’s nootropic properties appear to be closely tied to its ability to increase energy and banish fatigue, so it may not be the answer if you’re looking for a supplement whose only effects are cognition-related. But if you’re looking for a supplement that can help keep you at your best through periods of physical or mental stress, rhodiola may be worth considering.

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SULBUTIAMINE

Sulbutiamine is a synthetic derivative of Vitamin B1, developed to treat chronic fatigue. It's also a potent cholergenic that's known to enhance memory and focus, and it may supercharge mood and motivation and well.

SUMMARY

Sulbutiamine is a synthetic derivative of thiamine (vitamin B1) that was developed to address B1 deficiency and chronic fatigue.

It's also a popular memory-boosting supplement that may enhance mood, motivation, and energy.

Sulbutiamine is a laboratory-created molecule consisting of two thiamine molecules bound together by a sulfur group. This structure makes sulbutiamine more bioavailable than ordinary thiamine and enhances its ability to cross the blood-brain barrier.

The sulbutiamine molecule was initially discovered by Japanese researchers searching for a treatment for beriberi, a nervous disorder caused by thiamine deficiency.

Recent studies indicate that sulbutiamine has potential as a treatment for various types of chronic fatigue. [1][2][3]

Sulbutiamine may also benefit healthy people who don’t suffer from chronic fatigue and aren't lacking in thiamine. It has been shown to boost memory and cognition by promoting increased production of the neurotransmitter acetylcholine, and it may also improve mood and enhance energy by increasing levels of dopamine and glutamate. [4]
BENEFITS AND EFFECTS

Better Memory and Enhanced Cognition

Sulbutiamine effectively addresses cognition problems associated with thiamine deficiency and may also enhance memory and cognition in healthy subjects as well.

Early animal studies confirmed that sulbutiamine improved long-term memory formation\[5\] and enhanced both working and episodic memory,\[6\] enabling subjects to retain memories despite the administration of an amnesia-inducing drug.

A study involving early-stage Alzheimer’s patients showed that those who received sulbutiamine in addition to an Alzheimer’s treatment drug (donepezil) for a total of six months improved in episodic memory, attention, and daily life activities.\[7\]

The memory improvement demonstrated in the studies is likely due to sulbutiamine’s apparent ability to potentiate cholinergic transmissions, mainly in the hippocampus and prefrontal cortex. An increase in available choline upregulates the production of the neurotransmitter acetylcholine, which is strongly associated with all aspects of memory and cognition.

Increase Alertness and Energy Levels

Sulbutiamine has been successfully used to treat a variety of types of fatigue, including post-infection fatigue,\[8\] fatigue associated with multiple sclerosis,\[9\] and even unexplained fatigue.\[10\]

It’s believed that sulbutiamine’s fatigue-fighting capability is related to its ability to upregulate the production of glutamate, the most important excitatory neurotransmitter.\[11\]

Improve Mood and Reduce Anxiety

Many users say that Sulbutiamine has a positive effect on mood and motivation, reducing anxiety and creating a general feeling of well-being.\[12\][13][14] Though this aspect of sulbutiamine has not been extensively studied, research appears to confirm these observations.

In addition to enhancing production of the excitatory neurotransmitter glutamate, sulbutiamine has also been shown to upregulate cortical transmissions of
dopamine, the neurotransmitter associated with pleasure, reward, and emotional responses. Increasing the levels of these critical brain chemicals could be expected to enhance mood and motivation.

An 8-week study on patients with major depressive disorder concluded that while sulbutiamine had no anti-depressant effect, it did reduce fear and anxiety and helped them function better in their social, professional and family lives.

**Treatment for Thiamine Deficiency**

Sulbutiamine is an effective treatment for thiamine deficiency syndrome (beriberi), which can be triggered by a variety of causes ranging from simple dietary insufficiency to aging, illness, and even alcohol dependence.

The symptoms of thiamine deficiency, including fatigue and muscle weakness, cardiovascular issues, and cognitive issues such as brain fog, disorientation, and memory loss, are effectively alleviated or reversed by the administration of sulbutiamine.

**May Treat Psychogenic Erectile Dysfunction**

In a 2005 Russian study involving 20 men with erectile dysfunction caused by psychological rather than physical factors, a 30-day course of treatment of sulbutiamine resulted in substantial improvement in 16 of the participants.

**HOW IT WORKS**

Sulbutiamine is a fat-soluble thiamine derivative that readily crosses the blood-brain barrier. In the brain, it stimulates the formation of thiamine triphosphate, which regulates the synaptic transmission of various neurotransmitters, including acetylcholine, glutamate, and dopamine.

Sulbutiamine is considered a centrally-acting cholinergic agent, or substance that promotes the production of choline. It has been shown to inhibit the enzyme acetylcholinesterase, which breaks down the neurotransmitter acetylcholine, and in so doing it prolongs the action of acetylcholine.

It is also believed to upregulate cortical transmission of both glutamate and dopamine, primarily in the prefrontal cortex and hippocampus.
Sulbutiamine is rapidly absorbed after oral administration, widely distributed throughout the body, and excreted mainly in urine.

Sulbutiamine's onset of action is expected within one day, and the duration of action is about one day. It has a half-life of 5 hours.

**DOSAGE**

Human studies and clinical trials used a daily dosage of up to 600 mg.[20]

Product information on sulbutiamine sold under the brand name Arcalion recommends a daily dosage of 400–600 mg for adults, over a period limited to 4 weeks.[21]

The safety and effectiveness of long-term use of sulbutiamine are unknown.

Tolerance to sulbutiamine is not documented in studies but is anecdotally reported.[22][23]

Product information on Arcalion recommends a maximum length of treatment as just one month. Many users recommend taking sulbutiamine occasionally or in cycles, rather than continuously, to avoid tolerance.

**STACKING**

If you’ve read this far, you may well be wondering what supplements sulbutiamine best stacks with, in order to achieve the maximum positive effects.

**Sulbutiamine + Huperzine A + Choline Stack**

While one’s mileage may vary, a “starter’s stack,” consisting of sulbutiamine, Huperzine A and a choline source such as Alpha GPC may be a good start.

**1–2x per day**

- 200 mg **Sulbutiamine**
- 200 mcg **Huperzine A**
- 300 mg **Alpha GPC**
Huperzine A is a supplement that is derived from the common herb known as Irish Moss. It works by slowing down the decomposition of acetylcholine. By ensuring an optimal level of this vital organic molecule, huperzine A helps to increase your ability to focus and concentrate.

Meanwhile, choline works in concert with Huperzine A and sulbutiamine to ensure maximum memory power and capacity for concentrated attention.

When it comes to pure concentrated choline content, Alpha GPC has the edge, as it contains 40 percent by weight. However, for individuals who are also seeking a supplement to improve motivation, as well as provide relief from anxiety, citicoline may be the better choice, due to its effect on the dopamine receptors in the brain.

**Sulbutiamine + Aniracetam + Choline Stack**

Sulbutiamine also stacks well with the racetam class of nootropics. Among the racetams, stacking sulbutiamine with aniracetam is a common choice due to aniracetam’s similar effects on cognition and mood.

<table>
<thead>
<tr>
<th>1–2x per day</th>
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<tr>
<td>• 200 mg <a href="#">Sulbutiamine</a></td>
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<tr>
<td>• 750 mg <a href="#">Aniracetam</a></td>
</tr>
<tr>
<td>• 300 mg <a href="#">Alpha GPC</a></td>
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**SIDE EFFECTS**

Sulbutiamine is generally considered safe and well tolerated when taken in moderate amounts over a limited period of time.

No toxicity has been recorded.

The only side effects reported are a mild and transient headache, stomach upset, and sleeplessness.[24]

**WHERE TO BUY**

Sulbutiamine is available in two distinct forms: capsules and bulk powder. According to your preference and budget, you may choose either of these two.
Buying the supplement in loose bulk form is most economical, but capsules may be more convenient.

We recommend Double Wood Sulbutiamine from Amazon.

Alternatively, we recommend purchasing sulbutiamine and any other nootropics from PureNootropics.net as they are a reputable source for supplements.

**CLOSING THOUGHTS**

Sulbutiamine is a powerful supplement that has been tried and proven over decades of research and practical use.

It’s known to treat several specific types of fatigue, and both user self-reports and scientific studies confirm that can boost memory, cognition, mood, and motivation. It’s generally accepted as safe and well tolerated, and it’s widely available for purchase.

If you’re looking for a known and respected cholinergic, sulbutiamine is one to consider.

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**SUNIFIRAM**

Sunifiram is an exciting new development in the world of nootropics. It is a derivative of piracetam, that appears to deliver similar memory, learning and mood enhancing benefits in a more powerful package.

**SUMMARY**

Sunifiram, also known as DM-235, is an exciting new development in cognition enhancing supplements. It’s structurally similar to racetam nootropics but about 1,000 times stronger than piracetam.[1]

Research suggests that sunifiram may boost brain power, mood, and energy even when taken in very low doses.

Sunifiram was first synthesized in 2000 by scientists at the University of Firenze in Italy.[2]

Very little research on it is currently available, but preliminary animal studies indicate that it may be a highly effective nootropic as well as a potential treatment for a variety of neurological disorders including Alzheimer’s disease, Parkinson’s disease, and amnesia.[3]

No toxicity threshold or serious side effects have been identified, but to date, there have been no documented studies or clinical trials involving humans. Animal studies indicated no toxicity, even at high doses.[4]

Sunifiram is currently considered an experimental drug, which means it has not been approved for any use in human or veterinary medicine.

It is unregulated in the US where it can be legally purchased, possessed, and used.

**BENEFITS AND EFFECTS**

Sunifiram is so new and untested that little is known about how it actually works or the effects it might have on humans.
Initial animal studies indicate that it may have powerful nootropic benefits, and anecdotal evidence from users suggest it may have other benefits as well.

**Enhances Learning and Memory**

Animal studies show that sunifiram can act as a powerful nootropic, delivering measurable improvements in learning speed, memory retention, and recall.

Research on rats showed that sunifiram not only enhanced performance in learning tasks, it actually reversed chemically-induced amnesia.\[^5\]

In a study on healthy adult rats, sunifiram was able to significantly enhance learning and memory even at very small doses.\[^6\]

Many users say that sunifiram has a positive effect on their ability to learn and understand.\[^7\]

One user said his IQ increased by 15 points over a four-month period during which he took 25 mg of sunifiram four times weekly.\[^8\]

**May Improve Focus, Motivation, and Mental Clarity**

Sunifiram users frequently report that it gives them better focus, mental clarity, and concentration.\[^9\][^10]\[^11\]

Other report that it improves their motivation to both tackle and complete mental tasks.\[^11\]

These effects may be attributable in part to the fact that sunifiram facilitates the release of acetylcholine, the neurotransmitter most closely associated with cognitive ability.

**Mood and Energy Booster**

Many users report that sunifiram gives them more energy and a happier, more positive outlook.\[^12\][^13][^14]\[^15\]

**Visual and Perceptual Enhancement**

Many people say that taking sunifiram gives them a brighter outlook in a very literal sense, making light and shadow more pronounced and colors more vibrant.
For some people, it also makes music more mentally engaging and emotionally meaningful.[16][17]

**Increased sex drive**

A significant percentage of users report that sunifiram has distinct and noticeable aphrodisiac properties, increasing their interest in sex.[18][19]

This effect doesn't appear to be universal and has not been replicated in animal studies.

**HOW IT WORKS**

Though sunifiram is a piracetam derivative, it has a different chemical structure from the racetams and is chemically classed as a piperazine alkaloid.

Its precise mechanisms of action are not entirely understood, but it is known to work by stimulating the activity of glutamate receptors and by increasing the production and release of the "learning neurotransmitter" acetylcholine.

It is believed that sunifiram's primary action is that of an ampakine, which means that after crossing the blood-brain barrier it binds to AMPA-type glutamate receptors in the brain.[20] This stimulates the production of glutamate, a vital neurotransmitter that plays a pivotal role in neural activation.

Glutamate is an excitatory neurotransmitter that is crucial to synaptic plasticity, or the ability of nerve synapses to respond to increases or decreases in activity.

Adequate levels of glutamate are essential to long-term potentiation, or lasting improvement in signal strength between neurons.[21]

Glutamate levels are of particular importance in the hippocampus, the part of the brain that plays the primary role in both spatial navigation and the formation and storage of memory, and it is believed that much of sunifiram's cognitive enhancement ability is ultimately accomplished by improving neural signal strength in this part of the brain.[22]

In addition to enhancing memory formation and recall, ampakines also generally act as mild stimulants that increase alertness and energy but without the
restlessness and other adverse side effects associated with caffeine, methylphenidate (Ritalin) and amphetamines.\[23\]

Sunifiram is also thought to act as a cholinergic, increasing the production and release of the neurotransmitter acetylcholine.

Acetylcholine is closely associated with most aspects of cognition, including memory, learning speed and ability, and fluid intelligence or capacity to solve unique problems without relying on learned behaviors.

Though the exact process by which sunifiram modulates the production of acetylcholine has not been identified, an Italian animal study showed that tests using piperazine compounds such as sunifiram had a cholinergic effect similar to that of piracetam.\[24\]

**DOSAGE**

The only documented sunifiram studies available to date involved animals rather than human subjects, which makes clinically-backed recommendations on dosage impossible.

However, it is known that sunifiram is much more potent than other racetams, with one study showing that sunifiram is about 1000 times more potent than piracetam.\[25\]

It is widely accepted that sunifiram requires a much smaller dose than racetams for effectiveness. Based on a combination of user reports and information gained from animal studies, a dosage of 5-10 mg taken a maximum of three times per day is typically considered both safe and effective.\[26\]

Some users say sunifiram is best taken sublingually for maximum absorption and that it should be cycled rather than taken continuously to prevent tolerance, but there is no scientific documentation on human dosing.

It is always wise to start with the smallest possible effective dosage of a new supplement and gradually increase as needed. That advice is particularly pertinent to sunifiram because is it an experimental drug about which little is known.
STACKING

Sunifiram can be stacked with other nootropics, but users are cautioned to be both careful and conservative about sunifiram dosages in combination with other potent supplements, particularly until they’re sure how they react to sunifiram.

Stacking for enhanced cognitive effects: This is possibly the most common type of sunifiram stack and is best accomplished by pairing sunifiram with one or more of the racetams like piracetam, oxiracetam, or Noopept. Because racetams make a powerful draw on the brain’s choline stores, it is recommended to add a good choline source like CDP choline, Alpha GPC, or centrophenoxine to this type of stack.

Stacking for mood enhancement: Aniracetam is known to stack well with sunifiram for mood enhancement. L-theanine, which enhances production of dopamine, serotonin, and GABA and acts as glutamine reuptake inhibitor, also stacks well with sunifiram. Sulbutiamine, which potentiates cholinergic, dopaminergic, and glutamatergic transmission, is another excellent addition to this type of stack. As always when a racetam supplement is used, a good choline source is important both as a potentiator and to prevent headaches and other unwanted side effects.

SIDE EFFECTS

To date, no serious side effects of sunifiram have been documented, but it’s important to remember that no human studies or clinical trials have been conducted.

Information from animal studies indicates that it is both safe and well tolerated, and even doses many times higher than the effective dosage range have not found to be toxic.[27]

User-reported side effects are both minor and temporary and include an increase in body temperature, increased perspiration and salivation, headache, nasal stuffiness, increased sensitivity to visual and audio stimulation, and insomnia.
WHERE TO BUY

Sunifiram is not widely available and can only be purchased from a select few vendors. We do not have any suppliers to recommend at this time.

CLOSING THOUGHTS

Sunifiram is an exciting development among nootropic supplements. Though there is very little documented research on its effects or mechanisms of action, it appears to have the potential to deliver robust cognitive, mood, perceptual, and energy benefits in an ultra-concentrated and potent form.

Many nootropics users consider it a favorite and regularly add it to their stacks, but it's not a supplement to be taken lightly or consumed carelessly. Animal studies suggest that it's safe, well-tolerated, and non-toxic, but it's important to remember that its effects on humans have not been fully explored.

If you prefer supplements that are well-researched and thoroughly understood, sunifiram isn’t your best choice. But if you’re willing to experiment with a new and to some extent unknown supplement, sunifiram could be worth your consideration.

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URIDINE

Uridine is a little-known but extremely important natural nootropic that may boost the brain, benefit the body, and is absolutely essential to life itself.

SUMMARY

Uridine is a powerful nootropic, a potent neuroprotectant, and a fundamental biological component so important that life can't exist without it.

Uridine is a naturally occurring nucleotide that's present in every organism. Its primary role is as a component of ribonucleic acid or RNA, the messenger molecule that delivers the DNA “blueprint” for protein synthesis to all the cells of the body. Uridine has many functions, but this is undoubtedly the most crucial; without it, RNA can't do its job, the DNA system breaks down, and life ceases. But keeping protein synthesis on track is just a part of what uridine does.

Studies have shown that when uridine is taken together with choline and the omega-3 fatty acid DHA, the combination causes the brain to produce more synapses, or points at which chemical or electrical signals pass. Synapses are the key to brain function, and the more of them there are, the better the brain works.

Uridine has other capabilities, as well. It's known to boost the production and release of crucial neurotransmitters like acetylcholine and dopamine.

Medical research has proven it to be an effective neuroprotectant that can slow brain aging and may prevent Alzheimer’s disease, dementia, and other age-related cognitive dysfunctions.

It is available in some foods, including beets, broccoli, fish, mushrooms, oats, parsley, sugar cane, tomatoes, brewer’s yeast, and beer, which is one of the best sources of dietary uridine. Though it readily crosses the blood-brain barrier, a high percentage of dietary uridine is absorbed in the digestive system and only a relatively small amount makes it to the brain. If you’re interested in its nootropic effect, supplementation is the surest means of realizing uridine’s many benefits.
BENEFITS AND EFFECTS

Though uridine’s most basic function is as one of the components of RNA, the messenger molecule that carries the DNA commands for protein synthesis throughout the body, it offers a host of cognitive and physical benefits as well.

Enhances Memory and Learning Ability

Uridine is a tested and proven cognition booster, working synergistically with other nootropics to enhance memory and learning.

Research indicates that uridine, administered in combination with choline and DHA, has a significant positive impact on brain function. In animal studies, subjects that received uridine demonstrated measurable improvements in both memory and learning.[5]

In addition, both human and animal studies suggest the uridine’s central nervous system action created a notable increase in memory function.[6]

Increases Alertness and Focus

Uridine supplementation has been shown to significantly increase alertness and focus for people who had experienced problems in those areas.

Aging human subjects who received uridine in combination with choline, vinpocetine, and other cognitive enhancers demonstrated improvement in short-term memory, recognition, recall, and executive function.[7]

Improves Mood and Fights Depression and Bipolar Disorder

Many users say uridine is an effective mood lifter,[8][9] a claim supported by ongoing research.

Uridine is known to upregulate the production and release of dopamine,[10] the neurotransmitter sometimes called “the motivation molecule” because it’s largely responsible for feelings of pleasure and reward.

Uridine supplementation has been shown to alleviate depression in both adults and adolescents, and a highly-cited 2011 study that showed uridine
supplementation to be an effective treatment for depression occurring in combination with bi-polar disorder.[11]

Uridine also improves mood by combating the effects of the stress. Uridine is transformed into a phospholipid in the brain, and phospholipids are known to reduce the negative effects of cortisol.[12]

**Can Enhance Cognition by Improving Blood Flow**

Studies show that when administered in conjunction with choline, uridine can effectively improve cognitive deficits in subjects with hypertension or high blood pressure.

Hypertension can have serious negative effects on cerebral vasculature and blood flow, which makes it a major risk for the development of cognitive disorders.

Animal studies in the early 2000s indicate that hypertensive subjects treated with a combination of choline and uridine demonstrated improved selective attention and spatial learning.[13]

**May Help Prevent Alzheimer’s Disease and Other Forms of Dementia**

Uridine holds great promise for the treatment and possibly even prevention of Alzheimer's disease, Parkinson's disease, and other forms of dementia.

An important 2014 study showed that a combination of uridine, DHA, and choline significantly accelerates the formation of the synaptic membrane, addressing the brain deterioration that is one of the primary causes of dementia.[14]

**May Help Prevent General Age-Related Cognitive Decline**

Uridine is known to increase neuroplasticity, or the brain's ability to adapt, remember, and learn by creating and reorganizing synaptic connections.

Diseases of aging typically decrease the number of synapses, or nerve cell junctions at which neurotransmitters transmit information to the brain and body. Administered in conjunction with DHA and choline, uridine has been shown to not only reduce the rate of synaptic decay by enhancing the development of synaptic membrane but to activate the mechanisms by which new synapses are formed.[15]
**Reduces Pain and Inflammation**

Uridine has been proven to have powerful anti-inflammatory effects, making it a valuable adjunct therapy for many conditions ranging from gout and arthritis\(^\text{[16]}\) to pulmonary fibrosis.\(^\text{[17]}\)

Uridine's anti-inflammatory effect has also been proven effective in a study of carpal tunnel patients, in which a treatment consisting of uridine, vitamin B12, and folic acid reduced pain and associated symptoms to the point that over 77% of study participants were able to stop taking analgesics and other anti-inflammatory treatment.\(^\text{[18]}\)

**HOW IT WORKS**

Dietary uridine is synthesized in the liver and secreted as uridine monophosphate in the blood.\(^\text{[19]}\)

Though dietary uridine is available in many foods, it is believed that the uridine acquired through food is mostly absorbed during the digestive process, and supplementation may be necessary to realize many of its effects and benefits, particularly in relation to cognition.

Supplemental uridine is known to readily cross the blood-brain barrier.

In the brain, uridine is converted to CDP choline, which in turn is converted to phosphatidylcholine or PC. Part of the PC becomes a component of the phospholipid layer that encases new synapses.

The more uridine available in the brain, the more CDP choline is produced, and the better new synapses are protected and strengthened.

Uridine also helps increase the formation of new synapses by enhancing the growth of neural cell projections or “branches” known as neurites, which are crucial to neural signaling. Studies show that supplemental uridine significantly increased both the number of neurites per cell and the amount of neurite branching.\(^\text{[20]}\) Enhanced neurite outgrowth and branching is strongly associated with improved cognition.

The phosphatidylcholine that doesn't become part of the phospholipid layer is converted to choline, which the brain uses to manufacture the neurotransmitter
acetylcholine. Often referred to as “the learning neurotransmitter,” acetylcholine is crucial to all forms of cognition.

Uridine is also known to enhance the production and release of dopamine, the neurotransmitter most associated with feelings of pleasure, reward, and motivation. Increased dopamine has a significant positive effect on mood, motivation, and cognition.

The combined actions that uridine triggers in the brain – stimulating new synapse development and encouraging synapse branching, protecting and strengthening existing synapses, providing choline for the creation of acetylcholine, and upregulating the production and release of dopamine – all work together to enhance and improve neuroplasticity, or the brain’s ability to reorganize and regroup in response to learning.

Neuroplasticity is essential to all aspects of cognition, but a loss of neuroplasticity has a particularly pronounced negative effect on memory. Increased neuroplasticity is strongly associated with enhanced cognition in healthy adults, and is a vital part of treating and preventing Alzheimer’s disease and other age-related conditions that erode cognitive abilities.

**DOSAGE**

Uridine is generally considered safe and effective when taken in doses totaling 500–1,000 mg daily, though some advocate doses of up to 2 grams daily to achieve maximum results.

Many consider uridine most effective when taken in conjunction with other supplements, most notably choline, folate, and vitamin B12.

Uridine may be taken with or without food. Women who are pregnant or nursing should consult their doctor before taking uridine.

**SIDE EFFECTS**

There is a low risk of side effects when taking uridine in recommended amounts, though some users have reported minor and transitory side effects including headache, nervousness, nausea, acid stomach, and fatigue.
When taken in very high doses uridine may cause fever and diarrhea, which typically stop when the dosage is lowered.

**STACKING**

**Mr. Happy Stack**

This stack was designed by nootropics user MrHappy on the longecity forums and has since become a very popular stack due to its simplicity and its various benefits.

It was designed for:

- Enhancing learning and memory
- Uplifting and stabilizing mood
- Reducing Stress, OCD, and anxiety
- Improving the brain’s structural health
- Preventing cognitive decline
- Modulating dopamine release
- Improving the quality of sleep and sleeping patterns

**For the first 2 weeks**

- 150-250 mg Uridine Monophosphate (twice per day)
- 1 dose Fish Oil
- 1 dose Multivitamin

**After 2 weeks**

Slowly introduce choline, starting with 50 mg of alpha GPC or CDP choline and increase up to around 300 mg per day.

If you experience depressive symptoms from choline, discontinue choline and consider ALCAR as an alternative.

**WHERE TO BUY**

Uridine supplements are relatively easy to purchase from various online vendors.
We recommend buying uridine capsules online from PureNootropics.net, as they are a one-stop shop for cognitive enhancing supplements.

If you prefer doing your shopping on Amazon.com, we recommend Double Wood Supplements Uridine Capsules as a source of high-quality uridine.

**CLOSING THOUGHTS**

Uridine is one of the unsung heroes of the nootropic world. It's present in every living organism, from people to bacteria, and its primary function as a component of RNA is so critical that life cannot exist without it.

But that's only part of the uridine story.

It’s a team player, working synergistically with choline, DHA, vitamin B12, and other nootropic supplements to improve memory, boost overall cognition, and improve mood.

It plays a number of vital roles in the brain, from protecting existing synapses to encouraging the growth of new ones, and it provides essential choline from which the “learning neurotransmitter” acetylcholine is created. It stimulates the production and release of dopamine, which increases feelings of pleasure and motivation.

It holds real promise for the treatment or even prevention of age-related conditions like Alzheimer's disease and dementia, and it relieves pain, reduces inflammation, improves blood flow, and protects against the effects of hypertension and stress.

Uridine supplements are safe, well tolerated, readily available, and easily affordable.

If you’re interested in making the absolute most of your brain for the rest of your life, uridine is well worth your consideration.

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VINPOCETINE

Vinpocetine is a biosynthetic nootropic that acts as both a brain booster and neuroprotectant. It's known for enhancing cognition, boosting memory, and even improving mood.

SUMMARY

Vinpocetine is a unique supplement that enhances memory, mood, and cognition in a variety of ways. It improves cerebral blood flow and circulation, increases the absorption of oxygen and nutrients, modulates levels of crucial neurotransmitters, and acts as a neuroprotective antioxidant.[1]

Vinpocetine is a semisynthetic derivative of the Periwinkle plant, first isolated in Hungary in 1975. It used throughout Eastern Europe as a prescription treatment for cerebrovascular disorders and age-related memory impairment. It is not regulated as a pharmaceutical in the US, where it is sold as a dietary supplement.

Clinical trials have proven vinpocetine to be an effective vasodilator with direct and specific effects on the brain.[2] It has also been shown to improve cerebral metabolism, and together these factors are the basis of vinpocetine’s nootropic capabilities.

It has also been shown to be a potent anti-inflammatory agent and is believed to have potential as a treatment for Alzheimer's disease, Parkinson's disease, and other age-related neurodegenerative conditions.[3]

Vinpocetine is usually very well tolerated, and it works efficiently both on its own and in combination with other supplements.

Though it's less well-known than many other supplements, it has real potential for both anti-aging and cognitive enhancement and is gaining a positive reputation as a safe and effective nootropic.
**BENEFITS AND EFFECTS**

Vinpocetine's actions as a vasodilator and anti-inflammatory agent make it a powerful and effective nootropic, enhancing cognition by improving the overall health and efficiency of the brain.

**Memory Improvement**

Vinpocetine is widely recognized for its ability to sharpen memory and is prescribed throughout Europe under the name Cavinton or Cavinton Forte as a treatment for memory disorders.\[4\]

A series of studies and clinical trials suggest that vinpocetine can improve memory formation in users with memory impairments\[5\] as well as healthy individuals.\[6\]

User self-reports confirm that many find vinpocetine provides a substantial memory boost.\[7\]

**Better Focus and Concentration**

Studies show that vinpocetine supplementation may enhance focus and concentration, benefits that may be largely attributable to its capability as a limited-action vasodilator.\[8\]

The ability to decrease blood viscosity and increase blood flow and circulation in the brain without affecting blood pressure in the rest of the body is considered central to vinpocetine's nootropic capabilities; increased blood flow and circulation improve the overall health and efficiency of the brain, which in turn creates better focus and concentration and lengthens attention span.\[9\]

**Faster Learning and Better Mental Clarity**

Vinpocetine may enhance mental clarity, reducing or eliminating brain fog and increasing the speed of learning.

Studies on stroke patients suggest vinpocetine may do this by improving the body's ability to convert dietary glucose and lipids to adenosine triphosphate (ATP), the cellular coenzyme that transports chemical energy for metabolism.\[10\]
The presence of ample ATP in the brain is known to reduce feelings of mental fatigue and enhance mental clarity; the more ATP available for use in the brain, the better the intellectual capacity, and the faster learning can take place.\[^{11}\]

Both clinical research and anecdotal reports by users\[^{12}\] confirm that vinpocetine may help banish “brain fog.”

**Mood Enhancement**

Studies suggest that vinpocetine may improve mood, reduce anxiety, and increase perceived well-being.\[^{13}\][\(^{14}\)]

This effect is believed to be due in part to its ability to increase blood flow and circulation, enhance glucose metabolism, and reduce inflammation, but it is also thought that vinpocetine may impact certain neurotransmitters that affect mood.

While vinpocetine does not actively impact the baseline release of neurotransmitters, it may effectively modulate their levels through other means. Animal studies show that supplemental vinpocetine can offset toxins that normally reduce dopamine levels.\[^{15}\]

It is also believed to act as an alpha-adrenergic receptor agonist, stimulating the receptors for adrenaline and norepinephrine, and has shown protective effects against glutaminergic excitotoxins.\[^{16}\]

Though user reports vary on vinpocetine’s effectiveness as a mood lifter, many say it does make them feel happier, less anxious, and more cheerful.\[^{17}\][\(^{18}\)]

**HOW IT WORKS**

Studies indicate that vinpocetine has a number of effects on the brain, the most important of which is enhancing blood circulation and oxygen utilization.

Unlike ephedrine and other general stimulants that act as whole body vasodilators, vinpocetine increases blood flow in the brain without affecting circulation or blood pressure throughout the rest of the body.

Vinpocetine has even been shown to specifically target damaged brain cells and areas of poor circulation within the brain.\[^{19}\]
The increased blood flow and related oxygenation of the brain tissue make the brain more tolerant of ischemia and hypoxia, states of reduced and insufficient oxygen related to stroke and other brain pathologies and injuries.\footnote{20}

The increased blood flow and related oxygenation are believed to have a significant nootropic effect on healthy brains,\footnote{21} and studies suggest it could improve mild cognitive impairment.\footnote{22}

In addition, improved circulation and oxygenation in the brain tends to improve overall brain function with increased production of the coenzyme ATP, which is essential for cerebral metabolism.\footnote{23} By creating a sufficiency of ATP vinpocetine increases the efficient use of glucose and other brain nutrients and thus improves mental clarity.

Vinpocetine has also been shown to interact with sodium, calcium, and potassium ion channels in the brain, modulating levels of various neurotransmitters including noradrenaline, serotonin, and dopamine. By increasing the availability of these neurotransmitters vinpocetine not only affects memory and overall cognition but may improve mood by enhancing the sensation of energy and well-being.

Vinpocetine also acts as an anti-inflammatory agent in the brain, reducing the expression of the proinflammatory and vascular cell adhesion molecules that can lead to neuronal death in conditions such as Alzheimer's and Parkinson's diseases. The anti-inflammatory properties of vinpocetine make it a promising neuroprotectant that could potentially have significant anti-aging benefits.\footnote{24}

**DOSAGE**

The standard daily dosage of vinpocetine is from between 15–60 mg, split into three doses and taken with meals.

For the purpose of cognitive enhancement in healthy individuals, a daily dose of 40 mg of vinpocetine may be ideal.\footnote{25}

Vinpocetine's absorption rate is improved when taken with food.
STACKING

Vinpocetine can be an effective nootropic taken alone, but it is known to work very well in combination with other nootropics and is often found in preformulated supplements. If you prefer to make your own nootropic stack, here are some ideas for a good starting point.

Vinpocetine and Ginkgo Biloba Stack for Long-Term Cognitive Enhancement

Vinpocetine and Ginkgo biloba have mechanisms that work together synergistically. This simple stack is designed to boost cognitive abilities, improve mood, and increase motivation and productivity.

3x per day

- 20 mg Vinpocetine
- 120 mg Ginkgo Biloba (only once per day)

Vinpocetine and Racetam Stack for Studying

This stack will make the most of intensive study time; the piracetam will work with the vinpocetine to improve general cognition, the aniracetam will boost memory, and the Alpha GPC will ensure sufficient high-quality choline for transformation to acetylcholine, the “learning neurotransmitter.”

2x per day

- 1 g Piracetam
- 750 mg Aniracetam
- 20 mg Vinpocetine
- 300 mg Alpha GPC

SIDE EFFECTS

Vinpocetine is generally well tolerated, and no significant adverse side effects have been reported. The most common side effects are headaches and mild gastrointestinal upset, both of which are often relieved by lowering dosage.
Vinpocetine interacts with medications that slow blood clotting, including aspirin, ibuprofen, Warfarin, heparin, naproxen, and others. Taking vinpocetine in combination with those drugs may increase the change of bruising and bleeding and is not recommended.[26]

WHERE TO BUY

Luckily, vinpocetine is readily available for purchase and can be ordered online. We recommend Life Extension Vinpocetine from Amazon. for its beneficial effects on the brain's memory abilities.

Vinpocetine can also be purchased from PureNootropics.net, our recommended source for specialty nootropics.

CLOSING THOUGHTS

Vinpocetine is a lesser-known nootropic, but its unique mechanisms of action, powerful cognitive enhancement capabilities, and promise as a brain protectant are sparking interest throughout the nootropic community.

It's a reliable brain booster on its own, and it works well in combination with other supplements, making it a worthy addition to most stacks.

If you're interested in thinking and feeling your best while keeping your brain working at maximum efficiency, vinpocetine is a supplement worth considering.

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