

CHAMP



OPERATION SUPPLEMENT SAFETY



BRAIN HEALTH **GUIDE**

2021



The buzz about brain-boosting supplements: **What you should know**

Products for brain health have quickly emerged in the dietary supplement marketplace as cognitive health becomes an increasingly important health issue. These products are widely available in stores on and off bases and through the Internet with promises of improved memory, focus, cognitive performance, and energy. Before you consider a dietary supplement to boost your brain health or optimize your cognitive performance, keep these questions in mind: Do the product claims seem questionable? Does it have multiple ingredients or just one? And are the ingredients safe?

To help you answer these questions, Operation Supplement Safety (OPSS) put together this *Brain Health Guide*. We hope you find it a useful resource to help you become a more informed consumer. The Guide contains evidence-based articles on some ingredients commonly found in dietary supplement products marketed for brain health.

The mission of OPSS is to provide the best evidence-based information about dietary supplements to Military Service Members, their families, healthcare providers, and leaders to help achieve human performance optimization.

Sincerely,

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Ashwaghandha

Bacopa monnieri

Ginkgo biloba

Ginseng

Huperzine A

Nootropics

Omega-3 fatty acids

Phenibut

Rhodiola rosea

Vinpocetine



BRAIN HEALTH GUIDE

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OPERATION SUPPLEMENT SAFETY

OPSS is a program under the Consortium for Health and Military Performance, a DoD Center of Excellence at the Uniformed Services University of the Health Sciences

Nootropics: Drugs vs dietary supplements for Brain Health

Nootropics—also referred to as “cognitive enhancers,” “smart drugs,” “memory enhancers,” or “brain boosters”—are substances intended to improve mental performance. The term “nootropic” originally referred to a chemical that met very specific criteria: enhances memory, helps brain function, protects the brain, and is relatively safe. No evidence exists to show that any dietary supplement product can satisfy all (or any) of these criteria. Today, however, the term is used more loosely and often refers to any naturally-occurring or synthetic (that is, created in a lab) substance that might act as a “cognitive enhancer.”

Nootropic products fall into two general categories: dietary supplements and drugs (prescription and over-the-counter). They contain substances (foods, herbs, botanicals, dietary ingredients, pharmaceuticals) marketed to improve mental performance or functions—including memory, focus, motivation, concentration, and attention—and for overall brain health.

The problem with nootropic dietary supplements is that they might contain **drugs** (approved, unapproved, or both) or potential **“new dietary ingredients.”**

Nootropic dietary supplements sometimes contain drugs and other ingredients that have not gone through the appropriate regulatory framework. Many lack sufficient reliable evidence to show they are either safe or effective.

Some dietary supplements marketed as nootropics contain ingredients prohibited for use by Military Service Members.

Nootropic dietary supplements

Dietary supplements for brain health marketed as **“natural”** or **“herbal”** nootropics might include ingredients such as ashwagandha, *Bacopa monnieri*, *Ginkgo biloba*, ginseng, huperzine A, omega-3 fatty acids, rhodiola, and valerian. Even some vitamins and minerals are marketed as nootropics, such as the B-complex vitamins and magnesium. Although such ingredients seem to be safe when taken in low doses and for the short term, so far the evidence to show whether any non-drug substance can improve cognitive performance is insufficient.

Some ingredients found in nootropic supplements—higenamine, sulbutiamine, and hordenine—are on [FDA’s Dietary Supplement Ingredient Advisory List](#) based on a preliminary evaluation that the ingredient “does not appear to be lawfully included in products marketed as dietary supplements.”

Some nootropic dietary supplement products contain multiple or mixtures of ingredients, with no evidence of how these ingredients might interact. Many contain **proprietary blends** that

leave the consumer unaware of how much of each individual ingredient is in a product. And remember: More is not always better.

Nootropic drugs

Prescription nootropic drugs are **FDA-approved for specific medical purposes**, such as to treat attention deficit hyperactivity disorder (ADHD) or Alzheimer’s disease. For example, modafinil, methylphenidate, and various drugs for Alzheimer’s would be classified as nootropics. These drugs have been proven to be safe and are intended only for use under medical supervision.

Over-the-counter drugs, like prescription drugs, must be approved by FDA, and several could be considered nootropics. For example, the product NoDoz® is marketed to maintain alertness.

Unapproved drugs are drugs that have not yet been approved by FDA, so we don’t know whether they are safe or effective. Ingesting these substances, either knowingly or unknowingly, poses a risk to any individual. Currently, racetam drugs are not approved by FDA for use in the U.S. as drugs or dietary supplement ingredients, although some are approved drugs (currently or in the past) in other countries. Vinpocetine, sulbutiamine, phenibut, and huperzine A have been approved as drugs in countries outside the U.S., so they are additional examples of unapproved drugs often found in nootropic dietary supplements.

Nootropic dietary supplements sometimes contain drugs

FDA regulates dietary supplements differently than prescription drugs. Dietary supplements do not require FDA approval prior to marketing, so dietary supplement products can be **mis-branded or adulterated**. FDA also has found some nootropic dietary supplements to be tainted with drugs or other ingredients that have not gone through the FDA regulatory pathway. Sometimes these ingredients are “hidden”—that is, they aren’t disclosed on the product label.

Some nootropic dietary supplements are marketed with questionable claims. For example, some nootropic and cognitive-enhancing dietary supplement products claim they can enhance mental performance and make your brain healthier. By law, however, a dietary supplement cannot claim to treat or prevent any medical condition. When a dietary supplement product makes such claims, according to FDA, the ingredients are considered “new drugs,” and the product cannot be sold without going through FDA’s pre-market approval process required for drugs.

Many consumers believe dietary supplement products are “natural”—and therefore safe—but this isn’t necessarily the case, especially when they contain drugs.



Ingredients to watch out for

Some ingredients in nootropics marketed as dietary supplements have not gone through the FDA regulatory pathway to actually be used in dietary supplements. Some of these could actually be drugs. Examples of some ingredients to watch out for and reasons for concern are noted below.

Ingredients on the [OPSS list of DoD-prohibited ingredients](#)

- DMHA (octodrine)*
- DMAA*
- Phenibut
- Racetam drugs: piracetam, aniracetam, oxiracetam, omberacetam (Noopept), phenylpiracetam* (Phenotropil), pramiracetam (Nootropil), etc.
- Vinpocetine

Other questionable ingredients (“natural” and “herbal” ingredients, prescription drugs, and unapproved drugs)

- Adrafinil* (Olmifon, Noofon)
- B-PEA (b-phenylethylamine or beta-phenethylamine)*
- Halostachine (N-methyl phenylethanolamine)
- Higenamine*
- Hordenine
- Huperzine A
- Methylphenidate* (Ritalin, Concerta)
- Modafinil* (Provigil)
- Sulbutiamine

* On the [World Anti-Doping Agency Prohibited List](#) 



Ashwagandha

Ashwagandha (*Withania somnifera*) is a small shrub that grows in parts of India, the Middle East, and Africa. It is used as an ingredient in many different kinds of dietary supplements.

There is not yet enough reliable scientific evidence to support the use of ashwagandha for any specific purpose.

What is ashwagandha in dietary supplements used for?

Ashwagandha has a history of use going back more than 3,000 years in Ayurvedic (traditional Indian) medicine. Today it is commonly used in dietary supplements for conditions related to both physical and mental health, such as arthritis, diabetes, infertility, fatigue, anxiety, stress, and cognitive function. It is also promoted as an “adaptogen,” which means it is used to help the body adapt to stress. Topically, it is used for such things as backaches or muscle soreness.

Is ashwagandha safe or effective?

Ashwagandha has been investigated for so many purposes that it is difficult to determine its effectiveness for any specific use, but it appears to be relatively safe for oral use (as in dietary supplements) for up to about 12 weeks. The amounts (from as little as 30 mg to more than a gram daily) and the duration of use appear to depend on the intended effect.

Research continues into the various potential uses of ashwagandha and its extracts in medicine, dietary supplements, and even foods. This includes investigation into the use of withaferin A (a compound present in ashwagandha) for the treatment and prevention of cancer. However, most of the studies to date are relatively small, with inconsistent results, so more research is needed to determine its safety and effectiveness for various specific uses.

Adverse health effects have been reported mostly by those taking large doses and appear to be minor—including gastrointestinal upset, diarrhea, and vomiting—with **one important exception**: Ashwagandha can induce abortion, so **pregnant women should not take it!**

Is ashwagandha okay for Military Service Members to take?

Ashwagandha is not prohibited for use by Military Service Members, and it should not produce a positive result on a routine military drug screening test. [↪](#)

Bacopa monnieri

Bacopa monnieri (“bacopa” for short) is a well-known herb in India, where it is commonly referred to as “brahmi,” used in Ayurvedic medicine as a “brain tonic” to improve cognitive function, including memory and learning, as well as to treat health conditions such as anxiety and epilepsy.

The evidence is inconclusive as to whether Bacopa can help Military Service Members reach their health goals for cognitive performance and brain health.

Bacopa is frequently listed as an ingredient in dietary supplement products marketed to improve or maintain memory, learning retention, concentration, focus, and overall health in terms of cognitive function and performance.

Can bacopa boost brain health and performance?

Some of the latest research has shown improvements for brain health, attention, and memory-related performance tasks after the use of 300–320 mg per day of bacopa, as soon as one hour after taking the dietary supplement and for as long as 12 weeks of taking the dietary supplement. Some other of the latest research, however, has shown no improvements, especially when participants took higher amounts (450–640 mg per day). A variety of products and serving sizes of bacopa have been used in research and in different types of cognitive performance tests to see if participants reached their health goals. Overall, the research consists of small studies, which makes it hard to say whether it works for brain health and enhanced performance.

Can bacopa negatively affect my health and performance?

A few studies have reported adverse events with the use of 300 mg per day of bacopa over a 12-week duration. Side effects include dry mouth, nausea, diarrhea, and fatigue. The safety of long-term use, and of both short-term and long-term use of higher amounts per day, of bacopa is unknown.

The bottom line

There isn’t enough scientific evidence to know whether the use of bacopa as a dietary supplement can improve cognitive performance for Military Service Members looking for a boost in brain health. Higher serving sizes do not show any benefit over lower serving sizes in the short term. The safety of both short-term and long-term use is uncertain.

The information here is for use of bacopa as a single dietary supplement ingredient. No evidence is available for the use of bacopa combined with other dietary supplement ingredients. With multiple-ingredient supplement products, it is nearly impossible to know which substance might cause any benefit or adverse event. ∞

Ginkgo biloba

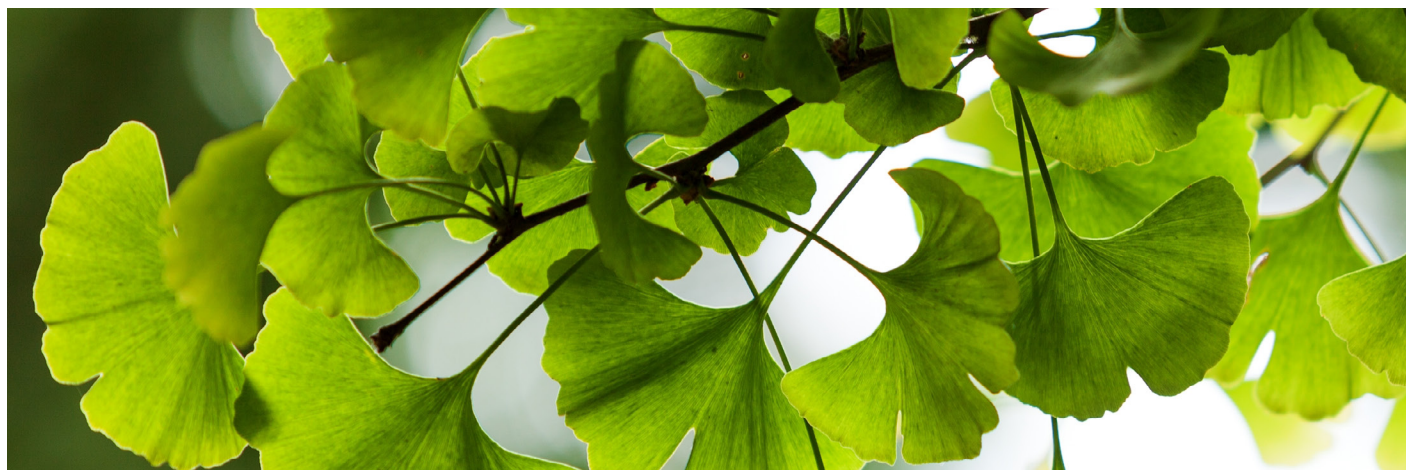
Ginkgo biloba is one of the oldest living species of tree. Extracts from its leaves (referred to here as “ginkgo”) are used in and as dietary supplements associated with a variety of health claims. Unfortunately, the most common claims are for treating problems such as cognitive decline, memory loss, mood disturbances (for example, depression and anxiety), and difficulties with focus and concentration. By definition, dietary supplements are not intended to treat “problems.” Regardless, ginkgo is one of the most popular dietary supplement ingredients on the market today. You might see it labeled on brain health products as “Ginkgo biloba extract (GBE),” “Egb761,” or “GK 501.”

There isn't enough solid research to confirm whether ginkgo can help optimize performance and boost brain health.

Does ginkgo work to boost brain health and performance?

Several studies have investigated whether ginkgo as a dietary supplement can boost brain health and enhance cognitive performance in healthy adults (ages 18–60 years) who don't have any signs of cognitive impairment. Some of the latest research has shown enhanced performance on some tasks related to attention, memory, and problem solving, in as little as one hour—and up to 6 hours—after taking one capsule of 120–360 mg ginkgo. However, the evidence is inconsistent in terms of the specific tasks tested as well as the serving sizes used in research. As a result, it's hard to say if and how much benefit you might gain. Some other research has actually shown a decline in performance of certain tasks immediately after taking 120 mg ginkgo.

Only a few studies have examined the use of ginkgo longer than once a day for up to 12 weeks. The latest research has shown that taking 120 mg ginkgo per day for 12 weeks does not seem to result in better cognitive performance than a placebo.



Is ginkgo safe as a dietary supplement?


Ginkgo appears to be safe for most people when taken as a dietary supplement in amounts of 120–360 mg per day for up to 12 weeks and possibly longer. Possible minor side effects include headache and nausea. Some case reports of unexplained bleeding, moodiness, and irregular heartbeat exist. Ginkgo might be unsafe for people prone to bleeding or for pregnant women close to term due to the possibility of excess bleeding. It also might not be safe to take with certain medications. If you're considering ginkgo, always consult a physician first, and look for a dietary supplement product with evidence of third-party certification or verification, as there have been reports of ginkgo products adulterated with contaminants.

There is no reliable evidence that taking more than 360 mg per day of ginkgo is safe. In addition, ginkgo should never be taken by mouth in the raw form, as it can be poisonous.

Can ginkgo produce a positive result on a military drug screening test?

As a dietary supplement, ginkgo is not prohibited for use by Military Service Members and should not produce a positive result on a routine military drug screening test.

The bottom line about ginkgo

The evidence presented here is for the single ingredient Ginkgo biloba extract and does not represent the evidence for ginkgo when combined with other ingredients. With multiple-ingredient supplements, it is nearly impossible to know which substance might cause any effect, either benefit or harm. In addition, the evidence presented is only for people with no signs of cognitive decline. And remember: Always look for a seal as evidence of **third-party certification or verification**, and talk with a healthcare provider before you use ginkgo. 

For more information on how supplements impact your body and mind, check out

OPSS.org

—the military's source for all things dietary supplements



Ginseng

Ginseng is a plant, and its root is widely used in dietary supplements, teas, and energy drinks. Many types of ginseng exist, but the two most popular are *Panax ginseng* (Korean ginseng) and *Panax quinquefolius* (American ginseng). Both contain ginsenosides, considered to be the active constituents of ginseng, but they differ mostly in where they are grown. *Panax quinquefolius* is grown mostly in North America, while *Panax ginseng* is grown in Korea and northeast China. Both are similarly marketed as dietary supplements to promote brain health and enhance cognitive performance.

Panax ginseng and Panax quinquefolius seem to have similar short-term effects and might help Military Service Members boost brain health when used in small amounts. The effects of long-term use are questionable for both.

What do we know about *Panax ginseng* (Korean ginseng)?

Some of the latest research has shown improvements in brain health, specifically as related to performance on attention and memory-related tasks up to 6 hours after a single use of 200-400 mg of *Panax ginseng*. No such effects have been reported with amounts greater than 400 mg.

The research into any long-term benefit for healthy adults taking *Panax ginseng* to boost brain health and performance is minimal. Small studies have shown improvements in a few attention-related tasks for those who consume 200 mg *Panax ginseng* daily, up to 12 weeks. No studies have been conducted for longer than 12 weeks.

What do we know about *Panax quinquefolius* (American ginseng)?

Less research has been done on *Panax quinquefolius*. However, the latest research has shown effects similar to those of *Panax ginseng* after a single use of 100-400 mg *Panax quinquefolius*. There have been no long-term studies on the effects of *Panax quinquefolius* on brain health.

Can either type help boost brain health?

Some research shows that *Panax ginseng* and *Panax quinquefolius* might help boost brain health over the short-term when taken in small amounts. However, larger studies are needed to confirm the benefits of taking either type to help boost brain health and optimize cognitive performance in healthy individuals.



How is ginseng listed on labels of supplements, teas, and energy drinks?

Panax ginseng and *Panax quinquefolius* are the two most common types of ginseng in dietary supplement products marketed for brain health. They should not be confused with other types, such as Siberian ginseng (from the root of *Eleutherococcus senticosus*), which does not contain ginsenosides. However, the way ginseng is listed on product labels can be confusing. A standardized extract of *Panax ginseng* is often labeled “G115,” which means certain processes were carried out to ensure the quality of the ingredient (including the presence of 4% ginsenosides). *Panax quinquefolius* is often shown on labels as “American ginseng.” Teas and energy drinks also commonly contain ginseng listed as “American ginseng” or *Panax ginseng*, but other times you will just see “ginseng” or “ginseng root” or “ginseng extract.” In this case you can’t tell what the ingredient is. In dietary supplements, ginseng is sometimes combined with other ingredients in a proprietary blend, in which case you also can’t tell how much is included.

Are these types of ginseng safe for a Military Service Member?

Panax ginseng and *Panax quinquefolius* are likely safe for adults when used short term and in small amounts (less than 400 mg per day). Common minor side effects with both types include insomnia, headache, and stomach upset. Long-term use (continuous use past 6 months) could be unsafe. Severe effects reported seem to be more common with combination products where it is challenging to know which of the ingredients could be responsible for the effects. Both types of ginseng might be unsafe for women who are pregnant or breast-feeding, as well as for infants and children.

If you can’t tell what type of ginseng, or how much ginseng, is in a product, then you don’t know if it’s safe or not!

The U.S. Food and Drug Administration (FDA) has issued warning letters to some manufacturers of “ginseng” dietary supplements for making false health claims. In addition, testing of some products with ginseng has shown that these products do not always contain what’s on the product label, which means that ginseng dietary supplements might be misbranded or adulterated. Ginseng could intensify the effects of stimulants such as caffeine and could be dangerous when combined with certain medications. It’s important to consult a pharmacist or doctor before you take any ginseng products.

Can ginseng produce a positive result on a military drug-screening test?

The dietary supplement ingredient ginseng, of any type, is not prohibited for use by Military Service Members and should not register on a routine military drug-screening test.

The evidence presented in this article is only for healthy individuals using *Panax ginseng* or *Panax quinquefolius* to boost brain health and cognitive performance. It does not represent the evidence for ginseng combined with other ingredients or for those experiencing cognitive decline. ↻

Huperzine A

Huperzine A is a chemical compound that can be isolated from the plant *Huperzia serrata* (Chinese club moss), a traditional Chinese remedy used for contusions, strains, swelling, and schizophrenia. It can also be made in a laboratory. Huperzine A is commonly listed as “*Huperzia serrata* extract,” “HupA,” or “Chinese club moss” on dietary supplement product labels. It is often marketed for brain health and cognitive performance, with claims of enhanced brain power, memory, alertness, attention, concentration, and focus.

No reliable scientific evidence supports the use of huperzine A to enhance cognitive performance, and its overall safety is not yet understood.

Is it an approved dietary supplement ingredient?

Although it is marketed in the U.S. as a dietary supplement ingredient, huperzine A is an approved drug in some other countries. For example, huperzine A is available in most hospitals in China and is used to “treat” Alzheimer’s disease. In the U.S., however, it is unclear whether huperzine A can be legally marketed as a dietary supplement.

Is huperzine A safe or effective as a dietary supplement?

Preliminary evidence suggests huperzine might have beneficial effects on cognitive function among Alzheimer’s disease patients, but more research is needed to establish this conclusively. Some companies have been marketing “supplements” containing huperzine A with illegal claims that their products can “treat” Alzheimer’s. Currently, the Alzheimer’s Association recommends not taking huperzine A, especially with prescription drugs, because the combination could increase the risk of serious side effects. Commonly reported adverse effects include decreased heart rate, nausea, vomiting, diarrhea, dizziness, sweating, blurred vision, and insomnia. Overall, safety data are lacking and long-term use is not well understood.

To date, no studies have examined the safety or effectiveness of huperzine A for cognitive performance in otherwise healthy individuals.

Can Military Service Members use huperzine A?

Huperzine A is not prohibited for use by DoD members, and it will not cause a positive result on a routine military drug test. However, given the limited evidence of its safety, we advise caution with products that contain this ingredient.

In addition, some dietary supplement products containing huperzine A include substances prohibited for use. Consuming such ingredients could put your health, career, or both at risk. In some cases, these ingredients might not be listed on a product’s label, so you could consume prohibited ingredients unknowingly. Using products that have been **third-party certified** can help you avoid this possibility. [↪](#)

Omega-3 fatty acids

Omega-3 fatty acids are important for brain health. They help build brain cells and maintain brain function throughout your life. Two important fatty acids—eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA)—are considered essential nutrients because your body can't make them on its own. They are found mostly in fish (such as salmon, trout, herring, tuna, and mackerel). But if you don't like fish, some other foods—such as eggs, walnuts, flaxseeds, and brussels sprouts—contain alpha-linolenic acid (ALA), a third type of fatty acid that converts to EPA and DHA in the body in limited amounts. You can also get omega-3 fatty acids through dietary supplements (such as fish oil) marketed for heart and brain health. Today, fish-oil supplements are one of the most popular dietary supplements on the market.

Omega-3 fatty acids from food can help overall brain health, but it's unclear whether omega-3 dietary supplements can help boost brain health and optimize cognitive performance.

The American Heart Association and the American Psychiatric Association recommend at least 2 servings of fish per week (an average daily intake of 450–500 mg EPA and DHA combined) for overall heart and mental health. However, most people don't consume enough of the foods they need to get the recommended amount of omega-3.



In 1997, FDA announced that up to 3 grams per day of EPA + DHA from fish-oil dietary supplements is “generally recognized as safe.” FDA also recommends that healthy people who wish to support their diet not exceed 2 grams per day through dietary supplements.

Can omega-3 dietary supplements boost brain health?

Some of the latest research on omega-3 dietary supplements has looked at their effects on brain health and enhanced cognitive performance. Some of this research shows enhanced performance on tasks related to attention and memory after taking 2 to 2.5 grams per day of fish-oil dietary supplements (at various ratios of EPA and DHA) over the course of 3 to 6 months. Other research shows no benefit at all. Some of this research lacks crucial information, which makes it difficult to conclude that omega-3 dietary supplements will help you enhance your performance.

Can omega-3 dietary supplements negatively affect performance?

Minor side effects include possible burping, fishy aftertaste, upset stomach, headache, or flu-like symptoms. According to some reports, extremely high amounts (more than 20 grams per day), taken over a long time, might reduce immune function but also might lead to increased risk of bleeding and potential stroke when used in combination with certain medications.

The bottom line about omega-3

The information presented above is only for people with no signs of cognitive decline. For a look into the latest research on omega-3 dietary supplements and brain injury, please read the [OPSS article](#) on that topic. As a Military Service Member, look first to foods for the omega-3 fatty acids you need. ↻




Phenibut

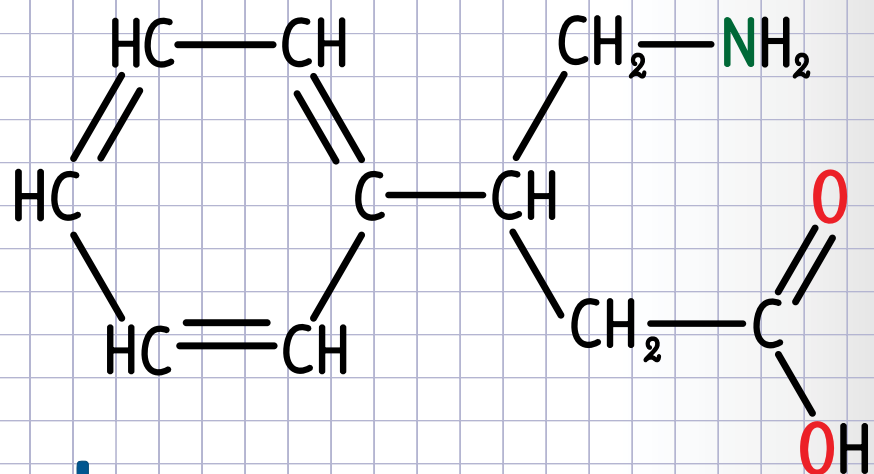
Phenibut—also “ β -phenyl- γ -aminobutyric acid” or “4-amino-3-phenylbutyric acid HCl”—is found as an ingredient in some dietary supplements. These supplements are sold for a variety of uses, including sleep, stress reduction, and nootropic (“smart pill”) effects. Phenibut is a drug developed in Russia and Latvia, where it’s used as to treat anxiety, alcohol withdrawal, insomnia, and other health conditions. It’s similar to the FDA-approved drug baclofen.

There are reports of adverse health effects associated with phenibut use, and some evidence suggests that continued use can lead to dependence and increased tolerance, which means an increasingly higher dose is needed for the same effect. Withdrawal symptoms include visual and auditory hallucinations, muscle pain and twitching, heart arrhythmia (tachycardia), nausea, vomiting, insomnia, sensitivity to sound and light, and separation from reality.

Phenibut is prohibited for use by Military Service Members.

Phenibut in dietary supplements

FDA announced that phenibut “is a substance that does not meet the statutory definition of a dietary ingredient.” As a result, phenibut is on the **OPSS list of DoD-prohibited substances**. Phenibut is a synthetic substance—it’s made in a laboratory and doesn’t occur in nature—which means it doesn’t fit FDA’s definition of an acceptable dietary supplement ingredient. 



Phenibut

Rhodiola rosea

Rhodiola rosea (referred to here as “rhodiola”) is a plant that grows at high altitudes in the arctic areas of Europe and Asia. It has been categorized by some researchers as an “adaptogen,” meaning it supposedly helps the body’s natural ability to “adapt to” stress. It has been used for centuries to enhance physical and mental performance and fight stress. Rhodiola is a common dietary supplement ingredient in products with claims to boost brain health, increase energy, reduce fatigue and anxiety, and improve athletic performance and mental clarity.

Not enough evidence exists to show whether rhodiola can help Military Service Members boost brain health and optimize performance.

Can rhodiola boost brain health?

Some of the latest research with animals shows that rhodiola can improve learning and memory function. Research into boosting brain health among healthy adults is scant. However, some research has shown improvements in general fatigue under stressful conditions and improvements in performance related to attention and short-term memory tasks after taking the dietary supplement rhodiola (up to 600 mg per day) for as short as one day and up to 4 weeks. No studies have shown any benefit above this amount, and smaller amounts (up to 370 mg per day) might be more beneficial than larger amounts.

Overall, studies with rhodiola suffer from poor methods and small sample sizes, so the strength of the evidence is very low. As a result, there isn’t enough reliable evidence to determine if and how much you might benefit from taking rhodiola as a dietary supplement to boost brain health.

Is it safe for a Military Service Member to take as a dietary supplement?

Side effects appear to be minimal but could include dizziness, headache, dry mouth, or (the opposite) excess saliva. Studies have reported rhodiola to be safe when taken up to 12 weeks in small amounts (up to 600 mg), but the safety of long-term use is unknown, so discuss any noticeable side effects with a physician. Avoid the use of rhodiola if you are pregnant or nursing, or if you’re considering its use for a child, until further research on its safety is available.

A surge in the global demand for ‘ has put a strain on the harvesting areas and supply of this ingredient for use in dietary supplement products. Other species of rhodiola exist, but they don’t have the same properties as *Rhodolia rosea*. These other species are often mixed with or used in place of *Rhodolia rosea*, which raises concerns about the quality and safety of products containing “rhodiola.” Such products could contain other ingredients disguised on product labels as *Rhodolia rosea*, which means that some products could be adulterated and potentially

unsafe. In addition, the U.S. Food and Drug Administration (FDA) has issued warnings to some manufacturers of dietary supplements containing *Rhodolia rosea* for making false health claims about its effectiveness.

Can rhodiola produce a positive result on a military drug screening test?

Rhodiola in dietary supplements is not prohibited for use by Military Service Members and should not register on a routine military drug screening test.

The bottom line About rhodiola

There isn't enough evidence to know if and how much benefit you might gain by using *Rhodolia rosea* to boost brain health and optimize performance. It seems safe in small amounts and for short periods, but there isn't enough research to be able to confirm any effects (beneficial or harmful), especially for long-term use and among various populations.

The evidence presented here is for the single ingredient *Rhodolia rosea* and does not represent the evidence for rhodiola when combined with other ingredients. With multiple-ingredient supplements, it is nearly impossible to know which substance might cause any effect, either beneficial or harmful. In addition, the evidence presented is only for healthy adults. [↪](#)



Vinpocetine

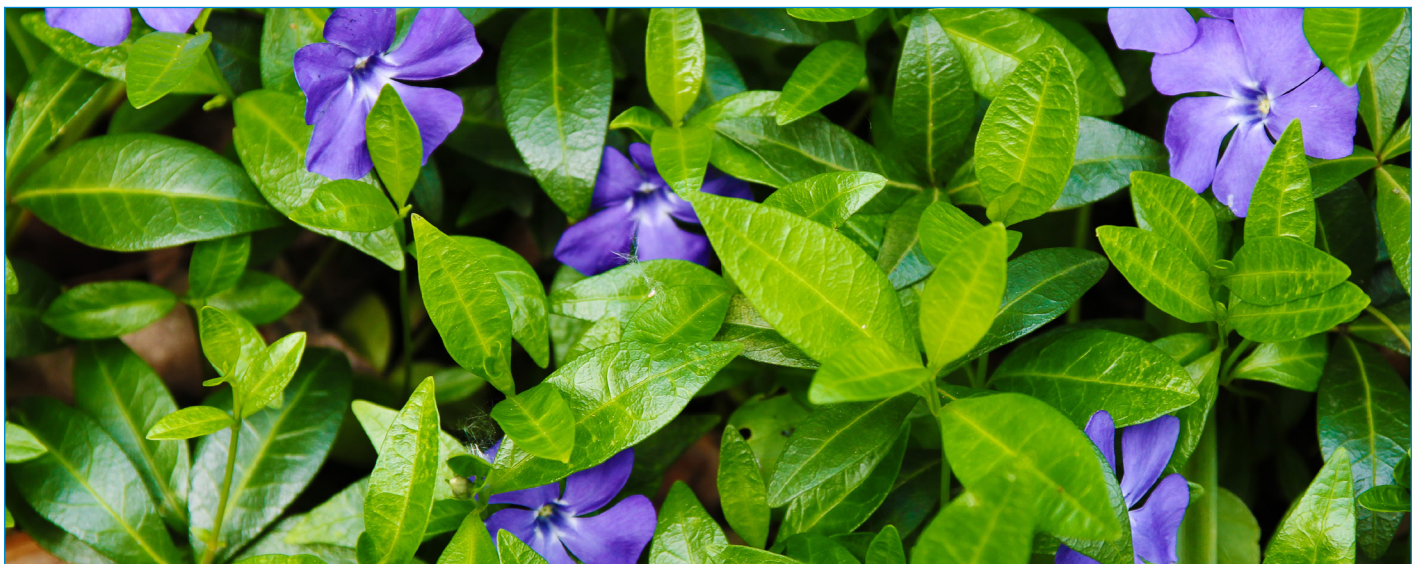
Vinpocetine is a synthetic substance derived from an alkaloid compound found in the leaves of the *Vinca minor*, or lesser periwinkle, plant and in voacanga seeds. It's often advertised as being able to improve memory or focus due to reported effects of increased blood flow to the brain. Some studies of elderly and stroke patients suffering mild or moderate symptoms of dementia have reported improvements in memory, concentration, and cognitive skills, but vinpocetine does not appear to benefit those with more severe symptoms of mental disorders and dementia. More research is needed to determine the effects of vinpocetine on healthy and younger populations.

Vinpocetine is on the OPSS list of DoD-prohibited substances.

Some adverse health effects associated with vinpocetine include facial flushing, headache, nausea, and dizziness. Because vinpocetine can affect blood flow, anyone taking blood thinners should use caution.

In September 2016, FDA announced its “tentative conclusion” that “vinpocetine (1) does not meet the definition of a dietary ingredient, and (2) is excluded from the definition of a dietary supplement.” In some countries (such as China, Germany, and Russia), vinpocetine is considered a pharmaceutical drug. For more information, please visit [FDA's web page on “Vinpocetine in Dietary Supplements.”](#)

On 3 June 2019, FDA released a [statement](#) that warns women of childbearing age about possible safety risks of dietary supplements containing vinpocetine. According to FDA, vinpocetine has been associated with adverse reproductive effects and might cause a miscarriage or harm fetal development. [↗](#)



Additional Brain-Health Resources

Brain health doesn't only include dietary supplements; it encompasses your Total Force Fitness. Below are several resources from the Human Performance Resources by CHAMP (HPRC) on how to reach and sustain an optimal level of military fitness, health, and performance as TFF relates to your brain health.

Mental Fitness

Performance Psychology

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Sleep & Stress

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Mental Health

[How concussions can impact memory and energy](#)

Social Fitness

Family Optimization

[Especially for families: How to help your warrior with TBI](#)

Physical Fitness

Training & Performance

[The importance of sleep for performance and recovery](#)

[Physical fitness: Good for your mind too](#)

Injury Prevention

[Exercise as treatment for concussions](#)

Total Force Fitness

TFF Strategies

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Nutrition

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[Omega-3 fatty acids in food](#)



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