

Brain Vitale™

Memory health and focus support*

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This information is provided as a medical and scientific educational resource for the use of physicians and other licensed health-care practitioners ("Practitioners"). This information is intended for Practitioners to use as a basis for determining whether to recommend these products to their patients. All recommendations regarding protocols, dosing, prescribing, and/or usage instructions should be tailored to the individual needs of the patient considering their medical history and concomitant therapies. This information is not intended for use by consumers.

Brain Vitale™ is a systems-based cognitive support formula designed to nourish multiple foundational brain pathways at once, rather than relying on a single mechanism to promote focus or memory.* It combines complementary nutrients and botanical compounds that work together to nourish brain cells, support healthy neuronal communication, and promote overall cognitive performance (see Figure 1 on page 4).* At the core of this formula is a multi-layered choline delivery system featuring citicoline (as Cognizin®) and glycerylphosphorylcholine (GPC, as CholineAid®). These synergistic choline suppliers help fuel acetylcholine production and phospholipid synthesis, key mechanisms involved in memory and attention.* Brain Vitale™ also includes ingredients that support brain energy, mental focus, and healthy cognitive aging, such as acetyl-L-carnitine, whole coffee fruit concentrate (as NeuroFactor™), phosphatidylserine, and standardized *Ginkgo biloba* extract.* Designed as a non-stimulant formula for daily use, Brain Vitale™ offers well-rounded support for individuals looking to stay mentally sharp, focused, and cognitively resilient as part of a healthy lifestyle.*

Formula Highlights

- Designed to support multiple foundational brain pathways simultaneously, rather than relying on a single mechanism to promote focus or memory*
- Features a strategically layered choline delivery system using citicoline (as Cognizin®) and GPC (as CholineAid®) to promote acetylcholine production and phospholipid synthesis for memory and focus support*
- Includes whole coffee fruit concentrate (as NeuroFactor®), clinically shown to support brain-derived neurotrophic factor (BDNF) levels associated with working memory and reaction time*
- Provides standardized *Ginkgo biloba* extract to support cognitive performance and healthy cognitive aging*
- Non-stimulant formula designed for consistent, daily cognitive support without reliance on short-term energy drivers*
- Gluten-free, dairy-free, soy protein-free, vegan; non-GMO

Citicoline (as Cognizin®)

Citicoline supplementation research has been of focal interest for decades when it comes to neurocognitive function and support. Citicoline's biochemical properties support key aspects of cognitive performance through its role in phospholipid synthesis, neuronal membrane integrity, and providing choline for acetylcholine production.¹ Citicoline (cytidine-5'-diphosphocholine) is a precursor to phosphatidylcholine, phosphatidylserine, and phosphatidylethanolamine, the structural fats that make up neuronal cell membranes. Alterations in membrane structure and phospholipid availability have been associated with changes in neuronal membrane structure and communication, which are factors related to overall cognitive function and development of neurocognitive conditions over the lifespan.^{2,3} The potential impact of citicoline supplementation on memory has been evaluated in clinical trials.^{4,5} This line of thought is based on citicoline's ability to supply choline and cytidine for the Kennedy pathway, promoting the formation of phosphatidylcholine and other structural phospholipids of neuronal membranes essential for the neurochemical processes involved in learning and memory.¹

Building on this mechanistic foundation, randomized, placebo-controlled trials have investigated citicoline supplementation in human populations.^{4,5} A placebo-controlled trial of 100 healthy men and women with age-associated memory impairment supplemented with 500 mg of citicoline every day for 12 weeks. Participants who supplemented with citicoline showed improvements in secondary outcomes of episodic memory (assessed by the Paired Associate test) (mean: 0.15 vs. 0.06, respectively, $P = 0.0025$) compared with those on placebo (mean: 0.15 vs. 0.06, respectively, $P = 0.0025$) as well as improvements in composite memory (mean: 0.72, $P = 0.0052$) compared to placebo (mean: 0.72,

Benefits*

- Helps support memory function^{4,5,6,7,16-19,26,27,31}
- Helps support focus, attention, and concentration^{6,7,20,27,31}
- Helps support productivity through focus, reaction time, and accuracy^{6,15,20,27,31}
- Helps support brain and cognitive function^{8,9,13-20,26-32}
- May help support healthy neurotransmitter metabolism and brain signaling^{9,20}

Supplement Facts

Serving Size 2 capsules
Servings Per Container 30

Amount Per Serving	% Daily Value
Acetyl-L-Carnitine HCl	500 mg *
Citicoline	250 mg *
L-alpha-Glycerylphosphorylcholine (CholineAid®) (from highly refined soy lecithin)	200 mg *
Coffee Fruit Concentrate (NeuroFactor®) (Coffea arabica) (whole fruit)	100 mg *
Phosphatidylserine (from sunflower lecithin)	100 mg *
Ginkgo Extract (<i>Ginkgo biloba</i>) (leaf) [standardized to contain 24% ginkgolactones and 5.4% terpene lactones]	100 mg *

*Daily Value not established.

Other Ingredients: Cellulose (capsule), dicalcium phosphate, vegetable stearate, silicon dioxide, tricalcium phosphate.

$P = 0.0052$).⁴ An additional study with 40 healthy volunteers evaluated the effects of supplementing with 500 mg of citicoline daily for two weeks on human vigilance, visual working memory, and oxidative stress markers. Citicoline supplementation improved psychomotor performance and working memory variables ($P < 0.01$) among participants.⁵

Citicoline's function surpasses just its ability to support memory. Researchers have also investigated its influence on attention and focus.^{6,7} Sixty healthy adult women, ages 40 to 60, completed a randomized trial where they took 250 mg or 500 mg of citicoline as Cognizin® daily for 28 days. Participants receiving 250 mg of citicoline as Cognizin® made significantly fewer omission errors ($p = 0.04$) and commission errors ($p = 0.02$) than placebo, while those receiving 500 mg of citicoline as Cognizin® made significantly fewer commission errors ($p = 0.02$) and showed a trend toward fewer omission errors ($p = 0.06$).⁶ Additionally, 75 healthy adolescent males were given 200 mg or 500 mg of citicoline as Cognizin® for 28 days. Individuals receiving citicoline as Cognizin® exhibited improved attention ($p = 0.02$) and increased psychomotor speed ($p = 0.03$) compared with those receiving a placebo. A higher weight-adjusted dose significantly predicted increased accuracy on an attention task ($p = 0.01$), improved signal detectability on a computerized attention task ($p = 0.03$), and decreased impulsivity ($p = 0.01$).⁷

In addition to its well-recognized role in supporting attention and focus, citicoline demonstrates several complementary neuroprotective actions. Preclinical in vivo research demonstrated that administering citicoline helped inhibit apoptosis associated with cerebral ischemia, enhance neuroplasticity, and increase levels of the neuroprotective protein sirtuin-1, which plays a central role in regulating neuronal aging and metabolic homeostasis.⁸ Additional in vivo research suggests citicoline may also help maintain balanced serotonin and glutamate activity, which are neurotransmitter systems involved in excitotoxicity during ischemic events.⁹ Its influence on dopaminergic pathways is notable as well, as citicoline inhibits both dopamine reuptake and promotes dopamine synthesis. These combined effects have been explored in neurodegenerative conditions such as Parkinson's disease (PD), where supplementation has been associated with improvements in rigidity, akinesia, motor function, cognitive progression, and mood-related symptoms.⁸ Together, these findings highlight citicoline's broad potential to support healthy brain function across multiple pathways.*

Acetyl-L-Carnitine

Acetyl-L-carnitine (ALC) is an acetylated form of the amino acid derivative L-carnitine, a compound present in most human tissues and considered “conditionally essential” when endogenous levels are insufficient. Although ALC can be obtained through the diet, intracellular concentrations may become depleted in older adults, premature infants, individuals with certain genetic conditions, mitochondrial dysfunction, or diabetes.¹⁰ Disturbance in ALC metabolism and biosynthesis has been documented in neurodegenerative diseases, including Alzheimer's disease (AD), where both plasma and tissue levels of ALC are frequently reduced.¹¹

Acetyl-L-carnitine plays a central role in mitochondrial energy metabolism and neuronal function. Carnitine supports the transport of long-chain fatty acids into mitochondria for β -oxidation, a process essential for ATP generation in tissues with high energy demand, including the brain.¹² Loss of the carnitine shuttle is a proposed mechanism underlying these declines, contributing to impaired mitochondrial function.¹¹ Memory processes are energy-intensive, especially in the hippocampus. By supporting mitochondrial fatty acid transport and ATP production, ALC helps maintain neuronal firing and synaptic plasticity.¹³ Acetyl-L-carnitine provides an acetyl group that contributes to acetyl-CoA production and supports cholinergic neurotransmission by serving as a substrate for acetylcholine synthesis, a neurotransmitter involved in attention, learning, and memory.¹¹ Preclinical evidence suggests ALC has additional neurobiological actions, including support for neuronal receptor health, modulation of nerve growth factor pathways, which may contribute to healthy neuronal signaling and structural integrity, and the prevention of tau protein hyperphosphorylation induced by homocysteine, inhibiting beta-amyloid phosphorylation.^{11,14,15} Through these roles, although exact mechanisms are still being studied, ALC may indicate its potential for memory and focus enhancement, as well as healthy aging support.^{10,11}

A systematic review and meta-analysis of studies evaluating ALC supplementation in dementia and other cognitive disorders found significant clinical and psychometric benefits compared to placebo.¹⁶ Among this meta-analysis, a single-blind, 150-day clinical trial in 481 subjects across 44 geriatric and neurologic units evaluated acetyl-L-carnitine (1,500 mg/day for 90 days) following a 30-day placebo lead-in and 30-day placebo washout. The ALC group displayed significantly improved cognitive performance on the Mini-Mental State Examination (MMSE) ($p < 0.0001$) and Randt Memory Test, with memory benefits persisting after discontinuation. Significant improvements were also observed in emotional-affective measures (Geriatric Depression Scale and Hamilton Rating Scale, $p < 0.0001$) and behavioral-relational outcomes (Family Stress Scale, $p < 0.0004$), with no significant adverse effects reported.¹⁷ In a randomized, double-blind, placebo-controlled study of 92 prefrail older adults, supplementation with ALC (1.5 g twice daily) for three months resulted in statistically significant improvements in global cognitive performance (MMSE, $p < 0.001$), functional capacity (six-minute walk distance, $p < 0.001$), and markers of systemic inflammation (CRP, $p < 0.01$) compared to placebo suggesting improvement in memory and cognitive processes.¹⁸

Coffee Fruit Concentrate (NeuroFactor®)

Whole coffee fruit extract (*Coffea arabica*) contains a unique polyphenol profile that has demonstrated memory-supportive properties. A 2024 randomized controlled trial of 142 to 196 healthy adults aged 40 to 65 demonstrated that those receiving 200 mg daily coffee cherry extract exhibited acute improvements in working memory (80.7% reduction in omissions vs. 11.1% placebo, $p = 0.026$) and sustained accuracy benefits over 28 days.¹⁹ A 2021 neuroimaging pilot study ($N = 8$) in older adults with subjective cognitive impairment found that administration of 100 mg of whole coffee cherry extract, as NeuroFactor™, produced a clinically significant reduction in reaction time, roughly a fourfold greater reduction versus placebo (Cohen's $d = -1.29$, $p = 0.004$) while also protecting against response inhibition errors. Participants receiving the extract also exhibited a 41% increase in exosomal brain-derived neurotrophic factor (BDNF) ($p = 0.04$), enhanced glutamate/GABA ratios, and improved functional connectivity in decision-making networks.²⁰ BDNF is a protein that plays an important role in synaptic plasticity, nervous system modulation, memory formation, and the growth, maintenance, and survival of neurons.²¹

A key component of whole coffee extract is chlorogenic acid (CGA). CGA is a polyphenol compound with antioxidant, anti-inflammatory, and neuroprotective qualities.²² Specifically, CGA has shown diverse neuroprotective effects on various neuropathological conditions, which may be exerted through inhibition of neuroinflammation, reduction in reactive oxygen species (ROS) production, prevention of oxidation, and suppression of neuronal apoptosis.²³ More robust randomized controlled trials in humans are needed to definitively establish CGA's potential neuroprotective properties. However, one preclinical invitro study using an immortalized human oligodendrocyte-like cell line (MO3-13) found that chlorogenic acid reduced intracellular superoxide ions, mitochondrial ROS, and NADPH oxidases (NOXs)/dual oxidase 2 (DUOX2) protein levels. In addition, tumor-necrosis factor alpha (TNF-α) induced effects were reversed by CGA, revealing the potential for antioxidant, anti-inflammatory, and pro-differentiative effects.²⁴

Additional Ingredients

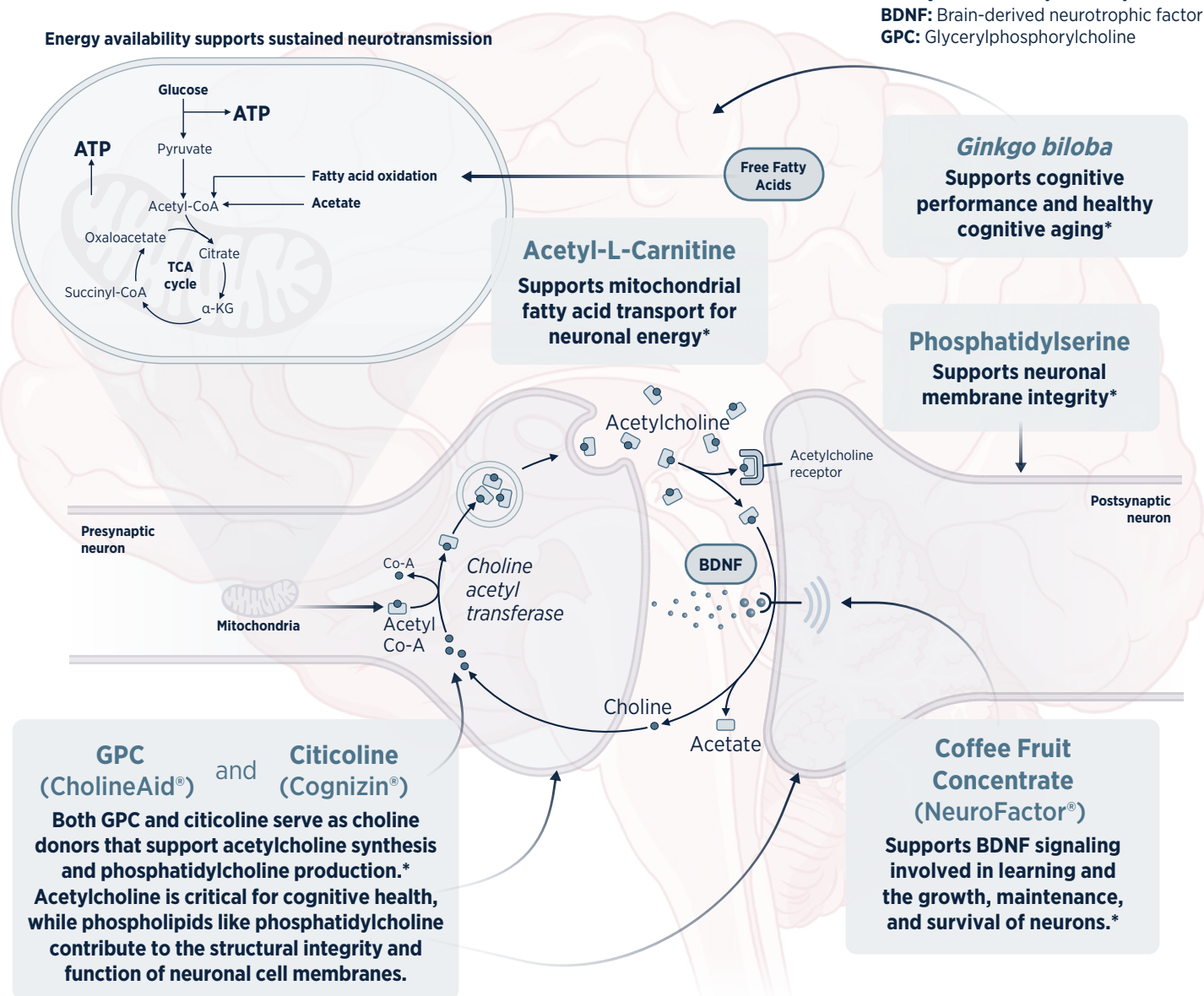
Brain Vitale™ contains several additional ingredients to support memory health, focus, and cognitive function.* Phosphatidylserine (PS) is an essential component of the cerebral cortex associated with cognitive function. It is hypothesized that phosphatidylserine helps maintain neuronal membrane integrity and supports neurotransmitter release through its vital role as a major phospholipid component in neuronal cell membranes, particularly in synapses.²⁵ These roles are thought to support the idea that PS has neuroprotective qualities. A systematic review and meta-analysis of nine human clinical trials evaluated phosphatidylserine supplementation (100 to 300 mg/day for six weeks to six months) in adults aged 65 years and older with age-associated cognitive decline or memory complaints. Pooled analysis demonstrated a statistically significant improvement in memory outcomes among older adults with cognitive decline compared to placebo (SMD = 0.22; 95% CI: 0.06-0.38; $p < 0.01$; $I^2 = 22\%$).²⁶

Brain Vitale™ also includes the phospholipid glycerylphosphorylcholine (GPC), a highly bioavailable compound that supplies choline traditionally used to support cognitive function.* Choline is required for the synthesis of acetylcholine, a neurotransmitter essential for memory, learning, and attention, and GPC readily crosses the blood-brain barrier to support choline availability in the brain. Through its role in supporting acetylcholine production, GPC may help support mental focus and overall cognitive performance.^{27,28,29} Consistent with these proposed mechanisms, a randomized, double-blind, placebo-controlled crossover trial in healthy men reported significantly greater improvements in Stroop test performance following α-GPC supplementation (315 mg or 630 mg) compared to placebo ($p = 0.046$ and $p = 0.013$, respectively), along with faster Stroop completion times in the higher-dose group ($p = 0.021$).²⁷ Additional preclinical and clinical research studies support the role of glycerylphosphorylcholine in maintaining cognitive performance, providing a foundation for its inclusion in Brain Vitale™.^{28,29}

Lastly, *Ginkgo biloba* is a well-studied botanical traditionally used to support cognitive function.³⁰ Recent clinical evidence suggests that standardized *Ginkgo biloba* extracts may provide modest but meaningful support for cognitive performance in older adults with mild neurocognitive impairment.^{31,32} A 2023 systematic review included studies that provided neurocognitively impaired participants with *Ginkgo biloba* extract with doses ranging from 120 mg to 240 mg daily. The review reported significant improvements across multiple cognitive domains, including memory, processing speed, attention, and executive function, as well as benefits for associated neuropsychiatric symptoms.³¹ Meta-analytic evidence further indicates that standardized *Ginkgo biloba* extract (EGb 761), particularly at a daily dose of 240 mg, may help stabilize cognitive performance in individuals experiencing age-related cognitive decline.³² Although this dosage exceeds the amount provided in Brain Vitale™, it illustrates the role of *Ginkgo biloba* in supporting brain function throughout the natural aging process.* The Designs for Health® formula is standardized to contain 24% ginkgo flavonglycosides and 5.4% terpene lactones, two important active constituents of *Ginkgo biloba*.

Figure 1. Synergistic Mechanisms Supporting Cognitive Function*

ATP: Adenosine triphosphate
TCA cycle: Tricarboxylic acid cycle
BDNF: Brain-derived neurotrophic factor
GPC: Glycerylphosphorylcholine



Recommended Use: Take 2 capsules per day with meals or as directed by your health-care practitioner.

Warning: Consult your health-care practitioner before use if you are pregnant or lactating, have or are taking prescription medication, especially blood thinners or anticoagulants.

For a list of references cited in this document, please visit:

<https://www.designsforhealth.com/api/library-assets/literature-reference---brain-vitale-tech-sheet-references>

Dosing recommendations are given for typical use based on an average 150-pound healthy adult. Health-care practitioners are encouraged to use clinical judgement with case-specific dosing based on intended goals, subject body weight, medical history, and concomitant medication and supplement usage.

Cognizin® is a registered trademark of KYOWA HAKKO BIO CO., LTD
 NeuroFactor® is a trademark of VDF FutureCeuticals, Inc. Pat. Fcpatent.com
 Choline Aid® is a registered trademark of Chemi Nutra.

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

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