**Phosphatidylserine plus DHA with SerinAid®**

**INGREDIENTS**
The aging population results in an increased prevalence of diminished cognitive functioning. Because aging is associated with changes in lipid composition in the brain, supplementation with phospholipids, which are fundamental components of neuron cell membranes, has been suggested for supporting healthy cognitive functions. The history of phosphatidylserine (PS) began in 1940’s with its identification by Folch and its clinical use for the management of the aging brain.

Doctor’s Best Phosphatidylserine plus DHA contains SerinAid® Phosphatidylserine (PS) and vegan-sourced DHA and has been shown to help support cognitive function. Numerous studies have demonstrated that PS could be beneficial for cognitive function, primarily those that are prone to worsen with age including memory, normal daily tasks, vocabulary skills, mood and attention health. Together PS and DHA help facilitate the electric signals that are the basis of neuron communication, supporting not only cognitive function but also stress control.

Phosphatidylserine (PS) has two FDA qualified health claims related to cognitive function – one is “phosphatidylserine may reduce the risk of cognitive dysfunction in the elderly” and the other one is “consumption of phosphatidylserine may reduce the risk of dementia in the elderly.”

The FDA has designated both phosphatidylserine (PS) and docosahexaenoic Acid, Omega-3 (DHA) as Generally Recognized As Safe (GRAS) meaning that these products are considered safe for human consumption.

**BENEFITS**
- Phosphatidylserine plus DHA helps support mood, learning, attention and other cognitive functions.
- Phosphatidylserine plus DHA helps support mood health, memory and attention abilities
- Phosphatidylserine plus DHA helps support the body during mental and physical stress
- Non-GMO, Gluten Free, Vegan

**EXTENDED BENEFITS**
Phosphatidylserine plus DHA helps support healthy cognitive function*
Cognitive decline has emerged in the last 20 years as a major challenge to health systems affecting the quality of life of the aging population and of the social and economic environment of the patients and families. To cope with the risk of mood and cognitive decline, diet is one option that may contribute to the amelioration of neurodegenerative states. Among the dietary nutrients associated with the optimal development and function of the brain are docosahexaenoic acid (DHA) and phosphatidylserine (PS). DHA appears to have a key role in neuronal phospholipid synthesis. In the brain, through the action of some specific enzymes, DHA metabolism generates phosphatidic acid, a precursor of phosphatidylserine, one of the most abundant phospholipids in brain cells. Both PS and DHA may help promote executive memory, learning, and mental processing.

Phosphatidylserine plus DHA helps support mood health, memory and attention abilities*
Studies of phosphatidylserine dosing in age-associated memory impairment point to PS as an effective alternative option for memory complaints among elderly individuals. DHA and PS have been also studied for their key roles in supporting mood and memory health in animals and humans.

PS and DHA have been also studied for their promising activities on supporting attention ability in children and adults.

**Supplement Facts**

<table>
<thead>
<tr>
<th>Serving Size</th>
<th>1 veggie softgel</th>
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<tr>
<td>Servings per container</td>
<td>60 servings</td>
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<table>
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<tr>
<th>Nutrient</th>
<th>Amount per serving</th>
<th>% Daily Value</th>
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<tr>
<td>DHA (Docosahexaenoic Acid, Omega-3 from algae of Schizochytrium sp.)</td>
<td>100 mg</td>
<td>†</td>
</tr>
<tr>
<td>Phosphatidylserine (PS, from SerinAid®)</td>
<td>100 mg</td>
<td>†</td>
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† Daily Value not established.

**Other Ingredients:** Soy lecithin, Veggie Softgel [modified food starch, carrageenan, glycerin, sorbitol, purified water, annatto (color)], algae oil.

**Contains Soy**

**Suggested Adult Use:** Take 1 softgel daily with food, or as recommended by a nutritionally-informed physician.

**Gluten Free / Vegan**

Store in a cool dry place.

* 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.
Phosphatidylserine plus DHA helps support the body during mental and physical stress\(^*\)

Positive adaptations from training only occur when restoration exceeds the catabolic dosage received during physical (and/or) mental training. Many factors affect recovery after physical activities, such as additional stress. Accumulative stress can negatively affect restoration, as well as performance.\(^{29}\) Phosphatidylserine (PS), has shown some positive properties on recovery and human performance, and has also been shown to enhance mood, decision making and accuracy. Athletic performance is affected by several factors, in which PS might be able to help support the body during mental and physical stress.\(^{30,31,32,33,34}\)

PHARMACOLOGICAL & CLINICAL STUDIES

Experimental studies (in rats and aged dogs) evaluated the effects of phosphatidylserine (PS) on cognitive function. Findings from these studies showed that PS may have a positive effect on mood and memory function in rats and aged dogs.\(^{22,24,35}\)

A clinical study was conducted to evaluate the effects of phosphatidylserine (PS) on cognitive function in 35 participants with mild memory problems associated with aging. The results indicated an improvement in the treated group compared to the placebo group. The study concluded that PS supplementation was beneficial in improving daily life activities.\(^{36}\)

The effects of phosphatidylserine (PS) on cognitive and behavioral symptoms were studied in a group of 10 elderly women with mood complaints. Results indicated that PS induced consistent improvement of mood symptoms, memory functions and behavior impairment.\(^{37}\)

To evaluate the effect of phosphatidylserine on cognitive function in the elderly population, a double-blind randomized study was conducted in 494 participants. Participants in the treated group received 300 mg/day for 6 months. Statistically significant improvements in the PS-group compared with placebo group were observed in behavioral and cognitive parameters. It was also demonstrated that PS was well tolerated during the study.\(^{38}\)

A placebo-controlled study looked at the effectiveness of PS in individuals with mild memory problems associated with aging. They were randomly given either placebo or 100 mg PS, three times daily. The benefits they found included enhancement of memory and name recall, learning, and ability to concentrate compared to the placebo group.\(^{39}\) The subjects tolerated PS well and no side effects were reported.

An open-label study (both the health provider and subjects were aware of the supplement given) looked at the effects of PS derived from plant sources on 15 people with mild memory problems associated with aging. The study found that subjects performed significantly better on most of the tests after supplementing with PS and some subjects reported improvement of their memory in day-to-day tasks.\(^{40}\)

A double-blind, randomized controlled study was conducted to evaluate the effects of soybean-derived phosphatidylserine (Soy-PS) on cognitive functions among elderly Japanese participants with memory complaints. They concluded that Soy-PS was safe to take and that Soy-PS supplementation could improve the memory functions of the elderly with memory complaints.\(^{41}\)

To evaluate the efficacy of phosphatidylserine (PS) containing omega-3 fatty acid (PS-omega-3) on improving memory abilities, a pilot study was conducted in elderly volunteers with memory complaints. Results showed that PS-omega-3 supplementation was effective in increasing the ability to recall words. The study concluded that the combination of PS-omega-3 may have a favorable effect on memory in subjects with memory complaints.\(^{42}\)

A single-center randomized double-blind placebo-controlled study evaluated the effects of a combination of phosphatidylserine + DHA (PS-DHA) on cognitive functions. The combination PS-DHA was found to be safe. They concluded that PS-DHA may improve cognitive performance in the elderly population with memory complaints.\(^{52}\) These results were also found when the same research team conducted an open-label extension aiming at evaluating the effect of PS-DHA at a lower dosage.\(^{43}\)

A pilot study evaluated the efficacy and safety of soybean-derived phosphatidylserine (SB-PS) in improving cognitive performance in the elderly with memory complaints. The computerized test results showed that SB-PS supplementation significantly increased the memory recognition, memory recall, executive functions, and mental flexibility. The study also suggested that SB-PS is safe for human consumption and may be a safe alternative to phosphatidylserine extracted from bovine cortex.\(^{44}\)

Researchers evaluated the safety profile of a phosphatidylserine (PS) preparation in the non-demented elderly with memory complaints. The efficacy study of this particular formulation indicated that PS-DHA may improve cognitive deficits in non-demented elderly population. The results of this study indicated that consumption of PS-DHA at a dosage of 300 mg PS/day for 15 weeks, or 100 mg PS/day for 30 weeks, is safe, well tolerated, and does not produce any negative effects in the tested parameters.\(^{45}\)

The aim of another study was to investigate the effect of phosphatidylserine (PS) on the memory of humans and rats with memory problems. The study concluded that PS decreased cholinesterase, improved memory in subjects with memory complaints and rats with memory deficiency.\(^{46}\)

To evaluate the effect of PS and omega-3 fatty acid-containing supplement on mood health, a pilot study was conducted in elderly participants. Results showed significant improvement in mood state in treated patients. This suggested that supplements containing PS-DHA could be a beneficial option for improving mood health and neuron function in elderly individuals.\(^{47}\)

The effects on mobility and cognition of a multinutrient supplement that contains 60 mg phosphatidylserine (PS), 1 g DHA and other nutrients, were assessed in postmenopausal women. Results showed significant positive effects on cognitive tests and mobility with improved habitual walking speed. Researchers concluded that multinutrient supplementation with DHA and PS may play a key role in supporting mobility and cognition functions.\(^{48}\)

A study investigated the effects of soybean-derived phosphatidylserine (PS) on exercise capacity, neuro-endocrine function, and feeling states during exhaustive intermittent exercise. This was the first study to report improved exercise capacity following PS supplementation suggesting that PS could enhance physical activity and/or help with recovery after exercise.\(^{49}\)

The activity of phosphatidylserine (PS) on the neuro-endocrine and neurovegetative responses to physical stress was evaluated in healthy men who underwent different experiments while on a bicycle. The study concluded that acute administration of PS may partially counteract the adrenocortical activation induced by physical stress.\(^{50}\)

A study was performed to evaluate the effect of oral phosphatidylserine (PS) supplementation on golf performance in young golfers. Results showed that PS supplementation significantly increased the number of good ball flights and showed a trend towards improving perceived stress levels during teeing-off. The study concluded that PS supplementation showed a statistically significant tendency to improve perceived stress levels in golfers.\(^{51}\)

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A study investigated the effect of phosphatidylserine (PS) on cognition and cortical activity after mental stress in healthy subjects. This study showed chronic supplementation of PS significantly decreased Beta-1 power in right hemispheric frontal brain regions before and after induced stress and that was connected to a more relaxed state compared to the control group.  

A study examined the influence of short-term supplementation with a moderate dose of phosphatidylserine (PS) on plasma concentrations of cortisol, growth hormone and testosterone, before, during, and following moderate intensity exercise in 10 healthy males. The findings suggested that PS may be an effective supplement for combating exercise induced stress and preventing the physiological deterioration that can accompany too much exercise. They concluded PS supplementation promoted a desired hormonal status for athletes by blunting increases in cortisol levels. 

A pilot study evaluated the effect of phosphatidylserine supplementation on cognitive function prior to and following an acute session of resistance training in male volunteers. Results showed that participants who received 400mg/day of phosphatidylserine (SerinAid) presented better cognitive performance than placebo group. The study concluded that improved cognitive function could benefit athletes and non-athletes alike and PS supplementation could play a key role on cognitive functioning prior and following physical activities.

The efficacy and safety of phosphatidylserine (PS) containing Omega-3 (PS-Omega3) in improving attention and mental functions in children was evaluated in several studies. Results showed children that switched to PS-Omega3 treatment from placebo showed a significant improvement in Omega3 fatty acids may improve memory abilities in non-demented elderly with memory complaints: a double-blind placebo-controlled trial. Dementia and geriatric cognitive disorders. 2010;29:467.


Phosphatidylserine. GRAS 2016.

Docosahexaenoic acid. GRAS


Valenzuela A. Docosahexaenoic acid (DHA), an essential fatty acid for the proper functioning of neuronal cells: their role in mood disorders. Grasas Y Aceites. 2009;60:203-212.


Castilho JC, Perry JC, Andreatini R et al. Phosphatidylserine: an antidepressive or a cognitive enhancer? Prog Neuro-Psychopharmacol

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