



Regenerlife™ MAGNESIUM L-THREONATE

NPN 80080400

RESEARCH INFORMATION

Feature summary

Regenerlife Magnesium L-Threonate is uniquely formulated for cognitive support in the aging brain. It is made with Magtein®, a highly absorbable form of magnesium L-threonate, which has been shown to significantly increase magnesium concentrations in the brain. It has the unique ability to cross the blood-brain barrier, improving short- and long-term memory in individuals of all ages. It has been shown to reduce the effects of aging on the brain by nine years.

Magnesium is an essential nutrient needed for hundreds of biochemical processes throughout the body. It plays key roles in areas of the brain that influence memory, learning, and other cognitive processes. Many cognitive changes that occur because of aging, such as memory and executive processing, are linked to low blood magnesium levels. A magnesium-rich diet is an important step in preserving cognitive health in older age. Magnesium is also needed to maintain healthy muscle function, tissue formation, and bones and teeth, and for the metabolism of carbohydrates, proteins, and fats.

Magnesium L-Threonate is part of the Regenerlife healthy aging line of supplements formulated for healthy aging and longevity. It provides 2000 mg of magnesium L-threonate (equivalent to 144 mg of highly absorbable magnesium) taken in three easy-to-swallow vegetarian capsules per day. It is non-GMO, vegan-friendly, and a great choice for anyone who wants to complement healthy lifestyle habits and actively promote cognitive health as they age.

How it works

Magnesium is involved in over 300 of the body's enzymatic reactions, including reactions in brain function (Hewlings & Kalman, 2022). The uptake of standard forms of magnesium into the cerebrospinal fluid and brain is typically very low. Because L-threonate occurs naturally in the cerebrospinal fluid, the L-threonate form of magnesium increases its bioavailability in the nervous system to elevate cerebrospinal fluid levels and stimulate intracellular magnesium uptake (Liu et al., 2016; Hewlings & Kalman, 2022).

Magnesium plays a crucial role in memory and executive processes by regulating both the structure and function of brain neurons in specific areas of the brain, such as the prefrontal cortex and hippocampus. As a second messenger in neurons, magnesium controls the supply of energy required for nerve-impulse transmission. It influences the ability of neurons to send and receive signals by increasing the number of synapses (density) and helping neurons change and strengthen their connections over time (plasticity) (Liu et al., 2016). Magnesium also increases the number of specialized receptors required for synaptic plasticity in the aging brain and helps protect neurons against cell death (Liu et al., 2016; Al-Ghazali et al., 2020). Magnesium L-threonate enhances NMDA receptor signalling in addition to synaptic density and neuroplasticity in the prefrontal cortex and hippocampus (Zarate et al., 2013). Modifying the efficacy of NMDA receptors functions as a mechanism for improving associative learning and memory (Tang et al., 1999).

Magnesium protects the integrity of the blood-brain barrier and helps prevent the mitochondria from releasing proteins that trigger cell death. By counteracting oxidative stress, it also protects against inflammation in the brain (Maier et al., 2023).

Research

The natural changes that occur in the brain as we age are closely associated with a decline in cognitive abilities and disruptions in sleep patterns. These factors can have a considerable impact on a person's independence and overall quality of life (Liu et al., 2016). It is estimated that mild forms of cognitive impairment affect 10–15% of people over the age of 65, with some people progressing to further forms of cognitive degeneration (Anderson, 2019). Oftentimes, changes in the brain take place years before cognitive symptoms become noticeable. Health experts suggest that taking additional steps to protect cognitive health earlier in life may help delay the progression of cognitive changes (Anderson, 2019).

Maintaining an adequate intake of magnesium through diet or supplementation is an important step toward protecting cognitive health. Without enough magnesium, brain neural function becomes unbalanced and can lead to inflammation and degeneration of brain neurons (Maier et al., 2023). Elevating magnesium levels in the brain enhances its ability to modify the strength and function of neuronal connections, helping to counteract age-related declines in cognition function and memory (Liu & Tsien, 1995; Tang et al., 1999; Liu, 2004; Slutsky et al., 2004; Wilson et al., 2007).

Using data from the National Health and Nutrition Survey, a study of 2,508 participants aged 60 and older found that a higher dietary intake of magnesium was independently associated with better cognition in older populations (Tao et al., 2022). In a cross-sectional study, researchers also observed a positive correlation between whole-blood magnesium levels and performance on neuropsychological assessments that evaluated attention, executive function, and language skills among adults aged 55 and older (Lu et al., 2023).

Not all forms of magnesium are equal in terms of direct cognitive support. The chemical structure of Magtein improves magnesium's bioavailability in the nervous system (Liu et al., 2016). Animal studies have shown that the administration of Magtein enhances memory significantly more than taking magnesium chloride or magnesium sulfate (Sadir et al., 2019). These improvements in memory are both dose-dependent and associated with increased synaptic connections and density in the brain (Sadir et al., 2019; Slutsky et al., 2010).

In a double-blind, placebo-controlled trial, supplementation with a Magtein product led to a 10% improvement in a clinical assessment of executive function called a "Trail Making Test" in 50–70-year-olds. After a 12-week period, participants showed an average improvement of 20% in aspects of cognitive ability, including executive function, impulsivity, visual search, visual attention, and motor speed. Additionally, there was a 13% improvement in working memory after six weeks, although this was not sustained after 12 weeks. Overall improvements were equivalent to a nine-year reduction in brain age (Liu et al., 2016; Tombaugh, 2004).

A double-blind, placebo-controlled study was also conducted with adults aged 50–70 years struggling with feelings of fear and emotional lows. Participants supplemented with 1500–2000 mg of Magtein per day for 12 weeks demonstrated a significant reduction in fear compared to baseline, as assessed by the Hamilton Anxiety Rating Scale (HAM-A) (Hewlings & Kalman, 2022).

In a double-blind, placebo-controlled study, a Magtein-based formula that combined 800 mg of magnesium L-threonate with 100 mg of phosphatidylserine, 160 IU of vitamin D3, 24 mg of vitamin C, and 8 mg of vitamin B6 was found to significantly improve the memory scores of adults aged 18–65. Researchers also found that the effect of Magtein on improving memory and cognition was greatest in older participants compared to young adults (Zhang et al., 2022).

Ingredients

Each vegetarian capsule contains:	1 cap	3 caps
Magnesium (elemental).....	48 mg.....	144 mg
From Magnesium L-Threonate Magtein®	667 mg.....	2000 mg

Dosage

Recommended adult dose: 1 capsule 3 times daily or as directed by a health care practitioner. Use for a minimum of 6 weeks to see beneficial effects on cognitive function. Consult a health care practitioner for use beyond 3 months.

Cautions

Consult a health care practitioner if symptoms persist or worsen. Consult a health care practitioner prior to use if you are pregnant or breastfeeding. Keep out of the reach of children.

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