Health Matrix

UltraMag Brain

- *Enhances Mental Focus and Clarity*
- *Improves Memory and Cognition in Those with Age-Related Memory Decline*
- *Improves Sleep Quality Including Time Spent in Deep and REM Sleep*
- *Supports Mental and Emotional Wellbeing*

This product provides three unique forms of magnesium to support optimal brain health and function. The formula is composed of magnesium L-threonate, magnesium acetyl taurinate and magnesium glycerophosphate. The three highly bioavailable forms of magnesium increase systemic and brain magnesium concentration. Increased intraneuronal magnesium has been scientifically demonstrated to support neuroplasticity and mental focus, and improve memory in the aging brain. Additionally, it promotes improved quality of life by supporting a balanced sleep-wake cycle and mood. Mag Threonate can also help alleviate occasional nervousness and stress.

Overview

Magnesium is one of the most important minerals for human physiology, serving as a cofactor in over 300 enzymatic reactions. The 2013 NHANES found that 48% of the United States population consumed less than the recommended daily allowance (RDA) for magnesium.[1] A contributing factor to low magnesium intake is the significant decline of 80-90% of magnesium content in produce compared to 100 years ago.[2] Additionally, magnesium status can be negatively impacted by aging, certain health conditions, medications, exercise and diets high in soft drinks, caffeine, alcohol, sodium, calcium and excessive protein[2,3,4,5] Poor magnesium status is associated with several health concerns, such as occasional headaches, poor cognition, poor concentration, low mood, nervousness, suboptimal blood pressure and altered insulin response.[5,6]

Magnesium and the Brain: The Threonate Difference

Magnesium status is an assessment challenge due to its tight regulation in serum.[2] A sufficient level of magnesium is essential for the health and function of the brain. Some of its most important functions are protecting the integrity of the blood brain barrier (BBB), serving as a cofactor for neurotransmitter synthesis, and modulating receptors.[3,7] The transportation of magnesium into the brain is normally a restricted process due to the tight regulation of magnesium in blood. In 2010, researchers at the Massachusetts Institute of Technology (MIT) published their novel discovery of magnesium L-threonate (MgT), the only magnesium complex shown to specifically increase magnesium levels within the brain.[4] MgT increases brain magnesium concentration by the association of threonate with the glucose transporters on the blood brain barrier to facilitate the transportation of magnesium from the blood into the neurons in a concentration-dependent manner.[8]

MgT has been found to increase magnesium concentration in the cerebrospinal fluid (CSF) after only two weeks with 108-144 mg doses of elemental magnesium, three times less than the current RDA.[8,9]

Sleep Quality

Poor sleep affects 62% of adults worldwide.[10] Insufficient magnesium intake and poor sleep have been correlated in several studies.[5] Some mechanisms to explain the connection of poor sleep with inadequate magnesium are the ability of magnesium to bind gamma-aminobutyric acid (GABA)

receptors, attenuation of the stress response or its role as a cofactor in melatonin synthesis.[5,7]

In a study of 76 adults with sleep disturbances, 1 g of MgT resulted in significant improvement of several sleep variables. Participants reported improved sleep quality, faster time falling asleep and improved time spent asleep. Additionally, they reported improved mood and mental alertness. Concomitant Oura Ring data supported their reports indicating the MgT group had better improvement of REM, light and deep sleep compared to those receiving placebo.[11]

Mental-Emotional Health

A 2023 survey reported that 49% of adults in the United States report frequent stress.[12] Low magnesium has been found in up to 60% of people reporting long-term stress.[13] In a study of men, the group receiving supplemental magnesium had lower levels of the stress hormone cortisol compared to those receiving placebo.

Symptoms of low mood and nervousness can occur independently of stress but are often experienced at the same time.[5] In the brain, magnesium supports mood and emotional health by acting as a cofactor for the synthesis of dopamine and serotonin, inhibiting the release of excitatory glutamate, and binding calming GABA receptors.[1,5]

In a study of older adults with stress and nervousness, participants who received either 1.5 or 2 g of MgT had a significant improvement in stress, nervousness and fear symptoms compared to the placebo group.[1]

Memory and Concentration

Memory and mental focus are common patient concerns. In an animal model, MgT was found to increase the synaptic density and function of neurons in the brain. Additionally, treatment of hippocampal cells with MgT resulted in increased mitochondrial density and function.[8] In a study of adults with mental focus concerns, the majority that received MgT daily demonstrated improvement in IQ and attention.[14]

A decline in neuronal synapses, their function and consequent atrophy of the brain are associated with impaired cognition, a process that increases with age.[8] In a study of older adults with memory concerns, those that received 1.5 to 2 g of MgT daily demonstrated improvement in executive function, working (short-term) and episodic memory.[9] In another eight-week study of older adults, those receiving MgT had statistically significant improvement on their MMSE (Mini-Mental State Examination) score.[15]

Additional Brain Supporting Forms of Magnesium

Magnesium Acetyl Taurinate

Magnesium acetyl taurinate (MAT) was invented by magnesium research pioneer Professor Jean Durlach.[16] MAT is a highly bioavailable form of magnesium with several brain-supporting properties.[17] The acetyl group addition to the amino acid mineral chelate increases its solubility in lipophilic structures, like the brain.[18] Once inside cerebral tissue, the magnesium can exert its brain-supporting actions as described above.

The enhanced delivery of taurine into the brain via the acetyl group facilitates its beneficial neurological actions like preventing excessive excitatory activity through modulation of GABA, glycine, kainic acid and glutamate receptors, enhancing mitochondrial ATP production, increasing antioxidant protection and maintaining normal inflammatory balance. Thus, in addition to the magnesium benefits, taurine of MAT has its own brain-supporting actions such as neuroprotection, supporting memory, balanced mood and normal cell regenerative processes.[19]

Premenstrual syndrome (PMS) is a common, physiological process experienced by up 50% of menstruating women. Poor magnesium status is believed to contribute to symptoms experienced during PMS like headaches, irritability, nervousness and sleep disturbance. In a study of 19 women over three menstrual cycles, daily MAT resulted in statistically significant reduction in 20 symptoms associated with PMS.[20]

Magnesium Glycerophosphate

Magnesium glycerophosphate (MG) is another magnesium complex with high bioavailability.[21] In addition to delivering magnesium, the glycerol component of MG may have additional brain supporting actions. Glycerol has been found to act as a metabolic reserve for mitochondrial ATP production in neuronal tissue, especially in GABAergic neurons and the hippocampus.[22] Additionally, glycerol serves as the backbone for phospholipid synthesis, a major component of neurological membranes in the central and peripheral nervous system.[23]

Directions

Mix 1 scoop (3.3 grams) of this product Powder with water or the beverage of your choice once daily or as recommended by your health care professional.

Does Not Contain

Gluten, yeast, synthetic colors or artificial flavors.

Cautions

If you are pregnant or nursing, consult your physician before taking this product.

Supplement Facts

V1

Serving Size 1 Scoop (3.3 Grams)
Servings Per Container About 30

	Amount Per Serving	% Daily Value
Magnesium (as Magnesium L-Threonate (Magtein®), Magnesium Glycerophosphate, Magnesium Acetyl Taurinate)	200 mg	48%
Magnesium L-Threonate (Magtein®)	1 g	*

* Daily Value not established.

Other Ingredients: Natural Flavor, Citric Acid, Malic Acid, Elderberry Extract (for color) and Rebaudioside M.

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†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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