

Magnesium Citrate



Clinical Applications

- Supports Bowel Function.*
- Helps With Relaxation.*
- Supports The Ability To Fall Asleep.*
- Helps To Dissolve Existing Calcified Kidney Stones.*

Magnesium helps convert carbohydrates, protein, and fats to energy, acts as a catalyst in thousands of enzymatic processes, regulates and maintains vascular tone, and is critical to proper bone formation. It regulates calcium and potassium metabolism, facilitates muscle constriction and relaxation, and assists in nerve transmission and conduction. This formulation uses magnesium citrate, a readily soluble form of magnesium. Some research indicates magnesium citrate is better absorbed compared to other less soluble forms of magnesium..

All Adaptogen Research Formulas Meet or Exceed cGMP Quality

Discussion

Magnesium—the fourth most abundant mineral in the body— participates in over 300 enzymatic reactions in nearly all tissues. Deficiency is common. The average American diet is thought to provide about 40% of the daily magnesium need, and reports from the World Health Organization have suggested that three quarters of Americans fall short of the daily requirement.¹ Furthermore, because magnesium is predominantly an intracellular cation, serum magnesium remains a poor predictor of tissue magnesium content and availability; therefore, deficiency can sometimes go undetected.¹ Magnesium deficiency can result from poor dietary intake, poor absorption, and excessive losses through urine, stool, perspiration, or lactation. Certain drugs, certain herbs, poor kidney function, excessive alcohol intake, and drinking mostly “soft” water can contribute to magnesium depletion.^{1,2} It is also important to note that physical and emotional stresses increase the need for magnesium and that hypomagnesemia and stress potentiate each other’s negative effects.^{3,4} Moreover, the adrenergic effects of psychological stress cause movement of magnesium from intracellular to extracellular space, which increases urinary excretion and depletion of body stores.^{4,5}

Magnesium participates in the development and maintenance of bones and teeth; the metabolism of carbohydrates, proteins, and fats; the formation of cells and tissues; the modulation of cytokines; and the maintenance of muscle function, including the heart.^{1,6,7} Magnesium, in the form of magnesium citrate, is often used in the short term for bowel movement support, and some individuals find it useful for preventing calcium crystallization in the kidneys.*

Bowel Function/Chronic Constipation*

Magnesium draws water into the lower GI tract, making stools softer and easier to pass. This property underlies the traditional use of Epsom salt (magnesium sulfate) as a saline laxative. Magnesium citrate has been employed in pre-colonoscopy emptying of the colon, with fewer unpleasant side-effects and better patient tolerance than the more common polyethylene glycol preparations.⁸

Kidney Stones*

The delicate balance between calcium and magnesium suggests that adequate magnesium levels may protect against inappropriate deposition of calcium in the soft tissue. Low magnesium levels are common in patients prone to developing kidney stones. Increased urinary magnesium concentrations have been shown to reduce the formation, and decrease the size, of calcium oxalate crystals, possibly by forming soluble complexes with oxalate. Magnesium may also reduce absorption of oxalates by binding exogenous oxalate in the intestine.^{9,10}

Supports The Ability To Fall Asleep*

A sampling of studies on PubMed indicates that at doses of 300-500 mg/d, magnesium citrate also has roles in supporting sleep quality,¹¹ improving metabolic markers (e.g., fasting insulin and C-peptide) in overweight individuals,¹² maintaining healthy blood pressure already within the normal range,¹³ and reducing nighttime leg cramps.¹⁴ These varied effects illustrate the many metabolic and physiological roles of magnesium and the usefulness of magnesium in citrate form.*

***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.**

Distributed by: Adaptogen Research
625 Barksdale Road, Suite 113
Newark, DE 19711

Magnesium Citrate



Supplement Facts

Serving Size 1 Capsule
Servings Per Container 90

Amount Per Capsule	% Daily Value
Magnesium (as magnesium citrate complex) 150 mg	36%

Other ingredients: Vegetarian capsule (hydroxypropyl methylcellulose, water) and ascorbyl palmitate.

Suggested Use

1 capsule, 1 to 3 times daily or as directed by a healthcare professional.

Allergy Statement

Free of the following common allergens: milk/casein, eggs, fish, shellfish, tree nuts, peanuts, wheat, gluten, soybeans, and yeast. Contains no artificial colors, flavors, or preservatives.

Caution

If you are pregnant, nursing, have a medical condition, or taking prescription drugs, consult your healthcare professional before using this product. Keep out of reach of children.

References

1. Long S, Romani AM. Role of cellular magnesium in human diseases. *Austin J Nutr Food Sci*. 2014 Nov 18;2(10). [PMID: 25839058]
2. Swaminathan R. Magnesium metabolism and its disorders. *Clin Biochem Rev*. 2003 May;24(2):47-66. [PMID: 18568054]
3. Seelig MS. Consequences of magnesium deficiency on the enhancement of stress reactions; preventive and therapeutic implications (a review). *J Am Coll Nutr*. 1994 Oct;13(5):429-46. [PMID: 7836621]
4. Vink R, Nechifor M, eds. Magnesium in the Central Nervous System. Adelaide, South Australia: University of Adelaide Press; 2011. <https://www.adelaide.edu.au/press/titles/magnesium/magnesium-ebook.pdf>. Accessed September 26, 2016.
5. Galland L. Magnesium, stress and neuropsychiatric disorders. *Magnes Trace Elem*. 1991-1992;10(2-4):287-301. [PMID: 1844561]
6. Nielsen FH. Effects of magnesium depletion on inflammation in chronic disease. *Curr Opin Clin Nutr Metab Care*. 2014 Nov;17(6):525-30. [PMID: 25023192]
7. Kramer JH, Spurney C, Iantorno M, et al. Neurogenic inflammation and cardiac dysfunction due to hypomagnesemia. *Am J Med Sci*. 2009 Jul;338(1):22-27. [PMID: 19593099]
8. Song KH et al. Effectiveness of Sodium Picosulfate/Magnesium Citrate (PICO) for Colonoscopy Preparation. *Ann Coloproctol*. 2014 Oct;30(5):222-7.
9. Turney BW, Appleby PN, Reynard JM, Noble JG, Key TJ, Allen NE. Diet and risk of kidney stones in the Oxford cohort of the European Prospective Investigation into Cancer and Nutrition (EPIC). *Eur J Epidemiol*. 2014 May;29(5):363-9.
10. Riley JM, Kim H, Averch TD, Kim HJ. Effect of magnesium on calcium and oxalate ion binding. *J Endourol*. 2013 Dec;27(12):1487-92.
11. Nielsen FH, Johnson LK, Zeng H. Magnesium supplementation improves indicators of low magnesium status and inflammatory stress in adults older than 51 years with poor quality sleep. *Magnes Res*. 2010 Dec;23(4):158-68. [PMID: 21199787]
12. Chacko SA, Sul J, Song Y, et al. Magnesium supplementation, metabolic and inflammatory markers, and global genomic and proteomic profiling: a randomized, double-blind, controlled, crossover trial in overweight individuals. *Am J Clin Nutr*. 2011 Feb;93(2):463-73. [PMID: 21159786]
13. Bullarbo M, Ödman N, Nestler A, et al. Magnesium supplementation to prevent high blood pressure in pregnancy: a randomised placebo control trial. *Arch Gynecol Obstet*. 2013 Dec;288(6):1269-74. [PMID: 23715924]
14. Roffe C, Sills S, Crome P, et al. Randomised, cross-over, placebo controlled trial of magnesium citrate in the treatment of chronic persistent leg cramps. *Med Sci Monit*. 2002 May; 8(5):CR326-30. [PMID: 12011773]

***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.**

Distributed by: Adaptogen Research
625 Barksdale Road, Suite 113
Newark, DE 19711