

MagCitrato Powder

Supports GI Regularity and Sleep*

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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.

MagCitrato Powder provides 300 mg of magnesium per 1-scoop serving in a convenient lemon-flavored powdered delivery. It mixes easily in water and offers titration flexibility when lower or higher doses are needed. Magnesium citrate helps promote colonic motility and bowel relaxation and regularity.* It also supports restful sleep due to its relaxing properties.* MagCitrato Powder may support individuals with occasional constipation when fiber alone is insufficient in moving bowels or those with difficulty sleeping.*

According to epidemiological studies, magnesium intake in the U.S. has decreased significantly from 500 mg per day to 175 mg to 225 mg per day, and individuals following a Western-style diet consume less than 30% to 50% of the RDA for magnesium, which is 320 mg to 420 mg per day for adults.¹ Magnesium insufficiency is common in the U.S. due to the wide use of demineralized water and soil and the increased consumption of processed food.¹ Magnesium is also depleted by stress, excessive alcohol consumption, gastrointestinal diseases, diabetes, and certain medications.^{1,2} Dietary magnesium is inversely associated with the incidence of diabetes, hypertension, heart disease, and metabolic syndrome.³

Magnesium is an essential mineral that serves as an enzyme cofactor for more than 300 biochemical reactions in the body, including those of glycolysis, the first step in harnessing energy from carbohydrates. Magnesium follows potassium as the second most abundant intracellular cation (positively charged electrolyte) in the body. The adult human body contains approximately 25 grams of magnesium, with more than 60% being found in the skeleton. Muscle tissue contains approximately 27% of total body magnesium, with the bulk of the balance found in other intracellular areas, and less than 1% occurring in the blood.⁴

Magnesium is a structural component of the hydroxyapatite mineral matrix of bone, a natural calcium channel blocker, muscle relaxant, facilitator of calming effects upon the nervous system, and a required element for electrolyte balance and proper functioning of sodium-potassium pumps. Magnesium plays a crucial role in supporting physical strength and mobility, muscle relaxation, neurological health, cardiac function, and psychological balance. The role of magnesium as an enzyme cofactor for processes that generate adenosine triphosphate (ATP) underlie its importance for maintaining energy levels and metabolic efficiency.

Highlights

- 300 mg of magnesium (as magnesium citrate) per scoop
- Pleasant lemon-flavored powder
- No fructose, sucrose, or artificial sweeteners; sweetened with organic stevia leaf extract
- Convenient powdered delivery for titration flexibility
- Gluten-free, dairy-free, and soy-free
- Non-GMO

Superior Bioavailability

A small randomized, double-blind, placebo-controlled parallel study compared the relative bioavailability of three forms of magnesium at a daily dose of 300 mg for 60 days in healthy subjects. Urine, blood, and saliva samples were assessed at baseline and after 2 hours and 60 days of either magnesium amino acid chelate, citrate, or oxide supplementation. As assessed by 24-hour urinary excretion, supplementation of the organic citrate and amino acid chelate forms showed greater absorption than magnesium oxide. After acute and chronic supplementation, magnesium citrate led to the greatest serum magnesium concentration compared with the other two forms, suggesting magnesium citrate is preferable due to its superior bioavailability.^{5,6}

Bowel Regularity and Motility

As an osmotic agent, MagCitrato Powder may be helpful in cases of occasional constipation on a short-term basis.* Magnesium citrate can be used to help promote bowel relaxation when fiber alone is insufficient by increasing fluid in the intestines to make stools softer and easier to pass. Magnesium citrate is commonly used as a laxative and prior to some surgical or bowel procedures (e.g., colonoscopy), as it has been shown to be effective in cleansing out the colon.^{7,8} Excess magnesium can result in bowel intolerance, such as diarrhea.⁹

Benefits*

- Supports colonic motility
- Promotes bowel regularity
- Supports relaxation and restful sleep
- Promotes body magnesium status

Supplement Facts

Serving Size 4 grams (approx. one scoop)
Servings Per Container 60

Amount Per Serving		% Daily Value
Magnesium (as Magnesium Citrate)	300 mg	71%

Other Ingredients: Natural flavor, tapioca dextrin, certified organic stevia leaf extract powder (*Stevia rebaudiana*), silicon dioxide.

Sleep

Magnesium is a natural N-methyl-D-aspartic acid (NMDA) antagonist and gamma-aminobutyric acid (GABA) agonist; these have a relaxant effect and facilitate sleep.⁹ Low magnesium intake can be associated with poor quality sleep. Supplementing with magnesium before bedtime may support a more restful night sleep with less waking during the night. In a study of elderly patients with insomnia, 500 mg of daily magnesium supplementation for 8 weeks led to improved subjective and objective insomnia measures. Compared to the placebo group, the magnesium group had significant increases in sleep time, sleep efficiency, serum renin, and melatonin concentrations, and also significant reductions in sleep onset latency and cortisol concentrations.^{9,10} There was also a reduction in early morning awakening compared to the placebo.¹⁰ A systematic review and meta-analysis of three randomized controlled trials with 151 older adults showed statistically insignificant improvements in total sleep time and sleep onset latency compared to a placebo.¹¹

Restless leg syndrome (RLS) is characterized by uncontrollable urges to move the limbs and sometimes leg cramping that can make it difficult to fall asleep or cause a disturbance to sleep. Research shows mixed results for magnesium and RLS. An open clinical trial and polysomnographic study showed magnesium supplementation decreased periodic limb movements during sleep and improved overall sleep efficiency from 75% to 85% compared to the placebo group.⁹ More clinical trials are needed to further elucidate the role of magnesium in supporting sleep and RLS.

In a small placebo-controlled, randomized crossover study, researchers examined the effect that Mg(2+) supplementation (as an effervescent tablet) had on the sleep of 12 elderly subjects by using electroencephalogram (EEG) and nocturnal hormone secretion. Two treatment intervals of 20 days each were separated by a 2-week washout period; magnesium was administered in a creeping dose of 10 mmol (24.3 mg) and 20 mmol (48.6 mg) for 3 days each, followed by 30 mmol (73 mg) for 14 days. The results showed a significant increase in slow-wave sleep, delta power, and sigma power; renin and aldosterone significantly increased during the total night and second half of the night, respectively; and cortisol decreased significantly. The researchers suggested that oral magnesium supplementation may partially reverse age-related nocturnal neuroendocrine and sleep EEG changes in humans due to its effect on the hypothalamic-pituitary-adrenal axis and the renin-angiotensin-aldosterone system.¹²

Other Applications

The status of magnesium and other trace elements in the body are factors for nephrolithiasis or kidney stone formation. Reviews demonstrate that in addition to low urine pH and flow, excessive calcium, oxalate, urate, cystine, and certain bacteria promote the growth of renal stones, whereas magnesium, citrate, and pyrophosphate are shown to inhibit their formation.^{13,14} Low urinary concentration of magnesium was shown to be a risk factor for stone formation; however, higher magnesium levels in human urine reduced the oxalate concentration available for calcium oxalate precipitation and crystallization.¹⁴ Dietary magnesium supplementation was also shown to inhibit the absorption of dietary oxalate from the gut lumen.¹³

Recommended Use: Take 4 grams (approximately 1 scoop) per day or as directed by your health-care practitioner.

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

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

Dosing recommendations are given for typical use based on an average 150 pound healthy adult. Healthcare 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.

***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.**

To contact Designs for Health, please call us at (860) 623-6314, or visit us on the web at www.designsforhealth.com.

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