



NATUROPATHIC ESSENTIALS

Essential Magnesium

RECOMMENDED USE

- Helps in the development and maintenance of bones and teeth
- Helps in tissue formation
- Helps to maintain proper muscle function
- Helps the body's ability to metabolize carbohydrates, fats and proteins

Magnesium is a mineral used by every organ in the body, especially the heart, muscles, and kidneys. According to a 2012 Canadian Community Health Survey (CCHS), approximately 30% of males and 35% of females ages 19 to 30 are deficient in magnesium.¹ Magnesium insufficiency has been implicated in a wide range of health challenges. Most magnesium supplements use only a single source of magnesium, which can easily overwhelm a single pathway of absorption. Essential Magnesium takes advantage of unique pathways of absorption by providing magnesium as di-magnesium malate, magnesium bisglycinate, magnesium citrate and magnesium glycinate for enhanced absorption, improved utilization and gastrointestinal comfort. Some individuals taking other forms of magnesium supplements experience GI side effects, including gas, bloating, diarrhea, constipation or a combination of these symptoms. The forms of magnesium used in Essential Magnesium preserve GI comfort while maximizing absorption and restoring magnesium levels in the body.

Overview

Magnesium is an abundant mineral in the body and is found naturally in many foods, like green leafy vegetables. It is also found in over-the-counter medications, such as laxatives. According to the 2012 survey, more than 34% of Canadians over age 19 consumed magnesium in quantities below the Estimated Average Requirement (EAR), with the prevalence of inadequate intakes rising to greater than 40% in half the adult age and sex groups.¹ Intracellular magnesium levels are decreased by excessive intake of alcohol, salt, coffee, phosphoric acid found in sodas, diets high in calcium and high stress levels.² Because of the widespread nature of magnesium deficiencies, adequate daily intake of magnesium is critical for proper hydration, maintenance of proper muscle function and optimal bone mineral density.^{3,4}

Bioavailability: The Mineral Chelate Difference

Signs of inferior mineral supplements include the use of cheap, poorly absorbed, rock-salt minerals like calcium carbonate and magnesium oxide (See Figure 1). These mineral forms slow and limit absorption, relying on adequate stomach acid to release magnesium ions which then enter the body via passive diffusion. And, because they tend to remain in the intestines longer, these forms of mineral supplements can cause intestinal distress such as constipation (calcium carbonate) or diarrhea (magnesium oxide).

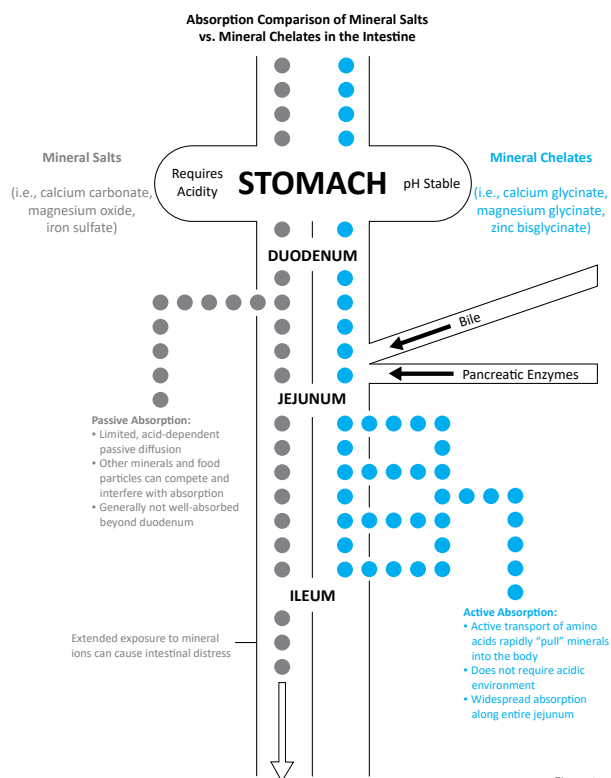
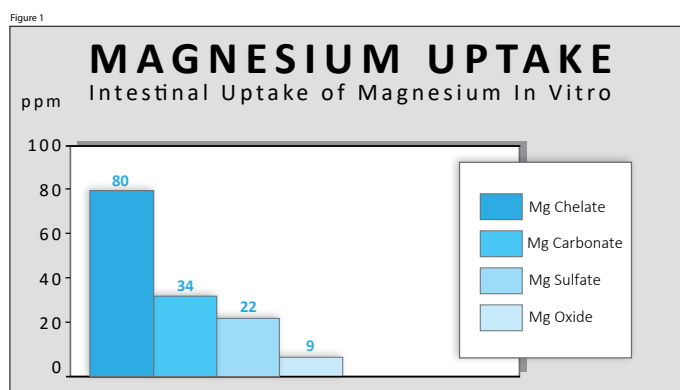


Figure 1

Essential Magnesium provides the additional benefit of highly absorbed, Albion® magnesium chelates. Albion® is the world leader in manufacturing highly bioavailable mineral chelates, a specialized form of minerals bound to amino acids. This patented process creates organic mineral compounds which use active absorption mechanisms in the gastrointestinal tract to greatly enhance mineral absorption. In an in vitro magnesium comparison study reported by Graff et al. at Weber State University, evidence suggested that Albion®'s magnesium amino acid chelate had (See Figure 1)⁵:

- 8.8 times greater absorption than magnesium oxide
- 5.6 times greater absorption than magnesium sulfate
- 2.3 times greater absorption than magnesium carbonate



In addition, other in vitro comparison studies have shown significantly superior absorption of magnesium chelates compared to other mineral forms:

- Multiple double blind studies found urinary excretion of magnesium chloride higher than magnesium glycinate.⁶⁻⁷
- Magnesium glycinate is shown to have a reduced laxative effect when compared to other forms of magnesium.⁸

Magnesium chelates are gentle, "gut-friendly" minerals that do not cause diarrhea that often accompanies magnesium oxide and other rock-salt forms. Albion®'s magnesium chelates have extensive clinical research proving their superior bioavailability, biologic activity, stability, and improved tolerance.

Bone Health

Magnesium is involved in bone formation and influences the activity of osteoblasts and osteoclasts, cells responsible for the breakdown and formation of bone.⁹ Several population-based studies have found positive associations between magnesium intake and the state of bone strength and mineralization in men and women.¹⁰⁻¹¹

Recommended Dose

Adults: Take 2 capsules 1 time per day.

Medicinal Ingredients (per capsule)

Magnesium (Dimagnesium malate, Magnesium citrate USP, Albion™ Minerals Magnesium lysyl glycinate, Magnesium bisglycinate).....117.5 mg

Non-Medicinal Ingredients

Hypromellose, Stearic acid, Magnesium stearate.

References

1. Health Canada, Statistics Canada. Canadian Community Health Survey, Cycle 2.2, Nutrition (2004) - Nutrient Intakes from Food: Provincial, Regional and National Data Tables Volumes 1, 2 & 3 Disk. 2009. Ottawa, Health Canada Publications.
2. Johnson S. The multifaceted and widespread pathology of magnesium deficiency. *Med Hypotheses* 2001; 56(2): 163-70.
3. Ryder KM, Shorr RI, Bush AJ, Kritchevsky SB, Harris T, Stone K, Cauley J, Tylavsky FA. Magnesium intake from food and supplements is associated with bone mineral density in healthy older white subjects. *J AM Geriatr Soc* 2005; 53(11):1875-80.
4. Gobbo LCD, Imamura F, Wu JH, Otto MCO, Chiuve SE, Mozaffarian D. Circulating and dietary magnesium and risk of cardiovascular disease: a systematic review and meta-analysis of prospective studies. *Am J Clin Nutr* 2013; published online May 29, 2013.
5. Graff et al. Magnesium: wide spread benefits. *Albion Research Notes* 1992; 1(2):1.
6. Abrams SA, et al., *Advances in Magnesium Research Nutrition and Health*, Op Cit, 109-114, 2001.
7. Schuette SA, Lashner BA, Janghorbani IY. Bioavailability of Magnesium diglycinate vs. magnesium oxide in patients with ileal resection. *J Parent Ent Nutr*, 18:430-435, 1994.
8. Institute of Medicine (IOM). Food and Nutrition Board. Dietary Reference Intakes: Calcium, Phosphorus, Magnesium, Vitamin D and Fluoride. Washington, DC: National Academy Press, 1997.
9. Schulze MB, Schulz M, Heidemann C, Schienkiewitz A, Hoffmann K, Boeing H. Fiber and magnesium intake and incidence of type 2 diabetes: a prospective study and meta-analysis. *Arch Intern Med* 2007;167:956-65.
10. Rude RK, Singer FR, Gruber HE. Skeletal and hormonal effects of magnesium deficiency. *J Am Coll Nutr* 2009;28:131-41.
11. Tucker KL. Osteoporosis prevention and nutrition. *Curr Osteoporos Rep* 2009;7:111-7.