PRODUCT SPECIFICATIONS





Code: 9255 NPN: 80075249 Size: 120 Vegetarian Capsules Actual Size: 23.02 mm x 8.38 mm

Magnesium Bisglycinate

Helps Maintain Bone and Muscle Function \cdot 200 mg

- Magnesium bisglycinate form is more easily absorbed than salt forms such as magnesium oxide
- Bisglycinate chelated form is less likely to cause laxative effects than salt forms
- Vegetarian capsules provide 200 mg of elemental magnesium per capsule
- Non-GMO and suitable for vegetarians/vegans

PRODUCT SUMMARY

Magnesium helps maintain proper muscle function and bone health. It also supports metabolism, the ability to derive energy from proteins, carbohydrates, and fat. The body's magnesium needs can be increased by stress, an unbalanced diet, coffee and alcohol consumption, and certain medications such as proton-pump inhibitors. As a result, it can be difficult to meet the body's daily magnesium needs through diet alone.

In a randomized, controlled trial, healthy older women were assigned to the treatment group receiving 300 mg of magnesium daily or to a control group. After 12 weeks, the treatment group had significant improvements in physical performance compared to the control group. The authors concluded that supplementation may have a role in preventing age-related physical decline. A double-blind, placebo-controlled trial found that supplementation with 300 mg of magnesium bisglycinate daily for four weeks decreased the frequency and intensity of pregnancy-induced leg cramps. Magnesium is an important factor in muscle mass and repair and has been shown to relieve muscle cramps of various causes. Magnesium is also an important factor for maintaining bone health. Multiple systematic reviews have found a higher intake of magnesium to be associated with both a higher bone mineral density as well as a lower risk of fracture among older adults.



To Place Your Order Email: customerservice@bioclinicnaturals.com Call: 1.888.826.9625 • Fax: 1.877.433.9862







Serving Size: 1 Vegetarian Capsule Servings Per Container: 120

Each Vegetarian Capsule Contains:

[Magnesium Bisglycinate Blend (magnesium bisglycinate, magnesium oxide, glycine)]

Non-medicinal Ingredients: Vegetarian capsule (carbohydrate gum [cellulose], purified water), microcrystalline cellulose, vegetable grade magnesium stearate (lubricant), silica.

Recommended Adult Dose: 1 capsule per day or as directed by a health care practitioner.

Recommended Use: Helps maintain normal muscle function, including the heart muscle. Helps in tissue formation and in the development and maintenance of bones and teeth. Helps maintain the body's ability to metabolize nutrients.

Caution: Keep out of reach of children.

Contraindications: None known, though medical supervision is needed for individuals with renal disease.

Drug Interactions: When taken together, magnesium can decrease the absorption of levodopa/carbidopa, quinolone antibiotics, and tetracycline antibiotics, and can increase the absorption of sulfonylureas. Magnesium levels may be depleted by aminoglycoside antibiotics, amphotericin B, cyclosporine, digoxin, potassium-wasting diuretics, oral contraceptives, foscarnet, sodium phosphates, tacrolimus, and proton-pump inhibitors.

Contains no artificial colours, preservatives, or sweeteners; no dairy, starch, sugar, wheat, gluten, yeast, soy, corn, egg, fish, shellfish, animal products, salt, tree nuts, or GMOs. Suitable for vegetarians/vegans. Sealed for your protection. Do not use if seal is broken. For freshness, store in a cool, dry place.

References available at bioclinicnaturals.com



· GUARANTEED ·

Bioclinic Naturals[®] products are manufactured to meet or exceed current Good Manufacturing Practices (cGMP) of the U.S. Food and Drug Administration (FDA), Health Canada, and the Therapeutic Goods Administration (TGA) of Australia.



PRODUCT OF CANADA Bioclinic Naturals® Canada Burnaby, BC V3N 4T6 bioclinicnaturals.com

FOR PROFESSIONAL USE ONLY. This product is not intended to diagnose, treat, cure or prevent any disease. © All Rights Reserved Bioclinic Naturals[®] 2023. August 15, 2023. Bioclinic Naturals is distributed by Assured Natural Distribution Inc. Head office Assured Natural Distribution Inc. 104 – 3686 Bonneville Place. Burnaby, BC. Canada V3N 4T6 | U.S. Distribution office 14224 167th Avenue S

Head office Assured Natural Distribution Inc., 104 – 3686 Bonneville Place, Burnaby, BC, Canada V3N 4T6 | U.S. Distribution office 14224 167th Avenue SE, Monroe, WA, USA 98272 Customer Service 1-888-826-9625 · Fax 1-877-433-9862 · Email customerservice@bioclinicnaturals.com

PRODUCT SPECIFICATIONS





Code: 9500 NPN: 80090179 Size: 120 g powder

Magnesium Bisglycinate

Maintains Proper Muscle Function Supports Energy Metabolism · 200 mg

- Magnesium bisglycinate form is more easily absorbed than salt forms such as magnesium oxide
- Bisglycinate chelated form is less likely to cause laxative effects than salt forms
- Powder form allows for easy and convenient dosing away from food
- Non-GMO and suitable for vegetarians/vegans
- Sugar free with pleasant taste from citric acid

PRODUCT SUMMARY

Magnesium helps maintain proper muscle function. It also supports metabolism, the ability to derive energy from proteins, carbohydrates, and fat. Magnesium helps normalize blood pressure and fasting plasma glucose, improves insulin sensitivity, and decreases risk of developing diabetes mellitus type 2, along with reducing blood pressure, hyperglycemia, and triglycerides in metabolic syndrome. Magnesium needs can be increased by stress, an unbalanced diet, coffee and alcohol consumption, and certain medications such as proton-pump inhibitors. As a result, it can be difficult to meet the body's daily magnesium needs through diet alone.

In a randomized, controlled trial, healthy older women were assigned to the treatment group receiving 300 mg of magnesium daily or to a control group. After 12 weeks, the treatment group had significant improvements in physical performance compared to the control group. The authors concluded that supplementation may have a role in preventing age-related physical decline. A double-blind, placebo-controlled trial found that supplementation with 300 mg of magnesium bisglycinate daily for four weeks decreased the frequency and intensity of pregnancy-induced leg cramps. Magnesium is an important factor in muscle mass and repair, and has been shown to relieve muscle cramps of various causes.



To Place Your Order Email: customercare@assurednatural.com **Call:** 1.888.826.9625 • **Fax:** 1.844.384.7503







Serving Size: 1 serving (2.4 g) Servings per Container: 50

Each Serving (2.4 g) Contains:

Non-medicinal Ingredient: Citric acid.

Recommended Adult Dose: 1 serving (2.4 g) per day or as directed by a health care practitioner. Mix well in 250 mL of water until fully dissolved. (Typical dose in clinical trials is 250–500 mg/qd.).

Recommended Use: Magnesium helps maintain proper muscle function, including the heart muscle. Helps maintain the body's ability to metabolize nutrients. Helps in tissue formation and in the development and maintenance of bones and teeth. A factor in the maintenance of good health.

Caution: Keep out of the reach of children. Individuals with impaired renal function should use this product under medical supervision to monitor the potential for hypermagnesemia.

Drug Interactions: When taken together, magnesium can decrease the absorption of levodopa/carbidopa, quinolone antibiotics, and tetracycline antibiotics, and can increase the absorption of sulfonylureas. Magnesium levels may be depleted by aminoglycoside antibiotics, amphotericin B, cyclosporine, digoxin, potassium-wasting diuretics, oral contraceptives, foscarnet, sodium phosphates, tacrolimus, and proton-pump inhibitors.

Contains no artificial colours, preservatives, or sweeteners; no dairy, starch, sugar, wheat, gluten, yeast, soy, corn, egg, fish, shellfish, animal products, salt, tree nuts, or GMOs. Suitable for vegetarians/vegans. Sealed for your protection. Do not use if seal is broken. For freshness, store in a cool, dry place.

References available at bioclinicnaturals.com



· GUARANTEED ·

Bioclinic Naturals[®] products are guaranteed to meet or exceed Good Manufacturing Practices (GMP) of the U.S. Food and Drug Administration (FDA), Health Canada, and the Therapeutic Goods Administration (TGA) of Australia.



PRODUCT OF CANADA Bioclinic Naturals® Canada Burnaby, BC V3N 4T6 bioclinicnaturals.com

FOR PROFESSIONAL USE ONLY. This product is not intended to diagnose, treat, cure or prevent any disease. [®] All Rights Reserved Bioclinic Naturals[®] 2020. May 14, 2020. 9224602 Bioclinic Naturals is distributed by Assured Natural Distribution Inc. Head office Assured Natural Distribution Inc., 104 – 3686 Bonneville Place, Burnaby, BC, Canada V3N 4T6 | U.S. Distribution office 14224 167th Avenue SE, Monroe, WA, USA 98272

Customer Service 1.888.826.9625 · Fax 1.844.384.7503 · Email customercare@assurednatural.com

Magnesium Bisglycinate – Helps Maintain Bone and Muscle Function

About Magnesium Bisglycinate

- Over 600 enzymes in the body require magnesium as a cofactor for optimal activity.¹
- Magnesium is needed for a wide range of cellular processes, ranging from energy production and DNA synthesis, to signalling in muscle and nerve cells, and the regulation of blood pressure.²
- Despite the many requirements for magnesium, dietary intake of this important mineral often falls short. Estimates from a national cohort in the United States suggest that two-thirds of all adults have an intake below the recommended amount.³
- Magnesium bisglycinate is a chelated form of this mineral that is highly bioavailable and well-tolerated. It is more easily absorbed than other forms, such as magnesium oxide, and is less likely to have the laxative effect of other forms.^{4,5}
- Muscle and bone health are both impacted by an insufficient magnesium intake. Among healthy older women, for example, supplementation with 300 mg of magnesium per day was associated with significant improvements in performance compared to the control group. This finding suggests that magnesium may play a role in preventing age-associated decline.⁶
- Magnesium is important for muscle health and repair. It has been shown to relieve muscle cramps from various causes, including pregnancy-induced muscle cramps.^{7,8}
- Magnesium is also both important to bone health and a major component of bone, with about two-thirds of all magnesium stored in the bone. Both osteoblasts and osteoclasts (bone-building and remodelling cells) rely on sufficient magnesium. In a large systematic review of nearly 120,000 participants, a low magnesium intake was associated with a 58% greater risk for bone fracture.⁹

How to Use Magnesium Bisglycinate

- *Capsules:* Take 1 capsule daily or as directed by a health care practitioner.
- *Powder:* Take 1 serving (2.4 g) per day or as directed by a health care practitioner. Mix well in 250 mL of water until fully dissolved.

Cautions and Contraindications

• Keep out of the reach of children. Individuals with impaired renal function should use this product under medical supervision to monitor the potential for hypermagnesemia.

PATIENT NAME:

PRACTITIONER NOTES:

Drug Interactions

• When taken together, magnesium can decrease the absorption of levodopa/carbidopa¹⁰, quinolone antibiotics¹¹, and tetracycline antibiotics¹², and can increase the absorption of sulfonylureas.¹³ Magnesium levels may be depleted by aminoglycoside antibiotics¹⁴, amphotericin B¹⁵, cyclosporine¹⁶, digoxin¹⁷, potassium-wasting diuretics¹⁸, oral contraceptives¹⁹, foscarnet²⁰, sodium phosphates²¹, tacrolimus²², and proton-pump inhibitors.²³

Quick Tips for Optimal Health

- ☐ Rich sources of dietary magnesium include nuts, green leafy vegetables, legumes, and whole grains. Processed foods are typically very low in magnesium, yet the majority of Americans and Europeans get their magnesium through processed food intake.²
- Magnesium is important for blood sugar regulation. It has been estimated that low blood levels of magnesium are ten times more common among people with very poor blood sugar control than healthy individuals.²⁴
- Stretching is helpful for the treatment of exercise-associated muscle cramps. While stretching is often recommended as a prophylaxis for cramps, the research does not show a clear benefit.²⁵
- Staying well-hydrated is associated with a lower risk for exercise-associated muscle cramps, and sweating more heavily increases their likelihood. It's also possible that fatigue and poor conditioning (or increases in intensity) may present the highest risk for muscle cramps.²⁵
- Sleep plays a role in muscle function. This was demonstrated using sleep deprivation among healthy athletes, which found that muscle glycogen levels are decreased and performance is impaired without sufficient sleep.²⁶
- Magnesium appears to interact with other nutrients to influence muscle strength. For example, in a large population of older adults, low magnesium was not predictive of handgrip strength overall, but it was predictive among older individuals who also had low vitamin D levels. Indeed, individuals with low vitamin D and low magnesium levels had the greatest loss of handgrip strength.²⁷
- Muscle strength and performance (not muscle mass) are important predictors of bone health and fracture risk in both men and women.²⁸ High-intensity resistance exercise and high-impact training may be the most effective for improving bone health, but should be initiated under supervision.²⁹

3228858

PRACTITIONER CONTACT INFORMATION:

This information is for educational purposes only, and is not intended for self-diagnosis or self-treatment of conditions that should be assessed and treated by your health care practitioner. This product is not intended to diagnose, treat, cure, or prevent any disease. © All rights reserved – Bioclinic Naturals® Canada. Bioclinic Naturals Canada is distributed by Assured Natural Distribution Inc.



References

- 1. Dominguez, L., Veronese, N., & Barbagallo, M. (2021). Magnesium and hypertension in old age. Nutrients, 13(1), 139.
- 2. Dominguez, L.J., Gea, A., Ruiz-Estigarribia, L., et al. (2020). Low dietary magnesium and overweight/obesity in a Mediterranean population: A detrimental synergy for the development of hypertension The SUN Project. Nutrients, 13(1), 125.
- 3. Tarleton, E.K., Kennedy, A.G., Rose, G.L., et al. (2020). Relationship between magnesium intake and chronic pain in U.S. adults. Nutrients, 12(7), 2104.
- 4. Schuette, S.A., Lashner, B.A., & Janghorbani, M. (1994). Bioavailability of magnesium diglycinate vs magnesium oxide in patients with ileal resection. J Parenter Enteral Nutr, 18(5), 430-5.
- 5. Siebrecht, S. (2013). Magnesium bisglycinate as safe form for mineral supplementation in human nutrition. OM & Ernahrung, 144
- 6. Veronese, N., Berton, L., Carraro, S., et al. (2014). Effect of oral magnesium supplementation on physical performance in healthy elderly women involved in a weekly exercise program: A randomized controlled trial. Am J Clin Nutr, 100(3), 974-81.
- 7. Supakatisant, C., & Phupong, V. (2015). Oral magnesium for relief in pregnancy-induced leg cramps: A randomised controlled trial. Matern Child Nutr, 11(2), 139-45.
- 8. Welch, A.A., Kelaiditi, E., Jennings, A., et al. (2015). Dietary magnesium is positively associated with skeletal muscle power and indices of muscle mass and may attenuate the association between circulating C-reactive protein and muscle mass in women. J Bone Miner Res, 31(2), 317-25.
- 9. Dominguez, L.J., Veronese, N., Ciriminna, S., et al. (2023). Association between serum magnesium and fractures: A systematic review and meta-analysis of observational studies. Nutrients, 15(6), 1304.
- 10. Kashihara, Y., Terao, Y., Yoda, K., et al. (2019). Effects of magnesium oxide on pharmacokinetics of L-dopa/carbidopa and assessment of pharmacodynamic changes by a model-based simulation. Eur J Clin Pharmacol, 3, 351.
- 11. Imaoka, A., Hattori, M., Akiyoshi, T., et al. (2014). Decrease in ciprofloxacin absorption by polyvalent metal cations is not fully attributable to chelation or adsorption. Drug Metab Pharmacokinet, 29(5), 414-8.
- 12. Sompolinsky, D., & Samra, Z. (1972). Influence of magnesium and manganese on some biological and physical properties of tetracycline. J Bacteriol, 110(2), 468-76.
- 13. Neuvonen, P., & Kivisto, K. (1991). The effects of magnesium hydroxide on the absorption and efficacy of two glibenclamide preparations. Br J Clin Pharmacol, 32(2), 215.
- 14. L'Hommedieu, C.S., Nicholas, D., Armes, D.A., et al. (1983). Potentiation of magnesium sulfate-induced neuromuscular weakness by gentamicin, tobramycin, and amikacin. J Pediatr, 102(4), 629-31.
- 15. Karimzadeh, I., Heydari, M., Ramzi, M., et al. (2016). Frequency and associated factors of amphotericin b nephrotoxicity in hospitalized patients in hematology-oncology wards in the southwest of Iran. Nephrourol Mon, 8(5), e39581.
- 16. Thompson, C.B., June, C.H., Sullivan, K.M., et al. (1984). Association between cyclosporin neurotoxicity and hypomagnesaemia. Lancet, 2(8412), 1116-20.
- 17. Gottlieb, S.S., Baruch, L., Kukin, M.L., et al. (1990). Prognostic importance of the serum magnesium concentration in patients with congestive heart failure. J Am Coll Cardiol, 16(4), 827.
- 18. Dyckner, T., Wester, P.O., & Widman, L. (1988). Effects of per oral magnesium on plasma and skeletal muscle electrolytes patients on long-term diuretic therapy. Int J Cardiol, 19(1), 81-7.
- 19. Palmery, M., Saraceno, A., Vaiarelli, G., et al. (2013). Oral contraceptives and changes in nutritional requirements. Eur Rev Med Pharmacol Sci, 17(13), 1804-13.
- 20. Huycke, M.M., Naguib, M.T., Stroemmel, M.M., et al. (2000). A double-blind placebo-controlled crossover trial of intravenous magnesium sulfate for foscarnet-induced ionized hypocalcemia and hypomagnesemia in patients with AIDS and cytomegalovirus infection. Antimicrob Agents Chemother, 44(8), 2143-8.
- 21. Shaoul, R., Wolff, R., Seligmann, H., et al. (2001). Symptoms of hyperphosphatemia, hypocalcemia, and hypomagnesemia in an adolescent after the oral administration of sodium phosphate in preparation for a colonoscopy. *Gastrointest Endosc*, *53*(6), 650-2.
- 22. Gratreak, B.D.K., Swanson, E.A., Lazelle, R.A., et al. (2020). Tacrolimus-induced hypomagnesemia and hypercalciuria requires FKBP12 suggesting a role for calcineurin. Physiol Rep, 8(1), e14316.
- 23. Turnock, M., Pagnoux, C., & Shore, K. (2014). Severe hypomagnesemia and electrolyte disturbances induced by proton pump inhibitors. J Dig Dis, 15(8), 459-62.
- 24. Oost, L.J., Tack, C.J., & de Baaij, J.H.F. (2023). Hypomagnesemia and cardiovascular risk in type 2 diabetes. Endocr Rev, 44(3), 357-78.
- Miller, K.C., McDermott, B.P., Yeargin, S.W., et al. (2022). An evidence-based review of the pathophysiology, treatment, and prevention of exercise-associated muscle cramps. J Athl Train, 57(1), 5-15.
 Skein, M., Duffield, R., Edge, J., et al. (2011). Intermittent-sprint performance and muscle glycogen after 30 h of sleep deprivation. *Med Sci Sports Exerc*, 43(7), 1301-11.
- 27. Han, S., Gao, Y., & Gan, D. (2022). Associations between dietary magnesium intake and handgrip strength were modified by serum vitamin D level among the US elderly. Front Nutr, 9, 1002634.
- 28. Alajlouni, D.A., Bliuc, D., Tran, T.S., et al. (2023). Muscle strength and physical performance contribute to and improve fracture risk prediction in older people: A narrative review. Bone, 172, 116755.
- 29. Manaye, S., Cheran, K., Murthy, C., et al. (2023). The role of high-intensity and high-impact exercises in improving bone health in postmenopausal women: A systematic review. Cureus, 15(2), e34644.