

Magnesium Forte

Herbs of Gold Magnesium Forte provides high-strength magnesium in organic forms to help prevent dietary magnesium deficiency.

Each tablet contains:

Magnesium amino acid chelate equiv. magnesium.....	150mg
Magnesium citrate equiv. magnesium.....	50mg
Magnesium glycinate equiv. magnesium.....	15mg
Magnesium orotate dihydrate equiv. magnesium.....	5mg
TOTAL ELEMENTAL MAGNESIUM 220mg	

Does not contain egg, milk, peanut, soy, tree nuts, animal products, gluten, lactose or artificial colours, flavours or preservatives.

DIRECTIONS FOR USE

Adults and children over 12 years – Take 1 tablet, once or twice daily, with food, or as directed by your health professional.

FEATURES & BENEFITS

- ✓ Highly bioavailable, organic forms of magnesium
- ✓ Supports muscle health
- ✓ Energy production
- ✓ Cardiovascular health
- ✓ Nervous system function
- ✓ Healthy stress response
- ✓ Bone health
- ✓ Reduces occurrence of mild migraines
- ✓ Relieves menstrual cramps & spasms
- ✓ Suitable for use in pregnancy & breastfeeding
- ✓ High-strength

TECHNICAL INFORMATION

- Magnesium Forte contains high-strength magnesium, from four different sources of highly bioavailable organic magnesium, including magnesium amino acid chelate, citrate, glycinate and orotate.
- A randomised, double-blind, placebo-controlled study in 46 healthy volunteers compared the relative absorbability and bioequivalence of three forms of magnesium – oxide, citrate and amino acid chelate – under acute and chronic conditions. Results showed that organic forms (magnesium citrate and amino acid chelate) were better absorbed than inorganic magnesium oxide¹. Magnesium glycinate is a form of magnesium amino acid chelate, with the magnesium attached to the amino acid glycine, which, as the smallest amino acid, is readily absorbed across the intestinal wall. Magnesium orotate is magnesium attached to orotic acid, which carries the mineral across cell membranes.
- Magnesium is an essential nutrient for over 300 enzymatic processes in the body, required for DNA replication, energy production, muscle contraction and relaxation, cardiac rhythm, vascular tone, DNA and RNA synthesis, carbohydrate, protein and fat metabolism, bone formation, cell signalling, neurological function and brain function.
- Magnesium is found in green leafy vegetables, nuts, seeds, whole grains and cacao. Today's farming and agricultural practices have led to a decline in the magnesium content in foods, with estimates that magnesium content has decreased by as much as 80-90% in vegetables such as lettuce and spinach². Modern dietary practices, such as cooking and bleaching grain, causes a loss of up to 80% of magnesium content. As a result, magnesium deficiency is becoming increasingly prevalent. Magnesium Forte helps prevent dietary magnesium deficiency.
- Under normal dietary conditions, about 30% of ingested magnesium is absorbed. Magnesium homeostasis is maintained via the intestine (facilitating magnesium absorption), the bone (magnesium storage) and the kidneys (excretion). The largest amount of magnesium is stored in bone (50-60%), muscle (20-30%) and other soft tissues (20%).

Muscle health

- Magnesium is an essential nutrient for muscle health and muscle contraction function. Magnesium works with calcium for muscle contraction and relaxation. Magnesium is a calcium antagonist, competing with calcium for binding sites. In the resting state, magnesium is present in concentrations 10 000 times higher than calcium in muscle cells. When the message comes for a muscle to contract, calcium is released from the sarcoplasmic reticulum and binds to troponin C and myosin to induce contraction. When magnesium levels are insufficient, not as much calcium is required to

displace magnesium, resulting in muscle cramps and spasms.

Energy production & glucose metabolism

- Magnesium supports energy production as it is involved in the metabolism of carbohydrates and fats to produce energy and is critical for the manufacture of adenosine triphosphate (ATP) within cells. ATP exists primarily as a complex with magnesium (MgATP).
- Magnesium is an important cofactor in glucose metabolism and glycaemic control. It is essential for insulin receptor phosphorylation and regulates glucose uptake in muscle³.

Nervous system health

- Magnesium supports healthy nervous system function as it is required for nerve conduction. It modulates the hypothalamic pituitary adrenal axis and can reduce the release of adrenalin and noradrenalin, supporting a healthy stress response in the body.

Cardiovascular system health

- Magnesium helps maintain cardiovascular system health and heart health. It is essential for cardiac muscle contraction and production of energy within the heart muscle. Magnesium plays a role in the active transport of calcium and potassium ions across cell membranes, which is essential for nerve impulse conduction, muscle contraction and normal heart rhythm. It is also essential for the contractility of vascular smooth muscle cells in the arterial wall and influences endothelial function, thereby influencing vasodilation and vasoconstriction.

Bone health

- Magnesium supports bone health and assists in the development and maintenance of bones and teeth. Approximately 50-60% of total body magnesium stores reside in the bone, where it binds at the surface of the hydroxyapatite crystals. Magnesium in bones serves as a reservoir of magnesium, which can be released from bone to maintain physiological extracellular concentrations when magnesium intake is low.

Menstrual cramps & spasms

- Magnesium Forte can help relieve symptoms of premenstrual tension including menstrual cramps and spasms and dysmenorrhoea.
- Dysmenorrhoea is defined as painful uterine cramps that precede or accompany menses and is caused by hypercontractility of the myometrium and arteriolar vasoconstriction. Magnesium can help alleviate this via its muscle relaxation and vasodilation activity as well as by inhibiting the biosynthesis of prostaglandin F₂ (PGF₂) alpha.



60 / 120 tablets



¹ Walker, A. F., Marakis, G., Christie, S., & Byng, M. (2003). Mg citrate found more bioavailable than other Mg preparations in a randomised, double-blind study. *Magnesium Research*, 16(3), 183-191.

² Gröber, U. (2019). Magnesium and Drugs. *International Journal of Molecular Sciences*, 20(9), 2094.

³ Gommers, L. M., Hoenderop, J. G., Bindels, R. J., & de Baatj, J. H. (2016). Hypomagnesemia in [...] a vicious circle? [...]. *65(1)*, 3-13.

Magnesium Forte

- A systematic review of three small studies found that overall magnesium supplementation was more effective than placebo for pain relief and reduced the need for additional medication⁴.
- There is no clear dosage recommendations, as studies used different dosage regimes, however, magnesium appears to be effective when taken daily, or taken between one and seven days prior to menses and for the first two or three days of menstruation.
- Current research suggests that at least two months' supplementation are required to see a benefit in other symptoms of premenstrual tension⁵. A randomised, double-blind, placebo-controlled cross over study investigated the effects of 200mg of magnesium as magnesium oxide for 2 menstrual cycles. In the second month, there was a greater reduction ($p=0.009$) in symptoms of PMS-H, including weight gain, swelling of extremities, breast tenderness and abdominal bloating⁶.

Pregnancy

- Magnesium supports a healthy pregnancy as it is an essential nutrient for a range of biological reactions in the body and has a structural role in bone formation.
- Pregnancy increases magnesium requirements. The recommended daily intake of magnesium increases from 320mg to between 350 and 400mg per day during pregnancy.

DRUG INTERACTIONS

- Caution with quinolone antibiotics – magnesium forms insoluble complexes with quinolones, decreasing drug absorption. Take drug 2 hours before or 6 hours after magnesium.
- Caution with tetracycline antibiotics – tetracyclines form insoluble complexes with magnesium, reducing absorption of both. Separate dose by at least 3 hours.
- Caution with bisphosphonates – magnesium can form complexes with drug and reduce absorption. Separate dose by 2 hours.
- Caution with calcium channel blockers and other hypotensive medications – magnesium may have additive effects and enhance the hypotensive effect. Monitor blood pressure.
- Caution with potassium-sparing diuretics – these drugs also have magnesium-sparing properties which could, theoretically, lead to increased magnesium levels. Monitor.
- Caution with skeletal muscle relaxants – magnesium can potentiate effects.

CAUTIONS

- High dose magnesium is contraindicated in people with compromised renal function and heart block.
- Caution in individuals with low blood pressure – magnesium supplementation can lower blood pressure. Monitor.

SIDE EFFECTS

- Magnesium can cause gastrointestinal irritation, nausea and diarrhoea in sensitive individuals, however, usually in much higher doses.

COMPANION PRODUCTS

- Activated B Complex
- Ginseng 4 Energy Gold
- Mind Ease
- Stress Ease

4 Proctor, M., & Murphy, P. A. (2001). Herbal and dietary therapies for primary and secondary dysmenorrhoea. *Cochrane Database of Systematic Reviews*, (2).

5 Parazzini, F., Di Martino, M., & Pellegrino, P. (2017). Magnesium in the gynecological practice: a literature review. *Magnesium Research*, 30(1), 1–7.

6 Walker, A. F., De Souza, M. C., Vickers, M. F., Abeyasekera, S., Collins, M. L., & Trinca, L. A. (1998). Magnesium supplementation alleviates premenstrual symptoms of fluid retention. *Journal of Women's Health*, 7(9), 1157–1165.