

Mg-Zyme™

Magnesium (as magnesium aspartate, magnesium gluconate, and magnesium glycinate)

As a divalent cation essential to all living cells, magnesium (Mg) serves as a key element in cellular metabolism and participates as a required cofactor or an active component in an astounding number of metabolic reactions — over 300 in fact. Although an abundant mineral in living systems, as well as in the food chain, intake is often insufficient to meet physiological needs, as the American diet is laden with highly processed foods, often devoid of magnesium.⁽¹⁾ Compounding this is the fact that bodily absorption of Mg is not efficient, with estimates indicating that of the daily dietary Mg intake, only 30-70% is absorbed.⁽²⁾ In the Western population, a steady decline in the level of dietary Mg has been observed, resulting in a suboptimal daily intake. Corresponding to the decreased Mg intake, an increase in health consequences, including cardiovascular morbidity and mortality, has been noted.⁽³⁾

“The American diet is laden with highly processed foods, often devoid of magnesium.”

In the body, Mg ions (Mg²⁺) play a fundamental role in the transfer, storage and utilization of energy,⁽³⁾ while in mammalian membranes Mg acts as a stabilizing mineral.⁽²⁾ Inside the cell, the level of free Mg²⁺ serves as a control mechanism for numerous processes. In addition to its role in maintaining an adequate supply of purine and pyrimidine nucleotides, both of which are required for cellular proliferation in the synthesis of DNA and RNA,^(4,5) Mg is also an important factor in cellular structure, growth, and reproduction.⁽³⁾ In a physiological

role, it serves to control neuronal activity, cardiac excitability, neuromuscular transmission, muscular contraction, vasomotor tone, as well as blood pressure and peripheral blood flow.⁽³⁾ Numerous enzymes necessary for core energy producing systems, including the Krebs cycle, glycolysis, and the respiratory chain, are Mg dependent.⁽⁶⁾ Thus in essence, energy production itself is highly dependent upon Mg. A deficit in Mg is correlated to a direct reduction in the production of cyclic AMP in the cell, theorized to result via the inhibition of the Mg-dependent adenylate cyclases.⁽⁷⁾ In addition to deficiencies resulting from dietary insufficiencies or low absorption capacity, the literature also documents that specific clinical syndromes may induce a deficiency.^(8,9)

Low levels of Mg are often correlated with an imbalance in other minerals, including calcium, sodium, and potassium, which in turn may have an effect on cardiovascular health. In fact, magnesium deficiency has been said to result in an increased concentration of intracellular Ca²⁺ in cardiac myocytes, which in turn leads to the formation of inflammatory cytokines and reactive oxygen species, resulting in the development of cardiovascular complications.⁽¹⁰⁾ Also documented is the common occurrence of hypomagnesemia in hospitalized patients, which was speculated to



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contribute to cardiac morbidity and mortality.⁽¹¹⁾ A separate study documented an independent association between Mg depletion and an elevated high-sensitivity C-reactive protein (hsCRP) level in children, noting an association between Mg levels and low-grade inflammation.⁽¹²⁾ In fact, Mg may be more vital than previously recognized, as current literature indicates that “new and old findings appear to delineate an increasingly complex and important role for magnesium in many cellular functions.”⁽¹³⁾

In addition to the essentiality noted above, Mg is also necessary for the activity of vitamin D, as the active form of vitamin D, 1, 25-dihydroxycholecalciferol, is not as active in promoting the intestinal absorption of calcium uptake in the absence of Mg.⁽²⁾

Thus, due to its importance in many bodily systems, and the fact that dietary intake is usually inadequate to meet even basic bodily requirements, supplemental Mg is a judicious choice for healthcare practitioners. Mg can safely be incorporated into all patient regimens, as a means to both address deficiency and to promote wellbeing. In addition, the forms of Mg supplied in **Mg-Zyme™** are recognized as having excellent bioavailability and absorption.

References

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Mg-Zyme™ is available in 100-count bottles (#1707).

Supplement Facts

Serving Size: 1 Capsule

	Amount Per Serving	% Daily Value
Magnesium (as magnesium aspartate, magnesium glycinate and magnesium gluconate)	100 mg	25%

Other ingredients: Capsule shell (gelatin and water), organic vegetable culture†, magnesium stearate (vegetable source) and stearic acid (vegetable source).

† Specially grown, biologically active vegetable culture containing naturally associated phytochemicals including polyphenolic compounds with SOD and catalase, dehydrated at low temperature to preserve associated enzyme factors.

This product is gluten and dairy free.

RECOMMENDATION: One (1) capsule each day as a dietary supplement or as otherwise directed by a healthcare professional.

KEEP OUT OF REACH OF CHILDREN

Store in a cool, dry area.
Sealed with an imprinted safety seal for your protection.

Product # 1707 Rev. 05/13

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