AOR CODE: AOR04409

Premium

**Magnesium Synergy**

Specially formulated to promote optimal absorption of magnesium into the cell, where it is needed the most

- Advanced Magnesium Synergy is our most advanced form of magnesium supplement, which contains vitamins and minerals essential for the maintenance of good health
- Helps in energy production and metabolism, making this product essential for many cellular functions and processes
- A source of vitamins and minerals specially formulated to promote the optimal absorption of magnesium, without negative side effects at therapeutic doses

Gluten Free  Vegan  Headache/Migraines  Sports Nutrition

**AOR Code**  **Variant**
AOR04409  250 G POWDER

**Details**
Advanced Magnesium Synergy is specially formulated to promote optimal absorption of magnesium into the cell, where it is needed the most, without negative side effects at therapeutic doses. This formulation helps in energy metabolism and tissue and connective tissue formation and provides electrolytes for the maintenance of good health, while providing support for healthy glucose metabolism and the maintenance of healthy skin and immune function.

Advanced Magnesium Synergy is a factor in the maintenance of good health, helps the body metabolize nutrients and in the development and maintenance of cartilage, bones and teeth. It is a source of antioxidants that helps to fight, protect cells against and reduce the oxidative effect of the oxidative damage caused by free radicals.

**Label Info**

**Discussion**
Magnesium Synergy is specially formulated to promote optimal absorption of magnesium into the cell, where it is needed the most, without negative side effects at therapeutic doses. Magnesium Synergy helps in energy metabolism and tissue and connective tissue formation and provides electrolytes for
the maintenance of good health, while providing support for healthy glucose metabolism and the maintenance of healthy skin and immune function. Magnesium Synergy is a factor in the maintenance of good health, helps the body metabolize nutrients and in the development and maintenance of cartilage, bones and teeth. Magnesium Synergy is a source of antioxidants that helps to fight, protect cells against and reduce the oxidative effect of the oxidative damage caused by free radicals.

Product Variation

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Size</th>
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<tbody>
<tr>
<td>AOR04409</td>
<td>250 G POWDER</td>
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Supplements Facts

<table>
<thead>
<tr>
<th>Serving Size: 2 Scoops (8.3g)</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Magnesium glycinate</td>
<td>150 mg</td>
</tr>
<tr>
<td>Magnesium malate</td>
<td>150 mg</td>
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<tr>
<td>Elemental malic acid</td>
<td>817.6 mg</td>
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<tr>
<td>Glycine</td>
<td>600 mg</td>
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<tr>
<td>Potassium aspartate</td>
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<tr>
<td>Chromium (picolinate)</td>
<td>50 mcg</td>
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<tr>
<td>Manganese bisglycinate</td>
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<tr>
<td>Molybdenum (Na Molybdate)</td>
<td>100 mcg</td>
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<tr>
<td>Zinc (Malate)</td>
<td>15 mg</td>
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<tr>
<td>Selenium (Selenomethionine)</td>
<td>55 mcg</td>
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<tr>
<td>Taurine</td>
<td>650 mg</td>
</tr>
<tr>
<td>Vitamin B6 (Pyridoxal-5-Phosphate)</td>
<td>30 mg</td>
</tr>
<tr>
<td>Copper (Citrate)</td>
<td>1 mg</td>
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Total glycine in product per daily serving size of 2 scoops is 1526.25mg

Non-medical ingredients:

- sodium bicarbonate, citric acid, lemon flavour, monk fruit extract, xylitol, stevia, sodium stearyl fumarate.

Guarantees

AOR™ guarantees that all ingredients have been declared on the label. Contains no wheat, gluten, corn, nuts, peanuts, sesame seeds, sulphites, mustard, soy, dairy, eggs, or any animal byproduct.

Adult Dosage

Take 1-2 scoops daily, with food. Take a few hours before or after taking other medications or natural health products. Mix product well in 250-500mL of liquid (water, juice, etc.) immediately before consumption.

Cautions

Consult a healthcare practitioner for use beyond 6 months. Do not use this product if you are pregnant or breastfeeding. Do not use with other potassium-containing supplements or with potassium-containing salt substitutes.
Source

Chromium: Pharmaceutically synthesized

Copper: Pharmaceutically synthesized

Glycine: Pharmaceutically synthesized

Magnesium (Glycinate, Malate): Pharmaceutically synthesized

Manganese: Pharmaceutically synthesized

Molybdenum: Pharmaceutically synthesized

Potassium: Pharmaceutically synthesized

Selenium (Selenomethionine): Pharmaceutically synthesized

Taurine: Pharmaceutically synthesized

Vitamin B6: Pharmaceutically synthesized

Zinc (L-Carnosine): Pharmaceutically synthesized

Disclaimer

The information and product descriptions appearing on this website are for information purposes only, and are not intended to provide or replace medical advice to individuals from a qualified health care professional. Consult with your physician if you have any health concerns, and before initiating any new diet, exercise, supplement, or other lifestyle changes.

Research Background

Magnesium is a co-factor in more than 300 biochemical reactions in the body. It is necessary for the transmission of nerve impulses, muscle function, temperature regulation, allowing food to be converted to energy, detoxification reactions, providing cardiovascular benefits and for the formation of healthy bones and teeth. Magnesium is one of the most abundant minerals in the human body and is considered critical.
Magnesium plays a critical role in the production and stabilization of ATP. It activates almost all the enzymes of the glycolytic and the tricarboxylic acid (TCA) cycle, which transform fats and sugars into useable energy. Without magnesium, ATP is quickly broken down into the low-energy adenosine diphosphate (ADP) and inorganic phosphate, which cannot deliver energy for cell metabolism and transport. It is also needed for the very structure of mitochondria, the cell’s “power plants;” magnesium deficiency causes swelling and disruption of the cristae (the folds in the inner mitochondrial membrane, where oxidative phosphorylation of ADP into ATP occurs) and leads to a decreased number of mitochondria per cell. Maintaining adequate ATP levels is critical to brain function. The brain stores 20% of total body ATP. Low levels of ATP may cause a decline in cognitive function – the “brain fog” so commonly reported, in which victims find themselves struggling through a dark haze, unable to concentrate and often forgetting simple thoughts and tasks.

Research

Magnesium Deficiency

Deficiencies are highly common, despite the abundance of magnesium available in green leafy vegetables, grains, legumes, nuts and seeds. This may be due to the prevalence of processed food consumption, as refining food depletes its magnesium content by up to 85%. Chronic fatigue, weakness, irritability, muscle stiffness and mood imbalances are signs indicative of deficiency. Other factors which contribute to magnesium deficiency include: certain medications, Crohn’s disease, IBS and celiac disease. Type 2 diabetics may have increased urinary magnesium excretion. Older adults may also be at increased risk for deficiency due to age-related changes in gastrointestinal physiology. Magnesium absorption is also impaired by excessive alcohol, salt and coffee consumption, profuse sweating, prolonged or intense stress and chronic diarrhea.

The Superman of Minerals

Magnesium has been extensively studied, and the literature demonstrates a link between magnesium deficiency and many degenerative diseases. A majority of research indicates that magnesium reduces heart disease risk, high blood pressure, risk of diabetes and stroke, increases energy production, exercise tolerance, bone mineral density and can manage pain and migraines. The following section focuses on why magnesium is crucial.

Bone Health

Magnesium is required for bone mineralization and bone metabolism. It influences the activities of key bone cells, osteoblasts (bone building cells) and osteoclasts (bone destroying cells). Magnesium also affects the concentrations of both parathyroid hormone and the active form of vitamin D, which are major regulators of bone homeostasis. Numerous studies have found positive associations between magnesium intake and bone mineral density in both men and women.

Cardiovascular Health

Studies indicate that high magnesium intake is associated with a low prevalence of cardiovascular events due to its role in managing blood sugar and blood pressure. Magnesium relaxes and maintains
the normal structure of blood vessels and balances electrolytes which are necessary in the maintenance of normal blood pressure. In the six year Atherosclerosis Risk in Communities (ARIC) study of 7,731 individuals, the risk of developing high blood pressure was reduced as blood magnesium levels increased. It is believed that pancreatic beta cells, the cells responsible for insulin secretion, become less responsive in magnesium deficient individuals. In a randomized, double-blind, placebo- controlled, human study, a daily consumption of 638 mg of magnesium for three months, improved beta cell function and resulted in lower blood glucose and insulin levels. Magnesium is also considered a “natural calcium channel blocker”; it helps regulate the amount of calcium in the blood and cells, to prevent hyper-excitability and assists in keeping the blood vessels clear.

**Mental Health**

Magnesium is involved in regulating the excitability of the central nervous system, relaxing muscles and regulating neuronal nitric oxide production. It has been hypothesized that magnesium deficiency is a cause of many major mental health disorders. In a state of deficiency, the brain can become hyperactive and lead to alterations in mood and cause irritability and aggressive behaviour. Magnesium is considered to be one of the most critical minerals for mood regulation.

**The Different Forms of Magnesium**

Various forms of magnesium are available and can make a huge difference on how the mineral is absorbed and its therapeutic effects. For example, magnesium oxide is not well absorbed and can have a laxative effect while magnesium glycinate or malate are much better tolerated and absorbed plus they have addition health benefits since they also contain beneficial amino acids

Magnesium glycinate: Glycine is well known calming amino acid. This combination has good bioavailability and it does not have a laxative effect since glycine is actively transported through the intestinal wall. Due to the calming and relaxing effect of both glycine and magnesium this combination has been used successfully for chronic pain and muscle hyper tonicity.

Magnesium Malate: The combination of magnesium and malic acid has been studied in fibromyalgia patients. Since malate is a substrate in the cellular energy cycle, it can help improve ATP production and there is some preliminary evidence that it may reduce muscle pain and tender points in fibromyalgia patients. This synergetic combination affects painful muscles in a unique way since it provides both fuel for muscle function and relaxes tight muscles

**Magnesium and Vitamin B6**

Vitamin B6, in the active form of pyridoxyl-5’-phosphate (P5P), addresses a common deficiency that can further deplete magnesium levels. P5P is 5 times more absorbable than standard B6. There is also mounting evidence that vitamin B6 aids in magnesium absorption into the cell where it is needed most.

**Magnesium and Potassium**

When there is a magnesium deficiency, there is often the potential for a concurrent potassium deficiency. When magnesium levels are low, more potassium gets eliminated through the kidneys. This is evident, as magnesium is required for potassium to be absorbed in the cells, therefore, without magnesium, potassium is eliminated. A major function of potassium is to maintain the excitability of
nerve and muscle tissue; along with magnesium, potassium plays a key role in maintaining a stable and regular heart rhythm and muscle contraction. It is therefore agreed that if there is a magnesium deficiency, there will potentially be an underlying deficiency as well.

Magnesium and Taurine

The amino acid Taurine plays an important role in many biological events. It helps to regulate ion flow across the membranes of cells (this includes magnesium and potassium ions), produce bile salts (which are essential for fat breakdown and digestion), and helps the enzymes that are involved in the detoxification of potentially harmful compounds in the liver. Studies show that magnesium and taurine share some interchangeable roles in human physiology. Magnesium helps regulate taurine levels, and taurine can fill in for magnesium when it is deficient since they have similar actions. Both help to improve heart health and regulate insulin therefore can minimize the effects of cardiovascular and blood sugar disorders.

Magnesium and Trace Minerals

Advanced Magnesium Synergy contains trace minerals, including zinc, copper, manganese and silicon. These trace minerals are synergistic to the function of magnesium in the production of cellular energy in the mitochondria. In clinical practices, trace minerals have a calming effect to the neurological system and can help relieve muscle and nerve hyper function in cases of restless legs and anxiety.

In addition of being a common deficiency, minerals help to regulate optimal intracellular pH. Magnesium is best retained and intracellularly absorbed in an “metabolic” alkaline environment. An acidic urinary pH promotes magnesium excretion.

Market Trends

Understanding the pivotal role magnesium can play it’s no wonder so many magnesium formulations are available, further even more powders are becoming available due to their convenient dosing and pleasant taste. When considering magnesium supplements it is important to review the factors that influence magnesium levels:

1. Higher intake —magnesium-rich foods, using magnesium bath salts and magnesium oil, or taking oral magnesium supplements

2. Higher absorption of magnesium in the small intestines, in the case of oral and dietary magnesium

3. Lower elimination as waste through the gastrointestinal “GI” tract

4. Lower excretion by the kidneys

Through ongoing investigations, researchers have found that there are some distinct advantages of amino acid forms of magnesium.

(Such as 100% fully reacted Magnesium Glycinate)
1. The glycine molecules occupy the reactive sites of magnesium, reducing its ability to bind with other substances that reduce absorption (such as medications or plant compounds like phytates).
2. When magnesium is bonded to glycine it reduces the binding of water, which could reduce the frequently encountered problem of loose stools.
3. Amino acids like glycine improve the solubility of the whole compound, which improves bioavailability.
4. A portion of magnesium - amino acid compound may be absorbed via the amino acid active transport pathway.
5. An additional portion of magnesium - amino acid compound may be absorbed via active transcellular transport pathway.
6. The presence of an amino acid such as glycine may help lower intestinal acidity towards a pH that would improve passive paracellular transport.

**AOR Advantage**

Magnesium supplementation is essential for the maintenance of good health. Advanced Magnesium Synergy delivers a magnesium formulation that allows for optimal absorption of magnesium to provide optimal benefits for the maintenance of good health.

**References**

1. Cox IM, Campbell MJ, Dowson DI. Red blood cell magnesium levels and the chronic fatigue syndrome (ME); a case control study and a randomised controlled trial. Lancet 1991 Mar 30; 337(8744): 757-60.
Abstract


Taurine and magnesium supplementation enhances the function of endothelial progenitor cells through antioxidation in healthy men and spontaneously hypertensive rats.

Katakawa M, Fukuda N, Tsunemi A, Mori M, Maruyama T, Matsumoto T, Abe M, Yamori Y.

Endothelial damage is repaired by endothelial progenitor cells (EPCs), which are pivotal in preventing cardiovascular diseases and prolonging lifespan. The WHO Cardiovascular Diseases and Alimentary Comparison Study demonstrated that dietary taurine and magnesium (Mg) intake suppresses cardiovascular diseases. We herein evaluate the effects of taurine and Mg supplementation on EPC function and oxidative stress in healthy men and spontaneously hypertensive rats (SHRs). Healthy men received taurine (3?g per day) or Mg (340?mg per day) for 2 weeks. SHRs and Wistar-Kyoto (WKY) rats were housed with high-salt drinking water (1% NaCl). The SHRs received 3% taurinesolution and/or a high-Mg (600?mg per 100?g) diet for 4 weeks. Their peripheral blood mononuclear cells were separated to quantify EPC colony formation. Oxidative stress markers in their peripheral blood were evaluated using a free radical analytical system and a thiobarbituric acid reactive substance (TBARS) assay. Taurine and Mg supplementation significantly increased EPC colony numbers and significantly decreased free radical levels and TBARS scores in healthy men. Taurine and Mg supplementation significantly increased EPC colony numbers and significantly decreased TBARS scores and free radical levels in SHRs. Nicotinamide adenine dinucleotide phosphate oxidase component mRNA expression was significantly higher in the renal cortex of salt-loaded SHRs than in WKY rats, in which it was suppressed by taurine and Mg supplementation. Taurine and Mg supplementation increased EPC colony formation in healthy men and improved impaired EPC function in SHRs through antioxidation, indicating that the dietary intake of taurine and Mg may prolong lifespan by preventing the progression of cardiovascular diseases.


Magnesium in perinatal care and infant health.

Caddell JL.

Magnesium, the second most abundant intracellular cation, is essential for life. The consequences of deficiency are severest in the smallest and youngest members of each species and may include sudden unexpected death. Magnesium deficiency, usually diagnosed by hypomagnesemia, may be congenital, as in premature infants, infants of magnesium-deficient mothers and infants with intrauterine growth retardation. It may be acquired or caused by low magnesium intake, the use of magnesium-wasting drugs, illness provoking gastrointestinal or renal losses of the mineral, or high metabolic demands imposed by catch-up growth or postsurgical healing. Finally, the deficiency may be conditioned, caused by excessive dietary calcium, phosphorus or protein in relation to dietary magnesium, especially during a period of rapid growth or tissue repair. Magnesium therapy is safe when a low dosage is given with monitoring of plasma or serum magnesium levels, with occasional checking of calcium and potassium levels. A parenteral dose of 0.1 ml/kg/day of 50% magnesium sulfate USP (approx. 0.2 mmol/kg/day or 0.4 mEq/kg/day) may be given for 5 dose days. An oral
A dose of 1.0 ml of 10% magnesium chloride solution providing 0.5 mmol/kg/day magnesium or 1.0 ml/kg/day of 10% magnesium chloride USP (0.5 mmol/kg/day) or magnesium magonate (Magonate) 1.0 ml/kg/day (0.45 mmol/kg/day) may be given for extended periods; higher doses may be required for malabsorption syndromes. Hypermagnesemia, which usually results from magnesium overdosage or inadequate renal function, is a potential threat to neonates born to magnesium-treated eclamptic mothers. Most show marked improvement after 36 h of conservative management that includes calcium salts and intravenous infusions of glucose and saline, but obtunded neonates may require dialysis.


Serum magnesium and risk of sudden cardiac death in the Atherosclerosis Risk in Communities (ARIC) Study.

Peacock JM, Ohira T, Post W, Sotoodehnia N, Rosamond W, Folsom AR.

BACKGROUND: We hypothesized that serum magnesium (Mg) is associated with increased risk of sudden cardiac death (SCD).

METHODS: The Atherosclerosis Risk in Communities Study assessed risk factors and levels of serum Mg in a cohort of 45- to 64-year-old subjects in 1987-1989 (n = 14,232). After an average of 12 years of follow-up, we observed 264 cases of SCD, as determined by physician review of all suspected cases. We used proportional hazards regression to evaluate the association of serum Mg with risk of SCD.

RESULTS: Individuals in the highest quartile of serum Mg were at significantly lower risk of SCD in all models. This association persisted after adjustment for potential confounding variables, with an almost 40% reduced risk of SCD (hazard ratio 0.62, 95% CI 0.42-0.93) in quartile 4 versus 1 of serum Mg observed in the fully adjusted model.

CONCLUSIONS: This study suggests that low levels of serum Mg may be an important predictor of SCD. Further research into the effectiveness of Mg supplementation for those considered to be at high risk for SCD is warranted.

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