

OsteoForce™ Supreme



Enhanced bone support featuring milk basic protein

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OsteoForce™ Supreme features the identical comprehensive array of bone-supportive nutrients found in our standard OsteoForce™, along with an increased level of vitamin D (2000 IU) as well as the addition of vitamin K2 and the bone-building protein MBP® (Milk Basic Protein).

Features:

MBP® - support for increasing bone density

MBP® is a multifunctional, natural protein present in trace amounts in human and bovine milk whose main role is to assist the body in its ability to form bone and increase bone density. In adults, bones are fully regenerated approximately every three years. If this bone-forming process is impaired, calcium will not be efficiently absorbed into the bones. MBP® helps reinforce bones, making them more receptive to calcium while working to prevent excess calcium from being liberated from the bones.

MBP® accomplishes this by helping to increase the number of bone-forming osteoblastic cells while regulating the activity of bone-destroying osteoclastic cells, and thus is a significant part of bone's remodeling process. Osteoblasts harden the protein collagen with calcium and other bone-building minerals; osteoclasts use acids or enzymes to dissolve calcium and collagen from bones, releasing the calcium back into the bloodstream.

The Connection Between Osteoporosis and Menopause

Osteoporosis is characterized by a calcium deficiency along with damage from overactive osteoclastic cells.

Women attain peak bone mass by their 30s, and when they reach their 50s, bone mass will decrease. This bone loss during aging and in post-menopausal women results from an imbalance between bone formation and resorption, which leads to an alteration in bone architecture and various degrees of bone fragility. One of the roles of estrogen is to inhibit the bone-destroying function of osteoclasts. During menopause, however, estrogen levels drop, as this hormone's excretion almost completely ceases. This results in an increase in osteoclastic activity, where these cells can dissolve more calcium, leading to increased bone destruction and osteoporosis. Loss of bone strength and an increased number of bone fractures in those with osteoporosis may be associated with a decreased capacity for bone regeneration. Thus, suppressing the excessive activity of osteoclasts is of great importance. Research shows that supplementation with MBP® at 40 mg/day can be effective in increasing bone density, primarily due to the promotion of bone formation and inhibition of bone resorption (*Uenishi K, Osteoporos Int, 2007*).

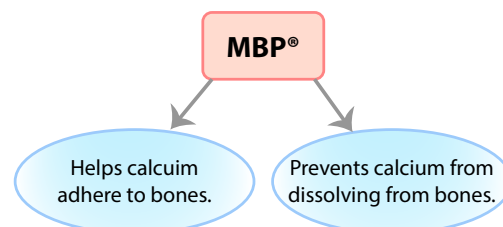
Additional Highlights of OsteoForce™ Supreme

OsteoForce™ Supreme supplies the necessary bone-rebuilding vitamins and minerals in their most effective forms. The zinc, copper, manganese, potassium and boron are from Albion® Advanced Nutrition, the leader in formulating truly chelated minerals with outstanding absorption and bioavailability. Chelate structures contain covalent bonds, setting them apart from traditional ionically-bonded mineral salt forms. Albion® has combined science and technology to create organic molecules in a form the body can readily assimilate. True chelates are not only absorbed better than mineral salts, but they are retained better in body tissue (such as bone). The remaining minerals—calcium and magnesium, also from Albion®—are bound to malic acid – two moles of the mineral bound to one mole of malic acid to form di-calcium malate and di-magnesium malate, respectively. This allows for a greater amount of the elemental minerals to be included in the product, as well as providing superior absorption and greater serum concentration area under the curve (AUC), indicating a greater half-life in the body. Calcium and magnesium in these forms have also been shown to present fewer issues with gastric tolerance, due to the buffering effects of malic acid. Di-magnesium malate has 80% better absorption than magnesium oxide (as evidenced by AUC blood levels), without the potential for loose stools often caused by magnesium oxide. Regarding calcium, di-calcium malate does not present the same risk for adverse effects on the GI tract that come with calcium carbonate. (Calcium carbonate has the potential to neutralize stomach acid, which may impair digestive function and possibly increase the risk of small bowel bacterial overgrowth [SIBO].)

Supplement Facts			
Serving Size 6 capsules			
Servings Per Container 30			
Amount Per Serving	% Daily Value	Amount Per Serving	% Daily Value
Vitamin C (as Calcium Ascorbate)	100 mg 170%	Copper (TRAACS® Copper Glycinate Chelate)	1 mg 50%
Vitamin D (as Cholecalciferol)	2000 IU 500%	Manganese (TRAACS® Manganese Glycinate Chelate)	2 mg 100%
Vitamin K (as Vitamin K1 Phytanadione 1000 mcg; Vitamin K2 Menaquinone-7 50 mcg)	1050 mcg 1310%	Potassium (as Potassium Glycinate Complex)	50 mg 2%
Calcium (as Di-Calcium Malate, Calcium Ascorbate)	811 mg 80%	Milk Basic Protein (MBP®)	40 mg *
Magnesium (as Di-Magnesium Malate)	300 mg 80%	Boron (as Bororganic Glycine)	4 mg *
Zinc (TRAACS® Zinc Glycinate Chelate)	5 mg 35%		

Other Ingredients: Microcrystalline cellulose, vegetable stearate.

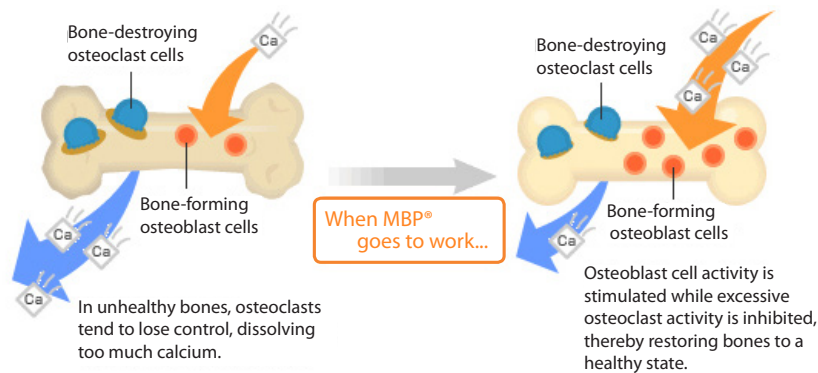
Contains milk (milk proteins).



A higher amount of calcium than that supplied in OsteoForce™ Supreme is not necessary due to the far greater absorption of di-calcium malate in comparison to other forms of this mineral. Additionally, the malate molecule may contribute to cellular energy production as a Krebs cycle intermediate.

Vitamin D (2000 IU) helps to facilitate calcium absorption in the intestine by stimulating the synthesis of calcium-binding protein as well as being involved in bone turnover. Vitamin D deficiency is very common and has been on the rise for quite some time. Contributing factors

include avoidance of sun exposure, certain medications which bind fat (anticonvulsants, steroid drugs, laxatives), and women with low hormone levels, as estrogen and progesterone deficiencies impairs the formation of the active form of vitamin D. Vitamin D status also declines with age, with a decreased capacity of the kidney and liver to hydroxylate vitamin D, as well as reduced dietary intake and diminished absorption from food. In addition, aging skin has a reduced capacity for vitamin D synthesis. A substantial proportion of patients with hip fractures also have osteomalacia, caused by vitamin D deficiency. A deficiency in vitamin D may also be associated with reduced muscular function which may increase risk for falling (*Mowé M, J Am Geriatr Soc. 1999*).



Vitamin K is a coenzyme for matrix Gla protein (MGP), a potent inhibitor of arterial calcification. MGP attracts positive calcium ions, enhancing their incorporation into the hydroxyapatite crystals, thus increasing bone deposition. Low vitamin K levels are associated with low bone mineral density and increased fractures (*Iwamoto J, et al. Curr Drug Saf. 2006*). Vitamin K helps keep the important bone protein, osteocalcin, carboxylated. Undercarboxylated osteocalcin cannot regulate calcium, causing it to freely circulate in the bloodstream, and potentially be deposited in the soft tissues (calcification) such as arterial walls or kidneys. Thus, high levels of undercarboxylated osteocalcin are associated with low bone mineral density and increased hip fractures (*Vergnaud P, J Clin Endocrinol Metab, 1997*).

OsteoForce™ Supreme contains a generous 1050 mcg of vitamin K, with 1000 mcg K1 and 50 mcg K2. While K1, the naturally occurring form of vitamin K in vegetables, does promote optimal function of the Gla proteins it is K2 that is the highly bioavailable form. Poor conversion of K1 to K2 in some people makes the inclusion of K2 very important. K2 (MK-7) is also a long-lasting form of vitamin K, as it has the added feature of metabolizing slowly throughout the day, providing a continuous source of this valuable vitamin.


How to Take

- Take six capsules per day with meals.
- MBP® is derived from the whey portion of milk protein, therefore this product should be well-tolerated by anyone with allergies/sensitivities to lactose or casein. Those with whey allergies/sensitivities may want to support their bone health with our standard OsteoForce™.

References

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