

# Bone-Up®

## With Hydroxyapatite from Australian Bovine Bone



- The most complete nutritional regimen for bones
- Utilizes hydroxyapatite calcium, the same form found in the human body
- Includes the complementary set of vitamins and minerals for skeletal health
- The correct calcium-magnesium ratio for optimum nutrition

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benefit temporarily from higher amounts of magnesium, it has long been known that taking more magnesium than calcium can actually suppress calcium levels and increase bone loss by decreasing production of the thyroid hormone calcitonin. Magnesium intake must not be excessive or it acts as an undesirable calcium blocker.

A proper bone maintenance formula must contain more calcium than magnesium plus a full range of minerals and vitamins requisite to skeletal health. **Bone-Up®** contains these and also is formulated with MK-7 (an advanced form of Vitamin K2), Methylcobalamin (Methyl B12), and Glucosamine to provide additional benefits.

### Who Needs to Supplement Calcium

85% of women over the age of 20 and at least 50% of men from age 35 consume less than the RDI for calcium. People who eat little or no dairy have difficulty obtaining enough calcium. Caffeine, alcohol, sugar, chocolate, and soda pops – particularly colas that are high in phosphorous – deplete calcium. High protein diets contribute large amounts of sulfur and phosphorous which lessen the alkalinity of the bloodstream. In order to maintain proper alkaline pH, parathyroid hormone stimulates the release – and depletion – of calcium from bone and teeth tissue. Therefore, high protein diets require increased calcium intake.

While children may absorb as much as 75% of ingested calcium, adults absorb about 30%. Calcium absorption has long been thought to be stomach-acid dependent, but both stomach acid production and calcium absorption decline with age! Also with age, people consume less calories, and hence, less calcium – compounding the problem because older people need to increase their calcium intake. In women, calcium absorption is particularly affected by menopause and the loss of a significant portion of estrogen production. Estrogen is crucial for maintaining their calcium status.

### Usage

Mineral supplements are best taken with each meal in divided units because smaller amounts taken throughout the day yield a higher percentage of absorption. Take 1 to 6 **Bone-Up®** capsules per day, or as directed by your qualified health consultant.

### References

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### Available in 120 and 240 Count

### Supplement Facts

Serving Size 6 Capsules	Servings Per Container 20	
	Amount Per 6 Capsules	% DV
Vitamin C (Ascorbic Acid)	200 mg	333%
Vitamin D3 (Cholecalciferol)	1000 IU	250%
Vitamin K1 (Phylloquinone)	100 mcg	125%
MK-7 (Vitamin K <sub>2</sub> as Menaquinone-7)	10 mcg	13%
Folic Acid	400 mcg	100%
Methylcobalamin (Methyl B12)	100 mcg	1667%
Microcrystalline Hydroxyapatite (MCHA)	4762 mg	*
Calcium (from MCHA)	1000 mg	100%
Phosphorus (from MCHA)	510 mg	50%
Protein (from MCHA)	1514 mg	3%
Magnesium (as Oxide)	500 mg	150%
Zinc (as Monomethionate)	10 mg	67%
Copper (as Gluconate)	1 mg	50%
Manganese (as Citrate)	1 mg	50%
Glucosamine HCl	300 mg	*
Boron (from Citrate)	3 mg	*

\* Daily Value not established.  
 Other Ingredients: Magnesium stearate and silicon dioxide. Mineral amounts are elemental. Capsule consists of gelatin.

Contains: Soy.

Superior Nutrition and Formulation<sup>SM</sup> by

**Jarrow FORMULAS®**

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certain conditions (such as premenstrual syndrome) might approximately twice the calcium as magnesium (2:1). Though as magnesium human nutrition requires a reverse ratio of half as much calcium more than one, two, or three nutrients.

Some formulas feature a reverse ratio of half as much calcium or zinc and make a mineral trio. But, bones simply require source closest to human bone. Some products add magnesium hydroxyapatite as found in **Bone-Up®** provides a calcium Calcium supplements are available in many forms, but only

### The Truth About the 2:1 Calcium-to-Magnesium Ratio

Calcium supplementation of 1-1.5 grams (1,000-1,500 mg) per day can reduce fracture rates by 50%. Physician-supervised estrogen therapy for women can reduce fractures by another 25% (*Am Family Physician*, 32:107-114, Nov. 1985).

Post-menopausal women lose 0.7% to 2% of their bone per year; men lose 0.5%-0.7%. Between 45 and 75 years of age, women lose 30% of their skeletal structure and men lose 15%.

More than one million fractures occur annually in women 45 years or older. 70% are sustained by women with osteoporosis. 33% of women and 17% of men have hip fractures by age 90. Men have one-quarter the rate of osteoporosis as do women. (FDA Consumer July-Aug. 1995, 21) Hip fractures carry a mortality rate of 12-15% and are the second leading cause of death in people 47-74 years of age. Of the 190,000 hip fractures per year, two-thirds are due to osteoporosis. Osteoporosis costs close to \$5 billion annually, not including lost work. Fractures result in diminished quality of life, and half of these patients who survive can no longer live independently and must enter a nursing home. (Hip fractures occur when the bones become so weak that they can no longer support the person's weight. The bone fractures and then the person falls).

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Whether due to poor nutrition or reduced hormone levels with the onset of aging, the loss of calcium and other

must be "remodeled" or replaced. process called resorption and then other minerals leave the bone in a This means that calcium and skeleton is remodeled every year. Between 2 - 4% of a person's

is one of the major causes of osteoporosis. considerable, and this mechanism be normal while bone loss can be Thus, blood calcium levels can correct blood levels of calcium. and will release calcium into the bloodstream in order to ensure the body. Bones are the body's largest calcium storehouse

The average adult has 1,000-1,200 grams of calcium in the body. Bones are the body's largest calcium storehouse and will release calcium into the bloodstream in order to ensure correct blood levels of calcium. Thus, blood calcium levels can be normal while bone loss can be considerable, and this mechanism is one of the major causes of osteoporosis.

### Bones and Osteoporosis

Hydroxyapatite produces more prolonged calcium balance than soluble calcium salts. It also allows the bone osteoblast cells to be more receptive to its components and to build bone tissue. Furthermore, HA provides both the organic and inorganic constituents found in human bone: hydroxyapatite microcrystals consists of calcium, phosphorus, oxygen, and hydrogen; the trace minerals zinc, strontium, silicon and iron; and proteins, amino acids and aminoglycans.

At the end of the 14 month period, follow-up measurements of the forearm bones showed significant differences: the control group (vitamin D only) showed "significant loss of cortical bone." The calcium gluconate and vitamin D group showed virtually "no change" in bone status. The hydroxyapatite and vitamin D group showed "a significant increase in bone thickness."

In 1982, an important calcium supplementation study was concluded and reported by the Dept. of Medicine and Radiology, Royal Free Hospital in London, England. Fifty-three post-menopausal women diagnosed to have seriously impaired calcium absorption and accelerated bone loss had been separated into three groups and studied for over 14 months. All participants had their forearm bones measured by x-ray radiogrammetry at the start of the study, and everyone received intramuscular injections of 100,000 units of vitamin D<sub>2</sub> each month.

### Bone Mass and Hydroxyapatite

Skeletal health, however, requires more than calcium alone. It also requires magnesium, zinc, manganese, copper, vitamin C, vitamin D<sub>3</sub>, vitamin K, folic acid, boron, and glucosamine (all of which are beneficial for optimizing skeletal health). That's why all of these nutrients are included in the **Bone-Up®** formulation, and it's why we can say with confidence that **Bone-Up®** is indeed the most healthful regimen for bones.

Hydroxyapatite (HA) is the same form of calcium found in human bone tissue. What's more, this is bovine bone subjected to any chemical solvents. Non-ashed bone meal has shown the ability to increase bone mass. High heat, on the other hand, increases the net calcium content, but the special proteins and other beneficial compounds are burned off.

Hydroxyapatite from chemical-free, range-grazed calves less than two years old. (Bones from veal calves are never used)

Jarrow FORMULAS® Bone-Up® is the most complete nutritional regimen for healthy bones. It starts with the finest source of calcium available: Australian bovine bone hydroxyapatite from chemical-free, range-grazed calves less than two years old. (Bones from veal calves are never used)

