

# OSTEOPREV



## CLINICAL APPLICATIONS

- Promotes Healthy Bone Density
- Increases Skeletal Strength
- Improves Bone Remodeling
- Provides a Variety of Foundational Micronutrients For Optimal Bone Health

## MUSCULOSKELETAL HEALTH

OsteoPrev is a formulation specifically designed to help maintain healthy bone mineral density. OsteoPrev contains Albion® TRAACS® chelated minerals for enhanced bioavailability including calcium, magnesium, copper, manganese and molybdenum. OsteoPrev also includes vitamins D and K and phytonutrients to help support bone health and maintenance.

### Overview

Bone mineral density (BMD) is a major determinant of bone mass and is the most commonly measured quality of bone. A number of factors contribute to BMD including lifestyle factors (regular physical activity, not smoking, minimizing stress levels) and maintaining hormonal balance. Consuming a healthy diet and ensuring optimal levels of bone-building vitamins and minerals are key strategies for preserving bone strength.

BMD is determined by a lifelong process called bone remodeling. Bone remodeling occurs when bone tissue is removed from the skeleton (bone resorption) and new bone tissue is formed. *Osteoclasts* are cells involved with breaking down bone, while *osteoblasts* create a protein matrix primarily of collagen, resulting in the remineralization of bone and thereby promoting bone formation. While calcium is an effective starting point for promoting bone health, other nutrients are required for bone mineralization. Nutrients such as calcium, magnesium, boron, vitamin K and D and trace minerals significantly enhance the bone mineralization process. OsteoPrev provides a full spectrum of phytonutrients, vitamins and minerals that optimize the bone mineralization process and help maintain an optimal osteoclast to osteoblast ratio.

### Ipriflavone<sup>†</sup>

Isoflavones are plant-based compounds that resemble estrogen at the molecular level. In the bone tissue, isoflavones act as balanced, estrogen-like hormones which activate osteoblast cells, promoting new bone formation. Isoflavones also increase cell-signaling proteins that may inhibit the bone-absorbing activity of osteoclast cells. Ipriflavone is an isoflavone derivative which has been shown in human and animal research to support bone function and strength. In a double-blind, two-year study which included 149 women (65-79 years old), the control group receiving ipriflavone (200 mg, three times per day) demonstrated increased bone strength along with improvements in bone function and mobility.<sup>1</sup>

### Calcium<sup>†</sup>

Nearly 99 percent of the calcium within the adult skeletal system exists as a complex paired with phosphorus, called hydroxyapatite. In 1990, the USDA published a trial comparing the inexpensive calcium carbonate with calcium citrate-malate, with respect to improved bone mineral density, in post-menopausal women. In this trial, researchers found the citrate-malate form was significantly more effective in supporting bone health than the carbonate form.<sup>2</sup> OsteoPrev is formulated with calcium citrate-malate, as well as calcium hydroxyapatite, to improve calcium absorption and utilization for optimal bone support.

### Magnesium<sup>†</sup>

Magnesium plays a major role in bone formation as approximately 50 % of magnesium found in the body is found in the bone. Magnesium plays numerous roles in bone health

<sup>†</sup> These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

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including increasing calcium absorption, acting as a cofactor for alkaline phosphatase activation, and supporting vitamin D3 conversion in the body. Magnesium deficiency is very common—many Americans fail to acquire even the estimated average requirement (EAR).<sup>3</sup> Magnesium deficiency can also be exacerbated due to factors such as excess consumption of alcohol, salt, coffee, phosphoric acid in sodas, and long-term stress.<sup>4</sup> In a study examining the effects of magnesium in a group of postmenopausal women, supplementation with 250 to 750 mg/day of magnesium for six months, followed by 250 mg/day for six to 18 months, resulted in significant bone-enhancing effects in 71% of the women.<sup>5</sup> This increase was a significant finding that reflects the importance of magnesium supplementation alone (without calcium) as a crucial mineral for supporting bone health.

### Vitamin D3 (Cholecalciferol)<sup>†</sup>

Vitamin D is a steroid vitamin known for its role in supporting bone health and aiding in the absorption of calcium and phosphate from the GI tract. Emerging research shows a direct correlation between bone mineral density and serum levels of 25(OH)D3, the active form of vitamin D.<sup>6</sup> In one 2013 study, 52 overweight men and women with suboptimal vitamin D levels were given either 7,000 IU of cholecalciferol (D3) daily or a placebo for 26 weeks. The vitamin D group significantly increased vitamin D levels in the blood and improved biomarkers of bone health.<sup>7,8</sup>

### Vitamin K1 (Phytonedione) & Vitamin K2 (Menaquinone)<sup>†</sup>

Vitamin K is responsible for synthesizing osteocalcin, a protein involved in calcium transport and properly embedding calcium into bone tissue. Vitamin K has also been shown to decrease the activity of osteoclasts, helping to maintain bone formation and strength.<sup>9</sup> Vitamin K works synergistically with vitamin D3 to improve calcium absorption and helps to bind newly absorbed calcium to the bone matrix. In one study, 244 non-osteoporotic women received either: 200 mcg/day vitamin K; 400 IU/day vitamin D3 plus 1 g/day calcium; combined treatment of vitamin K, D3 and calcium; or placebo in a two-year, double-blind study. Those receiving the combined treatment had significant increases in markers of bone health.<sup>10</sup>

### Boron<sup>†</sup>

Boron supplementation reduced urinary excretion of calcium and magnesium and increased blood levels of 17 beta-estradiol and testosterone in postmenopausal women.<sup>11</sup> Improving boron levels has been shown to support bone health.<sup>12</sup>

### Phosphorus<sup>†</sup>

Phosphorus plays a role in bone mineralization and is a component of hydroxyapatite crystals in bone. A study examining the effects of calcium intake on the absorption of

dietary phosphorus found that, as calcium ingestion increases, phosphorus absorption decreases. Supplementation with a calcium phosphate preparation is recommended for maintaining optimal bone mineral density and preventing calcium-induced phosphorus deficiency.

### Directions

4 capsules per day in divided doses or as recommended by your health care professional.

### Does Not Contain

Gluten, yeast, artificial colors and flavors.

### Cautions

Do not consume this product if you are pregnant or nursing.

<b>Supplement Facts</b> <sup>v8</sup>		
Serving Size 4 Capsules Servings Per Container 30		
<b>4 capsules contain</b>	<b>Amount Per Serving</b>	<b>% Daily Value</b>
Vitamin D3 (as Cholecalciferol)	1,000 IU	250%
Vitamin K (500 mcg K1 as Phytonadione, 25 mcg K2 as Menaquinone-7 (MK-7))	525 mcg	656%
Folic Acid	800 mcg	200%
Calcium (as Calcium Hydroxyapatite, DimaCal® Dicalcium Malate)	250 mg	25%
Phosphorus (as Calcium Hydroxyapatite)	110 mg	11%
Magnesium (as DiMagnesium Malate, Magnesium Citrate USP, TRAACS® Magnesium Lysinate Glycinate Chelate)	150 mg	38%
Selenium (as Selenium Glycinate Complex)	200 mcg	286%
Copper (as TRAACS® Copper Bisglycinate Chelate)	1 mg	50%
Manganese (as TRAACS® Manganese Bisglycinate Chelate)	10 mg	500%
Molybdenum (as TRAACS® Molybdenum Glycinate Chelate)	150 mcg	200%
Ipriflavone	600 mg	*
Boron (as Bororganic™ Glycine)	5 mg	*

\* Daily Value not established

**ID# 567120 120 Capsules**

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## References

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