

Bone-Matrix MCHA

A comprehensive blend of essential nutrients for optimal bone health. Microcrystalline hydroxyapatite delivers calcium in a slow-release fashion alongside phosphorus, collagen and other growth factors to stimulate osteoblasts and support bone mineral density.



GMO Free

Gluten Free

Dairy Free

Soy Free

- Microcrystalline hydroxyapatite (MCHA) complex provides calcium and phosphorus, natural growth factors, collagenous and non-collagenous proteins to deliver calcium in a slow-release fashion, stimulate osteoblast activity and support bone mineral density
- MCHA is sourced from pasture-fed, free-range cattle without the use of antibiotics and growth hormones
- Vitamin K2 is provided as K2Vital®, a soy-free and microencapsulated form that is significantly more stable than other MK-7 materials, in order to activate osteocalcin and matrix GLA-protein
- Vitamin D3 is needed for optimizing calcium absorption from the digestive tract
- Silicon from Living Silica® is provided in the most stable and bioavailable form of monomethylsilanetriol (MMST) to stimulate collagen synthesis and improve bone mineral density
- Zinc, copper, boron and manganese are added as cofactor support for enzymes involved in bone synthesis and calcium regulation

Calcium is one of the most commonly supplemented nutrients in the natural health industry, typically with the intention of supporting bone health. Rightfully so, given that osteoporosis affects at least 1 in 3 Canadian women and 1 out of every 5 Canadian males in their lifetime. This translates to over 2 million Canadians at high risk for bone fractures with a reduced quality of life, decreased mobility and lack of independence. Diet and lifestyle have been shown to play a large role in the progress of the disease, allowing for modifiable and proactive risk mitigation. With this in mind, calcium is by far the most well-known nutrient required for strong and healthy bones.

Calcium can be delivered in many different forms such as citrate, carbonate, bis-glycinate, malate or even in a hydroxyapatite complex. **Microcrystalline Hydroxyapatite (MCHA)** complexes closely mimic the form of calcium found in human bone. Moreover, MCHA offers the advantage of delivering not only calcium but collagenous and non-

collagenous proteins, various growth factors and phosphorus, all compounds necessary to stimulate osteoblasts and support bone structures. Head-to-head studies with other forms of calcium, such as calcium carbonate, have found that MCHA is significantly more effective in supporting bone mineral density markers. Another advantage of MCHA may be its natural slow-release of calcium into the bloodstream, providing better regulation of the mineral that is also heavily involved in cardiovascular function.

As mentioned, MCHA also naturally contains **collagen**, a major structural component of the skeletal system and a protein that comprises almost 30% of the total protein content in the human body. Recent evidence suggests that the integrity of bone tissues can be maintained or improved by supplementing with the glycine-rich protein blend. One study found that hydrolyzed collagen supplementation, on its own, can significantly increase bone mineral density of the spine and femoral necks of postmenopausal women with osteopenia or osteoporosis.

One of the more unique nutrients for bone health is **silicon from Living Silica®**, a mineral with the ability to regulate fibroblast activity and hydroxylation enzymes. Epidemiological evidence supports the role of silicon in preventing osteoporosis while supplemental silicon has been shown to increase the collagen content of bone and improve bone mineral density. The problem is that most forms of silicon are insoluble, unstable and poorly bioavailable. The exception to this grouping of organosilicon molecules is Living Silica® monomethylsilanetriol (MMST), a fully stable and well-absorbed form. Comparative studies have shown that MMST is 3.5-times better absorbed than choline-stabilized orthosilicic acid (Ch-OSA), and 21-times better absorbed than horsetail, bamboo and colloidal

silicon sources, making it an excellent choice for optimal bone health.

Various other vitamins and minerals are needed to support the bone-building process. For example, **vitamin D3** is essential for calcium absorption from the digestive tract, while about 50-60% of all **magnesium** is actually stored in the bones and it is needed to activate enzymes related to vitamin D3 metabolism. **Vitamin K2** has emerged as a key player in the bone health category, with its ability to activate two proteins, osteocalcin and matrix-GLA protein, in order to shunt calcium in the direction of the skeletal system and away from the cardiovascular system. Trace minerals such as **zinc, manganese, copper and boron** also play crucial roles. Zinc and manganese are cofactors for several enzymes involved in bone formation, while boron prevents calcium excretion through the kidneys. Copper is needed to activate enzymes and ultimately incorporate collagen and elastin into the bone structures. Various combinations of all of these nutrients have been shown to positively affect bone mineral density markers.

Cyto-Matrix's **Bone Matrix MCHA** provides the most essential nutrients for bone health in highly stable and effective forms, including MCHA as a rich source of calcium, phosphorus, collagen and growth peptides demonstrated to best improve bone mineral density. The MCHA found in **Bone Matrix MCHA** is sourced from pasture-fed, free-range cattle without the use of antibiotics and growth hormones. In addition, a soy-free vitamin K2, vitamin D3, Living Silica® MMST silicon, zinc, boron, copper and manganese complete the formula for optimal calcium absorption and cofactor support. Quite simply, **Bone Matrix MCHA** is designed to include the most foundational and effective nutrients for the skeletal system.

Each capsule contains

Calcium hydroxyapatite (Durapatite)	426.67mg
Phosphorus	53.3mg
Calcium	133.33mg
Hydrolyzed Collagen (Type I)	106.66mg
Magnesium (Albion™ di-magnesium malate, Albion™ magnesium bis-glycinate chelate)***	41.66mg
Zinc (Albion™ zinc bis-glycinate chelate)***	2.5mg
Manganese (Albion™ manganese bis-glycinate chelate)***	833.33mcg
Silicon (LIVING SILICA® methylsilanetriol)**	1.66mg
Copper (Albion™ copper bis-glycinate chelate)***	333.33mcg
Boron (Albion™ Bororganic glycine)***	116.66mcg
Vitamin K2 (menaquinone-7, K2VITAL®)*	20mcg
Vitamin D3 (Cholecalciferol)	4.16mcg (equiv.to 166.66 IU)

K2VITAL * K2VITAL® is the registered trademark of Kappa Bioscience AS.

LIVING SILICA ** Living Silica is a registered trademark of Silicium Laboratories LLC.

*** Albion™ is a registered trademark of Albion Laboratories.



Non-Medicinal Ingredients

Vegetable-grade magnesium stearate, microcrystalline cellulose, maltodextrin, sucrose, acacia gum, medium chain triglycerides, corn starch, tricalcium phosphate, citric acid, glycine, silica, boric acid. Capsule: hypromellose.

Recommended Use Claim

Helps in the development and maintenance of bones, teeth, hair, skin and nails. Helps to maintain proper muscle function, support immune function and tissue formation. Adequate calcium and vitamin D as part of a healthy diet may help prevent bone loss and osteoporosis.

Directions of Use

Adults - Take 2 capsules, 1 to 3 times a day with food, or as directed by a healthcare professional. Take a few hours before or after taking other medications or natural health products.

Cautions and Warnings

Consult a healthcare professional prior to use, especially if you are taking blood thinners. Do not use if seal is broken. Keep out of reach of children.