

FORTIBONE® — Proven Benefits for Bone Health Metabolism

Specific collagen peptide supplementation shows positive long-term effects on bone mineral density in postmenopausal women

Most elderly people fear the so called “downward spiral” that often begins with fractures, the subsequent lack of physical movement and the inevitable loss of independence. It is estimated that, worldwide, every third woman and one in five men older than 50 will sustain an osteoporotic-induced bone fracture. Experts say that the annual number of these incidences in the EU will rise from 3.5 million in 2010 to 4.5 million in 2025, corresponding to an increase of 28%. Also, it is estimated that approximately 26,300 life-years were lost in the EU in 2010 because of similar injuries.

A growing amount of scientific data suggests that collagen peptides can play a key role as part of a whole diet approach to promoting health, increasing longevity and reducing the risks of a wide range of age-related conditions, including osteoporosis. Now, a new study shows that supplementation with the specific collagen peptides in GELITA's [FORTIBONE®](#) can support bone health by increasing bone mineral density.



Bones need collagen

Usually, when we think of healthy bones, we think of calcium; but our bones need more than just calcium. Bone is a mixture of mineral crystals held in an organic collagen matrix. On their own, the minerals would be extremely brittle and prone to breakage. Collagen makes up 95% of the organic bone matrix and is essential for bone health.

Osteoporosis is a condition characterized by low bone mass and the micro-architectural deterioration of bone tissue that leads to enhanced bone brittleness and an increased risk of fractures. At present, a number of approaches for the prevention and treatment of osteoporosis exist.

Non-pharmacological approaches, such as daily physical activity, smoking cessation and reducing alcohol consumption are important cofactors in maintaining bone health. However, once osteoporosis has been diagnosed, although these basic therapies

may protect against a further loss of bone mineral density, they are unlikely to induce an

improvement. Also, supplementation with calcium and vitamin D is often recommended in osteoporosis management. Yet, it has not been shown to significantly reduce bone fracture risk. Pharmacological treatment includes substances such as bisphosphonates, human monoclonal antibody therapy and selective estrogen receptor modulators — all of which are associated with a number of detrimental side-effects.



Normal bone matrix

Osteoporosis

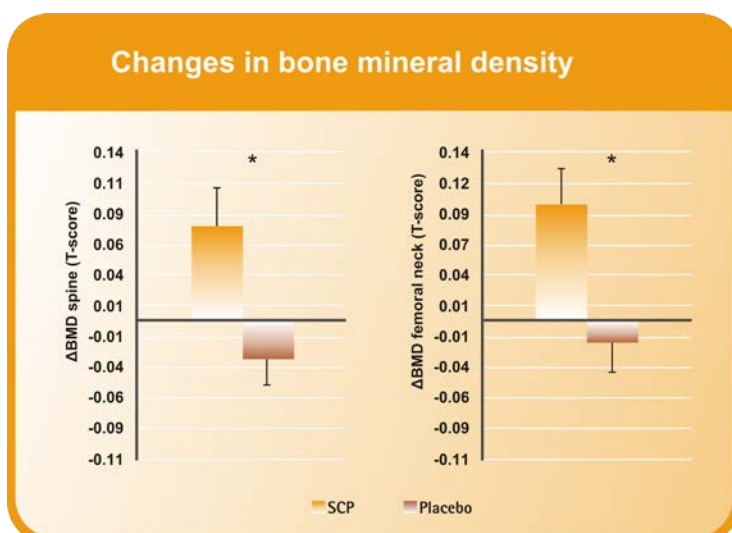
A new study has recently investigated the long-term effects of specific collagen peptide supplementation on bone mineral density (BMD) in postmenopausal women. A total of 102 participants with age-related decline in bone mineral density (a DXA T-score of -1 or lower) and a mean age of 63 years received a daily dose of 5 g of specific collagen peptides (FORTIBONE®) or maltodextrin as a placebo for 12 months.

The primary endpoint of the study was defined as comparing BMD differences in the spine (L1–L4) between both study groups. The second primary outcome was defined as changes in the BMD of the femoral neck. Both BMDs were measured before and after the 12-month study period using dual energy X-ray absorptiometry (DXA). Also, changes in bone metabolism were evaluated using bone biomarkers: the amino-terminal propeptide (P1NP) and C-telopeptide (CTX1) of type I collagen. P1NP was assessed as an indicator of bone formation, whereas CTX1 was measured as marker for bone resorption. Bone turnover was calculated by comparing the number of biomarkers in the plasma samples at the end of the study.

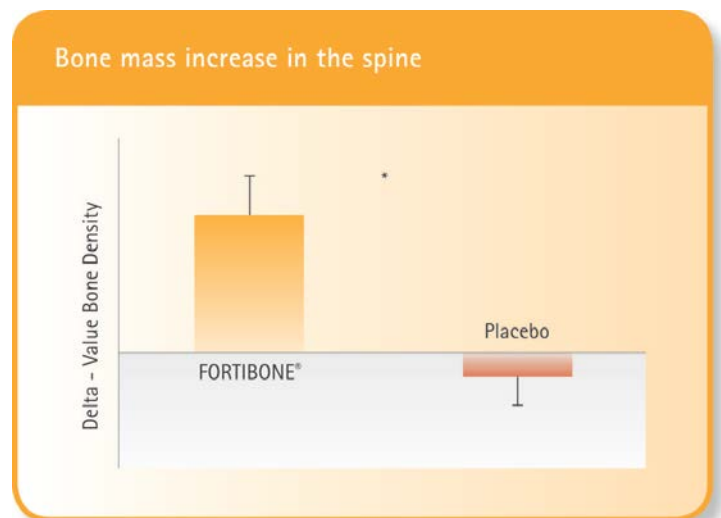
Promising results

The results of this study indicated an anabolic effect, showing a pronounced increase in bone mineral density after FORTIBONE® supplementation. In the femoral neck, BMD increased by 6.7%, whereas in the spine results showed an increase of 3% at the end of the treatment phase. In the same period, bone density in the placebo group decreased

by 1.3% in the spine and 1% in the femoral neck. Hence, at the end of the study, subjects in the collagen peptides group showed significantly increased BMD compared to placebo with a 4.2% higher BMD in the spine and a 7.7% higher BMD in the femoral neck.

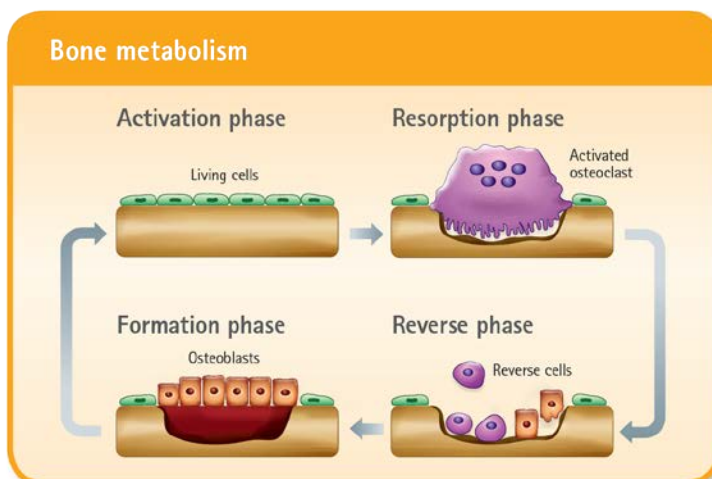


Blood samples were analyzed to evaluate the biomarkers for bone formation and degradation. At baseline, P1NP and CTX 1 levels were similar between both treatment groups. During the course of the study, P1NP significantly increased in the FORTIBONE® group, indicating an escalation of bone formation. In contrast, in the placebo group, no changes in P1NP concentration were determined, whereas the bone degradation marker CTX 1 significantly increased. In the participants that were treated with collagen peptides, no changes in bone degradation markers could be determined. Hence, this new data supports the assumption that FORTIBONE® seems to be an interesting option to counteract bone degeneration and support bone health.



How does it work?

Findings from cell experiments and in vivo studies in rodents have enhanced our knowledge about how collagen peptides may enhance bone formation and increase bone mineral density. First, it has been shown that collagen peptides are rapidly absorbed from the gastrointestinal tract. In addition, collagen peptides are largely absorbed in peptide form and may act as signaling molecules, thereby positively influencing anabolic processes. For connective tissue, in particular, this stimulating effect has previously been



demonstrated. It may be assumed therefore that the stimulation of collagen formation in bone could also be mediated via signaling proteins derived from collagen peptides.

Completely safe with no adverse side-effects

In addition to their scientifically proven efficiency, the collagen peptides in FORTIBONE® also have excellent safety profiles. They are well tolerated and no adverse reactions have been noted. Additionally, there are no known interactions with drugs or other ingredients. As FORTIBONE® comprises various short-chained linear peptides, its allergenic potential is extremely low. With its demonstrated clinical effects and the strong safety profile compared to existing treatment options like bisphosphonates, FORTIBONE® should be on the recommendation list of medical doctors and physicians involved in the treatment of osteoporosis.

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