

## Addressing bone density is not enough... Breakthrough reverses osteoporosis by actually *rebuilding bone*

If you're approaching or past menopause, you're probably already paying a lot of attention to your bones and your risk of osteoporosis. And you're probably doing everything right—well, everything we knew was right before the newest bone-health breakthrough hit the scene.

Let's run down the list:

Weight-bearing exercise? Check.

A healthy diet? Check.

Calcium-regulating supplements (like Tango's Osteophase, recommended several years ago in the Members Alert—see the December 2004 issue in the archive at [www.hsibaltimore.com](http://www.hsibaltimore.com))? Check.

These can all go a long way toward boosting your bone density.

For some time now, osteoporosis has been defined by low bone-mineral content (low bone density). So drugs treating osteoporosis have been developed to preserve the mineral content of bones.

But it turns out that boosting your bone density is only half the picture—in fact, if you're mineralizing your bones without addressing the underlying structure, you could actually be *increasing* your risk of fracture.

Thankfully, this new breakthrough supports the whole spectrum of bone health—by actually helping to rebuild the very structure of your bones. And it's the very first supplement of its kind to do so.

HSI medical adviser Dr. Martin Milner brought this one to me, saying “I have never seen a natural-medicine product better developed to specifically address the underlying limitations preventing bone remodeling and osteoporosis reversal.”

### **Why just increase density when you can actually rebuild bone?**

The strength of your bones is about more than density—it's about the integrity of the bones' architecture—the bone matrix. In fact, after the age of 50, the bone matrix declines before bone density, leaving bones weak and fracture-prone.

And the continued strength of that matrix comes from a process called bone remodeling. Bone is living tissue that is constantly being broken down and rebuilt. Osteoclast cells remove old and damaged bone tissue, then osteoblasts and osteocytes create a new bone matrix—the web-like architecture of bone. This matrix incorporates minerals to give bone its density and hardness. The process ensures your bones' structural integrity. This reduces your risks of fractures and osteoporosis.

During your younger years, the remodeling process leans toward bone formation, increasing bone

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growth until peak bone mass is reached around age 30. In your mid-thirties, the rate of removal of weak bone starts to exceed that of new bone formation, meaning that you're slowly losing bone over time. The bone matrix (sort of the frame the bone is built upon) weakens. If you're taking supplements to mineralize and increase bone density, this hardening of partially formed or incomplete bone matrix means your chances of fracture are greater.

Once you hit menopause, lower levels of estrogen and progesterone start to affect the process of bone remodeling. Bone tissue starts to go through the turnover process at a higher rate—increasing fracture risk by decreasing matrix quality without having much effect on density.

Inflammatory agents that increase resorption (the breakdown of old bone cells) and suppress bone formation are no longer kept in check by estrogen. Because of this, you could actually lose up to 20% of your bone mass in the first five to seven years after the onset of menopause.

Up until now, women have been increasing bone density with calcium and vitamin D supplements. But this does nothing for the remodeling of the bone matrix. Fortifying a weak matrix doesn't change the matrix itself—meaning bones are still weak despite your best efforts.

This is where Oстера comes in.

### **Rev up your body's bone-building cells**

Recently, there's been a shift. The new thinking is that certain body chemicals—scientists call them “biochemical markers”—tell us more about a woman's osteoporosis risk. Bone density tests only measure 20% of the skeleton, but these biomarkers show what's going on with the whole thing, as well as with the bone remodeling process. They hint at turnover rate, formation of bone, resorption of bone, and formation of new bone.

The level of the hormone osteocalcin (OC) is especially telling. This hormone controls the deposit of new bone. As osteoclasts destroy old bone, OC is released into the bloodstream. The more OC in the bloodstream, the faster the turnover of bone—and the higher your risk of fracture.

While Dr. Milner told me it's too soon to verify bone remodeling in his practice (Oстера is just that new!), a clinical trial, the results of which were published earlier this year, proves how well it works by examining the biomarkers associated with bone remodeling.

In the trial, 77 postmenopausal women—45 with metabolic syndrome and 32 who were generally healthy—participated. Both the trial group and the control group were instructed to follow a Mediterranean diet and exercise aerobically 150 minutes per week. Both groups did those things, but while the trial group also took Oстера twice daily. None of the subjects took calcium supplements or a multivitamin that might have contained calcium and/or vitamin D during the 14-week trial period.

At the beginning of the trial, both groups had elevated OC levels, indicating an increase in bone turnover rate and an increased risk for osteoporosis. At the end of the trial, the levels had gone up by 16.4% in the control group. The trial group, however, saw a significant decrease of 31%. Among women with metabolic syndrome, the increase in the control group was even higher (22.6%), but the trial group saw the same decrease as the women without metabolic syndrome.

The other biomarkers associated with bone remodeling and osteoporosis showed impressive results. P<sub>1</sub>NP, a marker of bone formation, significantly increased with use of Oстера, and significantly decreased in the control group. And IGF<sub>-1</sub>, a marker for vertebral fracture risk in postmenopausal women, increased

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significantly with Oстера (by 21.2%), which means they faced lower risk of fracture. The control group saw a decrease of 13.1%. An increase in IGF-<sub>1</sub> in women with low estrogen is very impressive.

Serum vitamin D went up by 16.2% in the test group and decreased by 14.6% in the control group over the course of the trial.

As part of the trial, researchers also looked at estrogen levels. They found that these levels didn't change on an observable level, meaning that the positive effects on the bone-remodeling-related biomarkers didn't have anything to do with estrogen—it was all due to Oстера.

Overall, researchers concluded that a combination of the low-glycemic Mediterranean diet, exercise, and Oстера positively affected bone remodeling in postmenopausal women with low estrogen levels. They suggest that you could gain even more positive results with mineralization support and weight-bearing exercise.<sup>1</sup>

### **Four bone-boosting powerhouse ingredients in one formula**

The benefits of Oстера come from a quartet of natural agents that are proven bone savers.

Rho iso-alpha acids (RIAA), derived from hops, modulate substances involved in bone degradation. Inhibition of these substances has been shown to promote bone formation and prevent the inflammation that accelerates bone loss.

Berberine acts in a similar way. It inhibits the activity of osteoclasts, the cells that take part in the breakdown of bone tissue. It's also been suggested that berberine can positively influence the formation of osteoblasts, cells that build up bone tissue.

Then there's vitamin D, which you know for going hand-in-hand with calcium. In addition to helping the body absorb calcium for mineralization of bone, it also plays a role in regulating bone turnover. Low vitamin D intake has been linked to increased fracture risk and increased rates of bone loss.

Finally, vitamin K plays a major role in the metabolism of bone proteins that are central to bone quality, integrity, and support of overall bone mass. Regular intake of vitamin K has been linked with increased bone mineral density; it also has been shown to have a positive effect on bone remodeling.

The vitamin K in Oстера may interact with a common blood thinner, Coumadin (warfarin sodium). If you are taking this medication, contact your physician before starting on Oстера. Too much vitamin K in a high-dark-green-leafy-vegetable diet and/or from supplementation can excessively thicken blood. If you have a tendency toward forming blood clots or need to thin your blood for other reasons such as coronary artery disease, contact your physician before taking Oстера.

It's an all-natural formula without serious adverse effects. Combined, the four components in Oстера help your body actually rebuild bone, instead of just increasing the density of bone that is already there.

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