

The protocol for reversing and reducing osteoporosis biology essay

[Science](#), [Biology](#)



Introduction: For increasing bone density and achieving the quickest and best results, the most effective protocol in reversing and reducing osteoporosis can be delivered by two steps. The first stage includes the first 3-4 months during which magnesium (and no calcium) is taken along with other supplements that deal with the other issues discussed later in this section. For the follow up after ~ 4 months both calcium and magnesium should be taken with the right ratio. Bone density increases fastest if no calcium supplements are taken at all for at least 3 or 4 months. Also reduction in dairy consumption to only one serving per day is highly recommended. Researchers specializing in magnesium supplementation have found that if calcium supplementation is not stopped for ~3-4 months, then magnesium levels in our body do not adjust as fast as they would otherwise. Increasing magnesium levels rapidly will quickly/effectively reduce production of osteoclasts that dissolve/remove bone. So, no calcium supplements should be taken for the first four months. The magnesium will pull calcium from where excess calcium has been deposited such as arteries, joints, kidney stones, etc. This means our bones will have a source of calcium. In addition, increasing magnesium levels increases the overall amount of available calcium in our body, as reported conclusively by researchers. This also indicates that if we have partially blocked arteries, or calcified joints, or arthritis, we should not take any calcium supplements for at least 4 months while in Stage 1. This gives our body more time to clean the calcium out of those arteries and joints. Once they are clear, Stage 2 can begin. It is to be noted that if we have already been taking high dose of magnesium with much lower dose of calcium for ~ 8-12 months, Stage 1 can

be skipped and Stage 2 can start. Any protocol of this nature has to deal with three main causes of osteoporosis, which are: 1. Too much calcium intake as compared too low magnesium intake, especially in the Western population. 2. Female and/or male hormones being low or out of balance. 3. Low and poorly functioning thyroid gland. 2

Stage 1 for Reversing and Reducing Osteoporosis

Magnesium intake is the most important supplement in Stage 1. However, it is also necessary to OPTIMIZE CELLULAR MEMBRANE POTENTIAL which also Enhances Strength, Energy and overall Health. A combination of nutrients to optimize the ionic charges in our cell membranes improves cellular chemistry and increases the overall cell efficiency and absorption of nutrients via cell membrane. This should have direct effect on the following properties of cells:- Cell protection and fortification (blocking access for toxins and pathogens)- Cell repair and recovery (increasing nutrient flow and access)- Cell hygiene (speeding waste transfer and emission)The key factors influencing cellular membrane potential for an optimum output are positive and negative ion concentrations. These ions work together creating electrical gradients within our tissues/cells. These gradients keep cell membranes strong and determine how well our cells and nerves function. The key elements or ions involved are sodium (Na^+), potassium (K^+), chloride (Cl^-), and calcium (Ca^{2+}). These four elements are found in abundance in almost every diet but are often severely imbalanced at a cellular level. High levels of magnesium is the key but zinc, chromium, manganese, lithium and germanium also contribute. These elements help the production and release of calcium and chloride ions which are essential for continued good health

and necessary for increasing bone density. About 600 mg of elemental magnesium is the correct amount to adjust the calcium and magnesium balance in our body when we have stopped using calcium for a few months. Optimum Cell Membrane Potential (OCMP) further enhances the cells methylation capacity and nutritionally supports mood elevation. Daily use of certain nutritional elements for OCMP will positively contribute to the detoxification process and help protect the cells and brain from mercury and other neurotoxins. It augments the body's natural pain-relief and stress recovery processes. OCMP may also act as anti-aging nutrition which may also strongly assist in the recovery of function in organs such as joints and skin. The following ingredients are believed to contribute for the effective recovery during stage 1: Therapeutic levels of Magnesium (chelated, ionic and soluble), TriMethylGlycine (cellular repair and protection), N-Acetyl Glucosamine (intestinal, joint and skin repair and protection), Germanium 132 (cellular oxygen utilization), with supporting levels of organic lithium, selenium, zinc, iodide, vitamins and a full range of trace minerals and absorption assisting cofactors. It is therefore necessary to increase the immune response to pathogens with an anti-inflammatory action in our body for reducing inflammation and pain and for regeneration of bones and cells. It is recommended to use a minimal amount of supplements in this first stage of increasing magnesium levels to increase bone density. It is also useful to raise the level of human growth hormones. The pituitary gland normally produces plenty of human growth hormone (HGH). However, as we age, the pituitary gland does not release as much of the HGH and by age of ~ 60, we have about 80% less human growth hormones than we had at age

of ~25. Some herbs stimulate the pituitary gland to release growth hormones and they are much safer and less expensive than human growth hormone injections. Use of such injections may cause increased aging effects after several years of use. It is always better to get our body to do the work, rather than giving the body a hormone in place of what the body naturally makes. As we age, we repair much more slowly. This is because HGH is responsible for turning on the repair and regeneration process in the body. If we have an injury or need some type of regeneration in our body, whether it is to heal a broken bone or a wound, the very best way is to have HGH supplements to speed up the healing process but we should not use such supplements if we have cancer. It does not cause cancer, but it would accelerate the growth of cancer cells just like it accelerates the repair of our injured cells.

Ionic Strontium for improving bone density

It has been found that strontium is effective for improving bone density. Studies have shown a 15% increase in lumbar spine bone mineral density over a two year period, 14.4% over a three year period along with an 8.3% increase in hip density. Ionic Strontium is preferred because, being in an ionic form, it's absorption will not be blocked by calcium as will other forms of strontium, and it is best to remove Strontium from calcium. The recommendations made above for the first stage is a basic approach to overcome/reverse/reduce osteoporosis. It is also recommend to take two other inexpensive supplements that are vital to proper bone health. These are:

Vitamin D

Adequate levels of vitamin D are important in the prevention and reversal of cancer, osteoporosis and a host of other illnesses, including the common cold. Over the last few years, vitamin D researchers have found that daily allowance for vitamin D is too low. It has been found that women who lose abnormally high amounts of calcium through their urine could cut the loss by up to 50 % when they took high levels of vitamin D. Many alternative MDs now recommend vitamin D supplementation of 5, 000 units daily. Even if you get out in the sun, without sunscreen, you may not be getting enough of it. One study showed that 30% of the people in a study, in Hawaii, were vitamin D deficient, even though they were out in the sun 2 hours daily with no sunscreen. Vitamin D is a very important nutrient, the lack of which is related to numerous health conditions, from cancer to MS to osteoporosis. It makes sense to add it on to your daily diet.

Vitamin K

Vitamin K is also important in treating osteoporosis since it inhibits the loss of calcium from bones, and is needed to get calcium into bones. One study demonstrated a reduction in calcium loss by up to 50% in osteoporotic individuals when given vitamin K. The reason for this is that osteocalcin is a protein that binds to calcium and builds bones and it is vitamin K dependent. Lack of vitamin K leads to insufficient osteocalcin being utilized - it remains free - so not enough calcium will get into our bones. Astronauts suffer from osteoporosis, being in a weightless environment. In one study carried out on Russian cosmonauts, levels of free osteocalcin increased within 4 days. This

means it was not being utilized. When one astronaut was given vitamin K during part of his mission, his levels returned to normal. When he stopped taking it, the high levels returned. Vitamin K regulates calcium and keeps it in the bones and out of arteries and thus preventing strokes, heart attacks and osteoporosis at the same time. Vitamin K works through an amino acid called GLA. GLA is part of a protein that controls calcium. Researchers believe there are at least one hundred of these calcium controlling proteins scattered throughout the body. Vitamin K is the only vitamin that makes these proteins work. They do this by a process of carboxylation which gives the proteins claws so they can hold onto calcium. Once the protein attaches onto calcium it can be moved and utilized by the bones. Proteins that do not get enough vitamin K cannot hold on to calcium. Without a functioning protein to control it, calcium drifts out of bone and into arteries and other soft tissue. Vitamin K redirects the "lost" calcium back to the bone reservoir.

Stage 2 for Reversing Osteoporosis

This stage is recommended after the magnesium and no calcium intake in Stage 1. It is reminded that during stage 1 removal of calcium from unwanted places occurs by the use magnesium without calcium and by increasing the levels of magnesium, our body will be putting more of that calcium into our bones. 5Stage 2 contains all the recommendations made in Stage 1 to stimulate and instruct our body to increase bone density. In stage 2, the OCMP process requires a very high quality calcium and magnesium supplement. Everything else remains the same. It is believed that some minerals such as fossilized red algae (called Aquamin) get more calcium into

our cells. It comes from large red algae growing in bays off the coast of Iceland and Ireland. At the bottom of these bays are calcium and magnesium deposits of the mineral structure that is left when the algae decomposes. So it is just like eating plants to get our calcium/magnesium, i. e. the perfect source, since it is plant based and the calcium has been transformed by the plant into a form that our cells can best absorb. In total about 600 mg of calcium and 500 mg of magnesium twice a day is recommended for increasing bone density in stage 2. A broad spectrum of reasons to fight osteoporosis in using fossilized red algae (Aquamin) are described as: 1. Removes " calcium-blockers", barriers to calcium and essential mineral absorption. 2. Instructs the body to maintain and NOT to lose bone density. 3. Provide " body friendly" forms of calcium, silica and magnesium. 4. Provide the full spectrum of auxiliary trace minerals that are required for healthy bone and collagen growth. 5. Provide the vitamins that are required for healthy bone and collagen growth. 6. Improves mineral and protein absorption by modulating pH levels. 7. Enhance mineral dispersion using natural carrier agents (microporous silica). 8. Opens and clears mineral delivery pathways using full spectrum free radical scavengers. Below is an overview of raw materials in fossilized red algae (Aquamin), and how they improve bone, collagen and muscle wellness. It's most important ingredient is: The highly bone friendly forms of calcium. Aquamin also contains high levels of natural magnesium, plus more than 70 trace minerals, and phytonutrients, all pre-digested by a unique marine algae. It is a remarkable whole-food, calcium and mineral source. You get a full spectrum of minerals and sea plant nutrients working for you instead of a single element like most

calcium sources. Next is the ability to turn off/reduce body's bone loss and improve bone strength by inhibiting the activity of osteoclast cells that break down bone and with anti-inflammation effects. There is some good evidence for using the hops plant extract in fighting osteoporosis. Silica has the ability to absorb and remove heavy metals from our body which interfere with the absorption and use of calcium, zinc, magnesium and other essential minerals. Any high capacity absorbing "clay" such as silica work as cleaners. High natural silica (99.9%) is supportive of ligament, bone collagen and hair growth. Silica is important to the cross linking of bone collagen. It helps set calcium into this collagen structure. Bone collagen gives your bone flexibility and resilience, yet it is rarely dealt with in osteoporosis medication.

Absorbing toxic debris and stabilizing digestion using citrus fruits also show promising results in human health. Changing inorganic minerals into organic minerals will help their absorption into cells and bones. For example, changing inorganic calcium into an organic bio-active cellular regenerative calcium will improve new bone growth. It has also been found that Humic and Fulvic acids activate and stimulate white blood cells, promote healing, stimulate cellular growth and regeneration, and inhibit the HIV virus. They are a protector against toxic heavy metals, improve brain function, balance and energize cells. Acting as a "free-radical" scavenger, they supply vital electrolytes, transport nutrients, catalyze enzyme reactions, increase assimilation, stimulate metabolism, modify the damage of toxic compounds such as heavy metals and free radicals, and increase the permeability of cell membranes to enhance nutrient absorption. Other important ingredients in stage 2 include vitamin cofactors including small amounts of vitamins C and

K2. These essential vitamins play important roles in nutrient absorption, bone and collagen strength. To be noted is the fact that by taking 1500 mg of calcium supplements daily, only about 30% absorption occurs in the stomach, i. e. about 450 mg may actually be absorbed.