Most American adults have no idea of the impact osteoporosis has on health. In a small in-depth study reported in the Journal of Rheumatology, researchers interviewed 11 adult women with an approximate age of 75 years and asked them a series of questions to understand their awareness concerning osteoporosis. Of all the participants, most identified osteoporosis as a serious condition and could somewhat describe its effects on bone health. Most of the participants did not understand the clinical consequences of osteoporosis, and in fact, many of them had already experienced fractures. While many of the participants had concerns taking medications for alleviating bone deterioration, their primary concern in taking prescription medications was cost, side effects and interactions with their current medications. The incidence of osteoporosis has increased dramatically over the last several decades. Here are some interesting facts of osteoporosis that may make you decide not to put off talking to your physician or nutritionist concerning a protocol for osteoporosis.

Osteoporosis affects an estimated 10 million Americans over the age of 50. Some reports have estimated the numbers are as high as 28 million people.

33 million people, mostly women, are affected with low bone density placing them at an increased risk for developing osteoporosis in the future.

It has been estimated that over 2 million fractures occur in the United States each year solely related to osteoporosis.

Over 50,000 people die every year from post fracture complications.

It is estimated that as many as 25% of people suffering from osteoporosis are confined to a nursing home due to this condition.

Dowager's hump is a common condition found primarily in women caused by a collapsing of the bones in the spine medically referred to as compression fractures.

Each year over 300,000 women suffer hip fractures due to weakened bones from osteoporosis. Within the following year 20% of those will die. 50% of the survivors will never fully recover and will most likely require nursing care.

The prevention of osteoporosis should not be put off until it requires attention. Often it is much too late to try and increase bone density after so much damage has already been done. The time to consider prevention of osteoporosis is in the early decades of our lives. For example when the woman is pregnant she should be considering her bone health and that of her child. Research has shown that the earlier that bone density is preserved and bone health strengthened, an individual will more successfully enter into their later years without the risk of osteoporosis. Osteoporosis is the fear of the elderly, but it should be the fear of the young generation who has the opportunity to lay down new bone and preserve it through their later decades. It takes years to destroy our bone health so consequently a large percentage of the damage is already done before it can be acknowledged. Bone health is like a bank account. The more you deposit early in life, the more you will have to draw from throughout your lifetime. As we withdraw from our bone bank account through our younger years the less bone health we will have to survive in later decades.

What can we do to preserve bone health throughout our lifetime?

Later in this article I will discuss three nutritional formulations that can be used to prevent and restore bone loss. We can also make certain lifestyle changes to have an impact on our bone health. The body must maintain a balance between acid and alkaline conditions of the blood. When we consume too many acidic foods such as sugar, meat, softdrinks, coffee and grains, and food made from grains like bread and pasta, the body becomes too acidic. In order for the body to maintain more of an alkaline nature, the body gives up calcium from the soft tissue and bones to neutralize and buffer the acidity. This is one of the most common major factors in the development of osteoporosis. For example, if you were to drop a tooth into a can of Coke, in time it would be completely dissolved. Juices and soft drinks are loaded with acidic contents such as citric acid and phosphoric acid and can have grave consequences on our bone health.

When in doubt, always consult your physician or health care practitioner. This column is to provide you with information to maintain your health.

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Supplements to prevent bone loss and maintain bone health.

The first supplement should be one containing an excellent content of calcium and magnesium. I have found that high levels of calcium are not necessary or productive. It’s more important to have a moderate intake of calcium and magnesium with other nutritional factors that increases the calcium bioavailability and absorption. Supplements that contain just calcium, magnesium and vitamin D are dramatically lacking several very critical nutrients that the body requires to increase bone density and bone health. A supplement containing calcium, magnesium, vitamin D-3, K-1 and K-2, silicon, boron, zinc, copper and manganese complimented with a probiotic such as bacillus coagulans would provide excellent support for bone health and increased bone density. Calcium and magnesium should be in an excellent ratio of approximately 2:1. I personally find calcium citrate and calcium malate to be the most easily absorbable forms of calcium. The quantity is not as important as the quality. For example, only 10% of calcium carbonate can be absorbed while 40% of calcium citrate is absorbable. Also, the quantity of calcium can be substantially lowered when it is combined with many of the accessory nutrient factors that help provide a better stage for calcium to be absorbed reversing osteoporosis and restoring new bone health. I like to recommend a moderate level of calcium in the 400-600 mgs range per day versus the 1,000 – 1,500 mgs as advised by some nutritionists. Here are the main reasons why I think we should not overdo calcium and instead increase vitamin D levels significantly.

- The suppression of circulating 1,25 (OH) 2D levels by high calcium intake could explain why higher calcium and milk intakes appear to increase risk of advanced prostate cancer. Cancer Causes Control 2005
- Females in the highest quartile of vitamin D intake had 76% lower breast density. Cancer Epidemiol Biomarkers Prev. 2004
- Vitamin D plus calcium reduced the rate of falls by 60% compared with calcium alone. Journal of Osteoporos Int. 2006
- 80% of hip fracture patients had abnormally low levels of 25OH D. Minn Med 2005
- Of all patients reporting chronic pain, 93% had deficient levels of vitamin D. Mayo Clin Proc. 2003
- Vitamin D deficiency is now recognized as an epidemic in the United States. Vitamin D deficiency is associated with an increased risk of type I diabetes, multiple sclerosis, rheumatoid arthritis, hypertension, cardiovascular heart disease and many common deadly cancers. Journal of Nutrition 2005
- “Adequate calcium and vitamin D intake is crucial to develop optimal peak bone mass and to preserve bone mass throughout life.” JAMA 2001
- People with frail bones or vitamin D deficiency should use 50,000 IU of D3 per week for 3 months, then test and possibly follow up with more D if necessary. For a full report go to www.surgeongeneral.gov/library/bonehealth
- “Global high prevalence of vitamin D insufficiency and the growing scientific evidence link low circulating 25-hydroxy vitamin D to increased risk of osteoporosis, diabetes, cancer and autoimmune disorders. Recent studies demonstrate safety and efficacy of community-based vitamin D supplementation trials.” Calvo MS, FDA 2005
- Double blind placebo controlled, prospective study shows 60% reduction in colon, breast, lung and lymphatic cancer in subjects that consumed extra 1100 IU of vitamin D each day for a year.
- Vitamin D is very safe. 1,700,000 IU per day is only published toxic level of vitamin D.

This critical information on vitamin D supplementation is due to the thanks of Paul A. Stitt, M.S., C.N.S., Executive Director of Nutritional Resource Foundation, Manitowoc Wisconsin 54220.

Vitamin D-3 has improved bone density significantly. Researchers in Romania who provided bread fortified with vitamin D and calcium on a daily basis to elderly nursing home patients reported a 28% increase in lumbar bone mineral density which far surpasses the 8% increase in bone mass density typically achieved with bone building drugs. We now know that higher levels of vitamin D in our diet have a greater potential for better health (of all diseases) and increased bone density.

Vitamin K-2 – This vitamin is the optimal bone health supplement. Adequate natural vitamin K-2 is essential for the body to utilize calcium to build healthy bone tissue. It activates osteocalcin, a protein required to bind calcium to the mineral matrix thus strengthening the bones. K-2 also participates in carboxylation, a Matrix GLA protein (MGP), the most potent inhibitor of arterial calcification known lowering the risk of vascular damage.

Boron (Fructo-borate) is a complex of boron and fruit sugar, a carbohydrate that occurs naturally in many fruits and vegetables that is highly stable, non-toxic and bioavailable. It is a micro nutrient or trace element that has been used historically as a nutritional supplement to promote healthy bones and joints and more recently is thought to aid in vitamin D metabolism, prostate health and regulation of steroid hormones – In a recent study, conducted by Dr. Hector De Luca, Department of Biochemistry at the University of Wisconsin...
Preventing Osteoporosis and Restoring Bone Health

Madison, he determined that bone ash measurements reflect a significant trend toward elevations when boron is administered to vitamin D deficient animals. Vitamin D deficient animals were used in research for the investigation and discovery of novel anti-osteoporotic treatment. Using this model and 8-week treatments with Fructo-borate, bone mineral content was increased by 5.8% as measured by bone mass. This result suggests that Fructo-borate may increase bone density and strength. The use of boron in this formulation is based on its superior effect of increasing bone density. However, based on scientific studies, 79% of study volunteers also suffering mild to moderate osteoarthritis experienced a reduction of joint pain, stiffness and inflexibility after eight weeks of supplementation. Supplementing the diet with Fructo-borate increased vitamin D-3 on an average of 24% after 60 days and also exhibited an increased serum level of DHEA. Boron (Fructo-borate) can affect the strength of bones and joints most likely by cross linking the inorganic and organic bone/joint matrix and/or through different biochemical mechanisms that modulate activity of bone cells such as chondrocytes, osteoclasts and osteoblasts.

With the second formula you can fight and even prevent osteoporosis with this bone building miracle mineral.

Another trace element, strontium can have a tremendous effect in positively changing bone health and bone density. This protocol for bone health may allow you to never have to consider taking drugs unless absolutely recommended by your physician. Strontium citrate, not strontium 90, the toxic radioactive form, has been safely used as a medicinal substance for over 100 years. In fact, as late as 1955 strontium compounds were still listed in the dispensary of the United States of America and were used therapeutically in the United States and Europe. There are several forms of strontium in use today. However, strontium citrate is the most easily absorbed systemically. Mayo Clinic researchers noted clinical and x-ray improvement in severe osteoporosis with strontium lactate. Researchers reported significant microscopic improvement in bone with the use of strontium carbonate. My good friend, Dr. Jonathan Wright has observed significant improvement in bone density with the use of strontium citrate. From Dr. Jonathan Wright’s many years of experience and clinical observations of his patients, he concluded that strontium compounds are highly efficacious in preventing and combating osteoporosis. Following is the result of a three year randomized, double-blind placebo controlled study using 680 mgs of strontium daily: Women suffering from osteoporosis experienced a 40% reduction in risk of a vertebral fracture compared to the placebo group. Overall vertebrae density in the strontium group increased 11.4% but there was a 1.3% decrease in the placebo group. Strontium citrate is very safe and non-toxic. There have been studies using 2 grams of strontium per day with no significant side effects. The only concern when using strontium is that it should be taken separated by at least two hours from your calcium supplement. Strontium and calcium fight for the same pathway in the body and strontium will always win. You should also not take strontium without taking a calcium supplement. I would suggest taking 680 mgs once daily. Take this dosage at least two hours away from your calcium supplement.

Formula #2:
Strontium (citrate) 340 mgs

Healthy skin, shiny hair, strong bones, beautiful nails – Silica is the third supplement, again a critical trace mineral, that can have an impact on bone health and bone density.

No life without silica
In 1939 the Nobel Prize winner for chemistry, Professor Adolf Butenandt, proved that life as we know it cannot exist without silica. According to research conducted at Columbia University in 1972, silica is an essential nutrient and must be supplied continuously from food sources. Silica plays an important role in many body functions and has a direct relationship to calcium and mineral absorption.

Organic silica is a natural supplement obtained from the aerial sterile part of the silica rich spring horsetail (Equisetum arvense) that is incorporated with vitamin D-3, magnesium and a specific marine oil to enhance beneficial effects and cell membrane penetration of the active compounds. A gentle (no chemicals or organic solvents) low temperature and proprietary process allows for an optimal bioavailability and unmatched efficacy in bone and connective tissue metabolism. This superior organic silica is obtained by aqueous extraction after filtering out the insoluble fractions which can be abrasive and harmful. It is therefore entirely soluble and 100% bioavailable for the body.

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THIS STATEMENT HAS NOT BEEN EVALUATED BY THE FOOD AND DRUG ADMINISTRATION. THIS PRODUCT IS NOT INTENDED TO DIAGNOSE, TREAT, CURE OR PREVENT DISEASE.
The particular extraction in aqueous medium leads to natural bonds between organic silica, potassium and flavonoids enabling calcium to be transferred to and assimilated by bones. Organic silica also has positive effects on the formation of collagen. Silica plays a role in the formation of bone structure and its calcification ensuring the interconnection of collagen and proteoglycans. Silica stimulates in vitro collagen type 1 synthesis in bone forming cells and their differentiation. Moreover, silica acts on the skin, the exoskeleton (healing renewal and keratinization), and helps prevent atherosclerosis. It is an important constituent of the arterial wall which is necessary to the synthesis of the elastin fibers and their maintenance. In several case studies, organic silica has proven its efficacy in the treatment of algodystrophy (a painful wasting of the muscles of the hands, often accompanied by tenderness and a loss of bone calcium. The condition may begin in the hand or in the shoulder and spread over the entire limb, causing contractures, edema, and cyanosis of the skin. It may also occur in the feet or legs. It may be associated with injury, heart disease, stroke, or a viral infection), fractures, dental caries and supporting dental implants. Silica increases the incorporation of calcium which induces a positive effect on the bone anabolism and its calcification. Furthermore, silica favors the amount of calcium remaining in bone and produces a decrease in bone catabolism. Taken together these results show the powerful action of silica on osteo-cartilaginous tissues. This positive effect can also be extended to all supporting tissues. Research has indicated that organic silica can actually replace calcium in the diet. Animal studies have indicated, through some not fully understood mechanism of action, the process of biological transmutation, silica precedes an increased level of calcium and therefore raises the calcium level for healthy bones and cartilage. Reference Biological Transmutations, Professor C. Louis Kervran

**Formula #3:**

<table>
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<tr>
<th>Organic Silica from Horsetail (Equisetum arvense) Extract</th>
<th>20 mg</th>
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<tbody>
<tr>
<td>Through patented aqueous extraction method bound in a marine phospholipid and flavonoid complex</td>
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You can enjoy good bone health all your life but preparation and healthy lifestyle choices can only be accomplished by you. Choosing a healthy diet high in fruits and vegetables, moderate lean proteins, moderate amounts of complex carbohydrates and the avoidance of juices, soft drinks and coffee can help preserve and strengthen your bones. In the early years of your life, for good bone health, I would maintain a healthy calcium and magnesium level with accessory bone health nutrients (formula #1). If you have been diagnosed with osteoporosis, I would recommend formula #1 and formula #2, Strontium citrate. Organic silica can be added to any of the formulas to increase bone density and bone health. Organic silica is also a beauty supplement as it has a tremendous effect on healthy skin, hair and nails. 

X-rays of a 25-year-old patient suffering scaphoid fracture associated with algodystrophy was treated with Silica Formula #3. At the start of the study, there was a general demineralization and bone structure had deteriorated. After three months, radiological control clearly showed bone framework was stronger, more visible and that remineralization was improved after Silica Formula #3 treatment.

A case study in dental implantology was conducted where patients were treated with Silica Formula #3 one month prior to and two months after surgical placement of implants. Pre-treatment with Silica Formula #3 allowed a good jawbone stability during surgery. No inflammation, pain or implant loss was reported and healing time was reduced by half with decreasing osteointegration quality.

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