



Osteoporosis

By Jacqueline Fields, MD and founder of Dr. Fields' Sacred Skin | August 14, 2014

Osteoporosis is a significant problem in our culture and unfortunately is on the rise. One out of every two American women over 50 will suffer an osteoporotic fracture; 90% of all women over 75 have osteoporosis; and 50% of all women who break a hip because of osteoporosis never walk again. It is not just women, one third of all osteoporotic hip fractures occur in men.

What is very important to realize is that the primary culprit is diet and lifestyle choices. There are important topics to discuss when educating patients how to prevent and even reverse bone loss.

Let's discuss these 6 topics:

Diet/Nutrients

Exercise

pH

Hormones

Toxicity

Inflammation

Diet/Nutrients are critical. Although I will go through multiple supplements that significantly help repairing bone loss, one must remember good food choices is always your first medicine. Please see the list of the key bone building nutrients and what foods provide these nutrients. As everyone knows when we want to build bone, we always talk about calcium. The best data is on MCHC calcium. This stands for *micro crystalline hydroxyapatite concentrate*. MCHC is a complex crystalline compound composed primarily of calcium, phosphorous, and a full spectrum of trace mineral that naturally comprise healthy bone. This includes strontium and boron and all the cofactors that help absorption of calcium. I like a 2:1 calcium/magnesium ratio. My favorite product is Ultimate Bone Defense at the Healing Gardens Medicinal Store which has 2000 mg of MCHC concentrate and 400 mg of magnesium as well as a little vitamin D. Dark leafy greens, dairy products, cruciferous and almonds are an excellent source of calcium and magnesium.

Vitamin D is the next important nutrient. In the past few years the research has shown us that 80% of the world's population is deficient in vitamin D. I check all my patient's vitamin D levels and even here in Colorado with all of our sunshine, this statistic is true. Most people require 1,000 – 5,000 of D3. Ensure your physician checks your 25(OH) vitamin D3 level. Your goal is to keep your levels around 60-100. Eggs and fish are an excellent source of vitamin D and K.

Silica supplementation supports development and regeneration of connective tissue which affects skin, bones and cartilage. Specifically, silica stimulates osteoblasts, increases calcium uptake and is a major determinant in bone mineral density. One of my favorite silica products is RegeneMax by Xymogen. This is a safe, bioavailable, patented, choline-stabilized formulation of orthosilicic acid.

Finally, the last nutrient that doesn't get enough attention is **vitamin K1 and K2**. K1 is crucial to bone quality and the support of axial and bone mass. K2 helps remove calcium from arterial plaque and puts it back into bone. Hence it reverses cardiovascular disease while building bone. Some of our vitamin K products in the store include: Beyond bone defense and Supreme D. Research shows that the K1 dose is effective at 1mg/day, and the dose of K2 is effective at 50-100mcg. At these doses we have significant changes in bone density. If you take anti-coagulant drugs, check with you doctor before increasing Vitamin K intake. Fermented foods such as miso and natto, as well as egg yolks are a great source of K2. Onions and parsley contain vitamin K1.

The next topic is **pH** and how it affects bone health. A typical western diet such as meats, grains, coffee, white sugar, and processed foods generate free acid as they are metabolized. If you have a diet that is acidifying to your body, your body will pull buffering agents such as calcium and magnesium from your bones to neutralize your pH. Your goal is to keep your salivary or urine pH at 6.5-7.0. I have included a brief list of acidic or alkaline foods below.

Foods that neutralize pH

- Green leafy vegetables, tofu and tempeh
- Lemon juice in water or lime juice in water
- Apple cider, apples, lemons, limes
- Yams
- Spinach, turnip greens, broccoli
- Raw, unprocessed nuts, pumpkin seeds
- Poultry, eggs
- Live-cultured dairy, including yogurt, cottage cheese, blue cheese, swiss, munster.
- Foods high in potassium

Foods that are not acceptable

- Red meat
- Milk
- Refined sugar or foods that contain refined sugar
- Limit intake of simple carbohydrates, such as honey and maltose
- White flour products
- Orange juice, bananas, pears
- Phosphoric acid sources, such as when used as preservatives
- Soft drinks
- Corn or potatoes, or products that contain these foods
- Calcium carbonate in your calcium supplements
- Antacids containing either aluminum or calcium carbonate

- Sodium chloride salt

For further information, please refer to my article on “Understanding pH” at our website www.thehealinggardens.org

Hormones are another large player for keeping our bones strong. We all know when menopause occurs and hence estrogen decreases, this effects bone remodeling. In the absence of estrogen, there is increased inflammation and increased bone breakdown. It is also important to realize that progesterone, DHEA, and testosterone can help bone building as well. I find it critical to check all hormone levels and optimize them to physiological levels. This plays a significant role in preventing bone loss and strengthening the bone matrix.

Toxicity is a factor that is not discussed enough. The most common toxic burden affecting bone health is lead. Lead in our bones makes the matrix porous. It is important to check one’s heavy metal levels and if levels are high, we must assist the patient via nutrients or Chelation to detox the metals out. Once these metals are in the bone this can take years to remove.

Finally the newest data is how much the **inflammatory pathways** up-regulate osteoclastic activity. Our bones are always in a balancing act between forming new bone with osteoblasts, and resorbing old bone with osteoclasts. Increased inflammation up-regulates reabsorption of bone via increasing the osteoclastic activity. Hence the more inflamed we are the more bone loss occurs. There are many plants and nutrients that help lower the inflammation in the body. A few of my favorites include ginger, boswellia, curcumin, tumeric and high dose omega-3 essential fatty acids. A few products at the medicinal store directed at decreasing inflammation include AKBA, INFLAMMEND and Ultimate EFA’s. AKBA is a 90% extract of boswellia, the strongest currently on the market. For more information on how to decrease inflammation in the body please refer to my article on inflammation Natural Pain Relief found at our website: www.thehealinggardens.org.

Bone-building nutrients

Nutrient	Range for Bone Health	Dietary Sources
MCHC Calcium	1000-2000 mg	Dairy products, white beans, spinach, kale, turnip greens, broccoli, bok choy, almonds
Phosphorus	700-1200 mg	Meat, dairy, fish, almonds, lentils, peanuts
Magnesium	400-800 mg	Spinach, swiss chard, okra, oat bran, almonds, hazelnuts, peanuts, brown rice, 100% bran
Silica	5-20 mg	Green leafy vegetables, beets onions, parsnips, oats, apples, strawberries, grapes, almonds
Zinc	20-30 mg	Oysters, beef and other red/dark meats, beans, pumpkin seeds, whole grains, brazil nuts, lentils

Nutrient	Range for Bone Health	Dietary Sources
Manganese	10-25 mg	Whole grains, pineapple, pecans, almonds, peanuts, spinach, sweet potatoes, pinto beans, lima beans
<i>Copper</i>	2-3 mg	Beef liver, oysters, clams, crab meat, cashews, sunflower seeds, hazelnuts, almonds, lentils
<i>Boron</i>	3-4 mg legumes, apples	Almonds, red wine, coffee, peanuts, grapes,
<i>Potassium</i>	4700-5000 mg	Bananas, potatoes, prunes, oranges, tomatoes, raisins, artichokes, lima beans, acorn squash
Vitamin D	800-2000 IU & up as needed	Salmon, sardines, mackerel, fish liver oil, eggs
Vitamin C	500 mg to bowel tolerance	Strawberries, sweet red peppers, Grapefruit, tomatoes, broccoli, oranges,
Vitamin A squash,	5000 IU or less	Cod liver oil, sweet potatoes, butternut Carrots, cantaloupe, spinach
Vitamin B6 chicken,	25-50 mg	Potatoes, bananas, salmon, turkey, Spinach, hazelnuts
Folic acid lentils,	800-1000 mcg	Green leafy vegetables, citrus fruits, garbanzo beans, lima beans
Vitamin K1	1000 mcg	Broccoli, kale, spinach, leaf lettuce, swiss chard Parsley, soybean oil, olive oil, onions
Vitamin K2	50-100 mcg	Fermented dairy, miso, egg yolks
Vitamin B12	100-1000 mcg	Clams, mussels, beef, poultry, fish, milk
Healthy Fats	<i>20-30% total calories</i>	<i>Nuts, flax, sesame & sunflower seeds, fatty fish</i> Avocados, vegetable oils
Protein	1-1.5 gm per kilo	Eggs, meat, milk, soy foods, sprouted seeds, legumes, amaranth, quinoa, beans

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