
10 steps to Build Bone Density without Bisphosphonates

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Why does bone density decline? As we age the rate of bone breakdown exceeds the rate of bone building, therefore the density of the bone gradually declines in both men and women from the early 30's. This is a natural result of loss of bone-building hormones (such as progesterone, testosterone, DHEA) and bone-building nutrients (such as calcium, magnesium, boron) and the gain of toxins (such as mercury, lead, smoking, soda, high animal protein intake and acidity). There are also some medical conditions and medications that accelerate bone loss including hyperparathyroidism, steroids, and stress. Since bone loss is a leading cause of frailty and ultimately disability, it is important to identify bone loss and restore the body's ability to build bone.

How do you know if You are Losing Bone? Assuming that bone loss occurs in everyone from the 30's onward, it is important to assess the rate of bone loss and the status of the bone density.

- 1) The rate of bone loss is best measured by looking at urinary markers such as N-telopeptide which are bone breakdown products. Ideally there should be less than 35 units of N-telopeptide in the urine sample, or bone loss rate is too high.
- 2) The status of bone density is measured by dual-energy X-ray absorptiometry (DXA or DEXA scan) of the hip and spine, not the foot and wrist. Although osteoporosis and osteopenia are officially defined when the T-score falls below -1.0, if your DEXA scan T-scores is below +1.0, your bone density could improve.

How to Increase Bone Density? Whether you have been diagnosed with osteopenia or osteoporosis or simply want to decrease your risk of losing bone, you can increase bone density through 1) hormone restorative therapy especially with bone-building hormones (i.e. DHEA, progesterone, testosterone), 2) optimizing bone-building nutrients (i.e. Calcium, Vitamin D, Vitamin K, Magnesium), 3) removing toxins especially bone depleting heavy metals and acidity and reducing 4) mind and 5) body stressors.

Hormones and Bone Density: It is well known that as hormones decline, bone density decreases. The main hormones in the body that directly correlate to bone density levels are Progesterone, Testosterone, DHEA and Estradiol which all decline naturally over time. When stress is high, the decline is more rapid.

Action 1) Measure and optimize your hormones. Hormone levels may be in the "normal range" and yet far from optimal levels to maintain bone density and prevent disease. By restoring optimal levels of hormones, our body's ability to maintain bone density increases.

Nutrition and Bone Density: Optimizing nutrient status is critical to reduce bone loss and fractures.

Action 2) The food you eat is a very important part of decreasing your risk of fracture from osteopenia or osteoporosis. The more animal proteins in the diet, the higher the tissue acidity and bone loss, in the urine. Non-dairy, calcium-rich diets that are with *plant-based*, correct the pH and reduce bone loss. Interestingly plant proteins contain over 10 times the calcium and magnesium compared with animal proteins.

<p>Acid Reducing Diet</p> <p>Plant Based</p> <p>Duration: 2-3 months to life</p>	<ul style="list-style-type: none"> ● Eat: Non-dairy calcium-rich foods (refer to foods list) ● Eat 8 different colors of vegetables per day. Organic preferred. The more raw food the better. Refer to Cleansing Vegetable list. ● Reduce meat, fish, dairy, eggs. ● Avoid Fried, charred, overcooked, microwaved, canned and boxed foods. ● Green Superfood Dense Foods. Refer to Superfoods list. ● Maintain a plate ratio for each meal of 50% vegetables cooked or raw, 25% complex carbohydrates, 25% lean protein (either meat, fish or plant protein such as hemp, rice, lentil).
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Action 3) Take a few carefully selected supplements (usually a multivitamin with K2 and extra vitamin D3 and magnesium; calcium supplement) without preservatives (i.e.) Mg Stearate and dyes. The data shows that too much calcium can increase the risk of vascular events such as heart attacks and strokes, since free calcium can form plaque. To address this, I recommend a bound calcium such as micro-crystalline hydroxyapatite calcium which directs only to bone and calcium aspartate, These forms of calcium can build bone at much lower doses without increasing risk.

Action 4) Measure nutritional status to determine adequacy of your program, absorption and utilization possibly by serum Spectracell or NutraEval.

Toxins and Bone Loss: Toxins, especially heavy metals such as Mercury and Lead are major contributors to fracture risk. There are two main approaches to reducing the body's burden of toxins.

Action 5) Reduce exposure to gases, paints, glues, preservatives, dyes, heavy metals, plastics, phthalates, bisphenol-A, electromagnetic radiation, etc.

Action 6) Enhance elimination of toxins from your body by optimizing the function of bowel, liver, lymphatics, kidney and skin. (Refer to Volume 1, Issue 1)

Action 7) Maintain hydration by drinking ½ of your body weight in ounces of pure water per day, as this is critical to elimination of toxins.

Mind stress/ body stress and Bone Loss When we are under mental stress or body pain over prolonged periods of time, the sympathetic nervous system fires and utilizes hormones (i.e. Progesterone, Testosterone, DHEA and Estradiol) and nutrients (i.e. B vitamins, Magnesium, Vitamin C) much faster than usual.

Action 8) Breathe deeply and consciously to increase oxygenation, increase pH and reduce inflammation. When we are aware of the breathe, oxygenation increases. Exercise in the aerobic range where you can breathe and talk easily and perform strength bearing exercises such as yoga.

Action 9) Get 8 hours of deep uninterrupted sleep. Research shows that the more sleep we get the less inflammation and degenerative disease we have.

Action 10) Exercise in the aerobic range for 20-30 minutes three times a week and incorporate strength bearing exercise. One rather practical way to achieve this is to incorporate these into your activities of daily living, such as climbing first three floors of stairs (instead of elevator), mopping floors, standing squats, walking lunges, standing and wall push-ups and climbing stairs.

Non-Dairy Calcium Rich Foods

Broccoli	Apricots, raw	Almonds	White bread
Watercress	Figs	Brazil Nuts	Wholemeal bread
Curly Kale	Currants	Hazelnuts	Muesli, Swiss style
Okra	Orange	Sesame Seeds	Tofu, soybean, steamed
Red kidney beans	Sardines in oil, tinned	Walnuts	Omelet
Chickpeas	Whitebait, fried	Tahini Paste	
Green/French Beans	Salmon, tinned	Pasta, plain, cooked	
Baked Beans	Fish paste	Rice, white, boiled	

Superfoods

Raw cacao	Blue green algae (lake)	Incan berries
Hemp seed	Marine phytoplankton	Dulse
Goji Berry	Maca	Resveratrol
Aloe vera	Coconut	Oat grass
Bee Pollen/ honey/royal jelly/propolis	Acai	Barley grass
Kelp	Chlorella	Wheat grass
Spirulina (brackish)	Camu-camu	Turmeric