

DIET AND LIFESTYLE RECOMMENDATIONS FOR BONE HEALTH AND PREVENTION OF OSTEOPOROSIS

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Bone is a dynamic, living tissue. Although genetics play a role in osteoporosis, the major determinants of bone health are diet and lifestyle, and osteoporosis can often be prevented through diet, lifestyle and proper supplementation. It is important to optimize peak bone mass in younger years and minimize bone loss with aging. Nutrition and lifestyle recommendations serve as the primary approach to slow bone loss and decrease risk of fractures.

Dietary Recommendations:

- **Include foods rich in vitamin K, Calcium and Boron, which are all crucial for bone health.** Rich sources of vitamin K include broccoli, lettuce, cabbage, spinach, green tea, asparagus, oats, whole wheat, and fresh green peas. Good sources of calcium include dark green vegetables, quality dairy products, almonds, kelp and oily fish. Prunes are particularly high in boron, and have been shown to be helpful for maintaining bone density in women entering menopause. **Green, leafy vegetables are a great source for all of these, and offer much protection against osteoporosis.**
- **Include foods rich in Vitamin D and consider additional supplementation.** Good sources of vitamin D include oily, cold water fish, whole eggs and mushrooms.
- **Protein** - Need adequate protein, but not excessive amounts of animal protein. 60-90 grams per day, depending on activity level and individual needs, is a generally a good estimate. See what feels right for you.
- **Limit foods that excrete calcium** - A diet high in sugar, phosphates (as in sodas), excessive animal protein or highly acidifying foods is associated with increased excretion of calcium in the urine, as calcium is used to buffer extra acid generated in the body through such a diet.
- **Include highly alkalizing green vegetables and fruits daily.**
- **Include intake of soy isoflavones** - Soy consumption is associated with greater bone density. It is high in calcium and has phytoestrogen effects.
- **Include green tea**, which offers significant protection against osteoporosis.

Lifestyle Recommendations:

- **Exercise** - Physical activity is extremely important. One hour of moderate activity 3 times per week has been shown to prevent bone loss AND to actually increase bone mass in postmenopausal women. **Ideally, aim to do weight-bearing exercise 4 times a week, plus strength training 2 or more times each week.**
- **Avoid smoking and secondhand smoke**
- **Limit alcohol intake** - Drink fewer than 7 alcoholic drinks per week (no more than 2 in one day)
- **Spend at least 10-15 minutes outside each day** (important for vitamin D production)



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* Please note that it is always best to try to attain most nutrients through food. However, some individuals can benefit with additional supplementation. The following is a general guideline for supplements that can be beneficial for bone health. Please always work with your practitioner in adding supplements to your regimen.

Supplement Recommendations:

- **High quality multi vitamin and mineral supplement** - (will include several of the nutrients below, but will need to combine to meet levels recommended)
- **Calcium** – up to 1000 mg per day. Calcium is important, but when used alone, it has little benefit. It needs vitamin D, K and other nutrients to go along with it. Calcium carbonate is poorly absorbed by body (but is found in many supplements). Do not take more than 1000mg. Large doses can impair absorption of magnesium and other minerals. Forms that are absorbed well: **calcium citrate or tricalcium phosphate**.
- **Magnesium** - 350 to 500 mg per day, just as important as calcium for bone mineralization (low magnesium is associated with osteoporosis)
- **B Vitamins:** Deficiency linked to bone loss
 - **Vitamin B6** -25 to 50 mg per day
 - **Folic Acid** – 800 mcg per day
 - **B12** – 800 mcg per day
- **Vitamin C:** 250-500 mg per day; important in formation of structural proteins of bone; deficiency linked to osteoporosis.
- **Vitamin K (MK7):** 100 mcg per day; important for bone matrix and overall bone health
- **Vitamin D (generally taken in addition to multi)** – Vitamin D, in combination with calcium supplementation, reduces rate of postmenopausal bone loss, especially in older women. Vitamin D also improves muscle strength and balance. There is a direct correlation between bone mineral density and blood levels of D3. A recommended dose for general health is usually 2000 IU, but for those with reduced bone density, it may be helpful to go as high as 5000 IU – but best to check blood levels first to establish baseline.
- **Fish oils/Omega 3 Fatty Acids:** 1000 mg EPA + DHA per day
- **Zinc** – essential for proper formation and function of bone cells; enhances biochemical action of vitamin D; needed in synthesis of various bone proteins.
- **Manganese & Copper** – generally covered in multi; deficiency may contribute to osteoporosis.
- **Flavonoid-rich Extract or Greens Formula** – antioxidant support; alkalizing
- **Biosil-** highly bioavailable form of silica, important in bone calcification; 6-10 mg per day.

Botanicals:

- **Green tea** – green tea offers significant protection against osteoporosis. It is rich in polyphenols and vitamin K. Recommended daily intake: 3-5 cups; 250 mg of the polyphenols (can take in supplement form too).



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