

Dr. Lowell J. Keppel, DC

What is Osteoporosis?

A huge concern in the world today, osteoporosis is a loss of bone strength due to decreased bone mass and density. As this condition progresses, bones may become so porous and weak that they fracture. Prior to osteoporosis is osteopenia, which is a thinning of the bone that is not yet severe enough to be diagnosed as osteoporosis.

Remember, bone is growing, living tissue. You are constantly generating new bone cells, continuously cleaning up old bone tissue and producing new bone tissue. Healthy bone is strong but also flexible, bendable, and dynamic.

We typically think of osteoporosis as being “an old woman’s disease;” in fact, it can affect men, and there are even cases of it in younger people. Studies claim that 1 in 2 women will develop osteoporosis; 1 in 4 men are also likely to suffer. Because bone growth peaks at age 30, then slowly declines over the years, we used to find most cases of osteoporosis among the elderly.

Drinking Soda Pop Contributes to Osteoporosis!

Surprisingly, we now are seeing early signs of poor bone health in teenagers, primarily do to soda consumption. Americans spent \$68.1 billion on carbonated soft drinks last year, which totals 828 eight-ounce servings per capita (per Beverage Digest). In return for our money, we received the biggest source of calories in our diet.

Soda pop represents 24% of the drink intake for kids ages 11 to 14. According to Liquid Candy, a report published by the Center for Science in the Public Interest in Washington, D.C., teenage boys who drink soda consume an average of 32 ounces per day, which translates to 379 calories and the equivalent of 26 teaspoons of sugar per day. Girls in the same 13 to 18 age group average 23 ounces.

While sugar is a concern in itself, the problem with soda that relates to osteoporosis is **phosphorus**. Phosphorus in soda beverages disrupts the calcium balance in the body.

Does calcium supplementation help to strengthen bones?

The following abstract was printed in the *New England Journal of Medicine* Feb 16, 2006.

Calcium plus Vitamin D Supplementation and the Risk of Fractures

ABSTRACT

Background: The efficacy of calcium with vitamin D supplementation for preventing hip and other fractures in healthy postmenopausal women remains equivocal.

Methods: We recruited 36,282 postmenopausal women, 50 to 79 years of age, who were already enrolled in a Women's Health Initiative (WHI) clinical trial. We randomly assigned participants to receive 1000 mg of elemental calcium as calcium carbonate with 400 IU of vitamin D3 daily or placebo. Fractures were ascertained for an average follow-up period of 7.0 years. Bone density was measured at three WHI centers.

Results: Hip bone density was 1.06 percent higher in the calcium plus vitamin D group than in the placebo group ($P < 0.01$). Intention-to-treat analysis indicated that participants receiving calcium plus vitamin D supplementation had a hazard ratio of 0.88 for hip fracture (95 percent confidence interval, 0.72 to 1.08), 0.90 for clinical spine fracture (0.74 to 1.10), and 0.96 for total fractures (0.91 to 1.02). The risk of renal calculi increased with calcium plus vitamin D (hazard ratio, 1.17; 95 percent confidence interval, 1.02 to 1.34). Censoring data from women when they ceased to adhere to the study medication reduced the hazard ratio for hip fracture to 0.71 (95 percent confidence interval, 0.52 to 0.97). Effects did not vary significantly according to prerandomization serum vitamin D levels.

Conclusions: Among healthy postmenopausal women, calcium with vitamin D supplementation resulted in a small but significant improvement in hip bone density, did not significantly reduce hip fracture, and increased the risk of kidney stones. (ClinicalTrials.gov number, NCT00000611 [ClinicalTrials.gov])

This study failed to make an impact on bone health because it used **calcium carbonate**, which is not used well in the body for building bone but does seem to contribute to kidney stone formation. We recommend supplementation with **calcium lactate** derived from food sources which the body eagerly uses.

How is calcium used in for building bones?

In order to make healthy bone we must have the bone building materials! These include protein, calcium (in a form our bodies can metabolize, such as calcium lactate) and the essential vitamins that move calcium into the tissue, like vitamin D (which we make from sun exposure on the skin and cholesterol) and vitamin complexes of A and C.

Vitamin D is necessary for the proper absorption of calcium in the small intestine. In the absence of vitamin D, calcium is poorly absorbed, the bone matrix is deficient in calcium, and the bones are likely to be deformed or very weak. Vitamins A and C (the whole vitamin complexes, not just beta carotene and ascorbic acid) are needed for normal bone growth and development.

Is it just coincidence that thyroid problems are epidemic in America right beside the number of cases of osteoporosis? No! Normal thyroid function and balanced hormones are needed to metabolize calcium for healthy bone production.

What makes bones healthy?

Bone is comprised of many things; calcium is just one part of it. So without the other vital components then bone will not be healthy, regardless of how much calcium we consume!

Bone is 1/3 protein, so we must eat good protein to make bone. Some people are afraid to eat animal protein because of cholesterol issues. Well, in order for the body to make Vitamin D, we need cholesterol, because Vitamin D is a cholesterol-based vitamin. Also keep in mind that you will denature the protein by overcooking it, so eat the steak medium rare for goodness sake!

Bone is 1/3 water, so we must drink water to maintain healthy bone. We found earlier that drinking soda can cause harm to the bone by upsetting the mineral balance of calcium. Worse yet, soda will ultimately dehydrate you, causing imbalances of other minerals. The best water to drink is natural spring water. Spring water is rich with minerals in natural molecular bonds, especially calcium bicarbonate which your body really likes. In fact, the different taste of spring waters is specifically due to the varying concentrations of minerals. (Evian® spring water has more calcium than most bottled spring waters.) You really don't want to drink distilled water because the process of distillation removes minerals to achieve a neutral pH. Drinking distilled water will dehydrate and demineralize you.

Bone is 1/3 minerals, so minerals must be present to give strength to the bones. Although calcium is the most important mineral—accounting for approximately 85% of the total mineral count—you must have other trace minerals to add strength to the bone. Eating whole foods such as vegetables and fruits and proteins you will ensure that you are getting minerals in balance the way nature provides.

What actions can you take right now to strengthen your bones?

There are many factors that play a part in osteoporosis. The best thing you can do is have a healthy diet. What is that? Everyone has a different opinion as to what a healthy diet might be, but let's just reiterate that green leafy vegetables and natural spring water are good sources of calcium.

1. Stop drinking soda.
2. Drink plenty of water.
3. Eat protein (please don't over cook it, as that will denature many of the amino acids).
4. Eat mineral rich fruits and vegetables (such as, cucumbers, celery, and lettuces).
5. Exercise (just walking 20 minutes a day makes a difference).
6. Supplement with [Standard Process®](#) whole food formulas.

Start today. Don't wait till you are told you have osteopenia or osteoporosis. If you have questions about your bone health, consult with Dr. Keppel, DC, at your next visit.

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