

What You Should Know About Nutrition and Osteoporosis

If someone offered you the chance to avoid a disease that causes your bones to break, would you take it? Well, the disease is osteoporosis, and you have the opportunity to prevent or delay it by taking a few simple measures, including nutrition and exercise. Although osteoporosis—or thinning bones—primarily occurs in women over age 50 years, your best chance for prevention is when you're young. So whatever your age, you need to be informed about nutrition and osteoporosis.

The Brittle Bone Disease

Osteoporosis is a condition in which the bones become thinner and weaker. Throughout your life, your bones are constantly in the process of building up and breaking down. In healthy people, up until about age 30 years, more bone is formed than is broken down. Your bones are strongest around this age group. As you age, however, more bone is broken down than is built up. Bone loss occurs even more rapidly during the first few years of menopause. After menopause, bone loss still continues, but at a slower rate. If you start out with strong bones at a young age, you have less chance of developing osteoporosis when you get older.

Osteoporosis affects about 44 million Americans, more than half of whom are over age 50 years old. Ten million Americans already have osteoporosis, and eight out of 10 of them are women. Half of all women over age 50 years will have an osteoporosis-related fracture.

This Patient Handout was prepared by Diane E. Judge, APN, CNP, using materials from the National Institutes of Health (<http://www.nih.gov>).

Factors in your personal and health history make it more or less likely that you will develop osteoporosis. Some of these can't be changed, so it's important to control the factors that you can alter. Women are more likely to develop osteoporosis than men, and aging increases your risk. White and Asian women are more likely than black and Latino women to get osteoporosis. Women whose mothers had fractures due to osteoporosis also may have an increased likelihood. These are all risk factors that cannot be changed.

However, there are a number of risk factors that you can change. Women who have infrequent or no periods, who use certain medications (steroids, anti-seizure medications), who have anorexia or low body weight, or who are confined to bed for a long period of time, should discuss osteoporosis prevention with their health care providers. In addition, people who smoke are at higher risk for osteoporosis as well as heart disease, breathing problems, and cancer. Therefore, women who smoke have another important reason to quit. In addition to having healthier hearts and lungs, those who exercise regularly also have healthier bones than those who do not.

Tests such as a dual energy X-ray

absorptiometry (DEXA) scan or heel ultrasound can tell if you are developing or already have osteoporosis. But whether or not you get the test or have the condition, every woman should follow some basic nutritional principles. It's never too late for prevention, but the earlier you start, the better.

Calcium Is Key

The most important nutrient for strong, fracture-resistant bones is calcium. You can get calcium through food sources or supplements, or a combination of both. The recommended amount of calcium varies by age, but studies show that most Americans are not getting the recommended amount.

Dairy products are excellent sources of calcium. For example, an 8-oz glass of fat-free milk contains about 300 mg of calcium and an 8-oz container of fat-free yogurt contains approximately 425 mg. Cheese provides about 240 mg per 1-oz serving but, because of its high fat content, it should be consumed in moderation. Many foods are fortified with calcium, including orange juice, cereals, and breads; read the nutritional information to see how much is in each serving.

If you're lactose intolerant or just don't like or use dairy products, there are other dietary sources of calcium. Dark green leafy vegetables such as collard greens, broccoli, and spinach, and almonds, beans, and soybean products (tofu, soy milk, tempeh) contain calcium. Canned sardines and salmon with bones are also high in calcium.

If getting enough calcium in your diet is difficult, you can get part or all of your calcium from supplements. Most

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daily multivitamins do not contain an adequate amount of calcium, so you'll need to take a specific calcium supplement. For your body to absorb calcium efficiently, take supplements in divided doses, rather than all at one time. For instance, if you are a 36-year-old woman and your recommended calcium intake is 1,000 mg per day, take one 500-mg tablet in the morning and another one in the evening.

For most women, getting too much calcium either from food or supplements is not an issue as your body will simply eliminate any excess. However, in those who have specific medical conditions or who are taking certain medications, too much calcium can be hazardous to their health. It is always important to check with your health care provider or pharmacist before starting any supplements or implementing any dietary changes.

Add Vitamin D

Adequate amounts of vitamin D are necessary for your body to absorb calcium properly and for your bones to stay healthy. Your skin makes vitamin D when you're exposed to sunlight. However, sun exposure can cause skin cancer and dermatologists caution us to stay out of the sun, wear protective clothing, and use sunscreen daily. Also, in some areas, sunlight is in short supply during the winter months. Therefore, it makes sense to get adequate amounts of vitamin D from fortified foods or supplements.

The U.S. Recommended Daily Allowance of vitamin D is 200 IU for women aged 19 to 50 years; 400 IU for women aged 51 to 60 years, and 600 IU for women over age 70 years. Vitamin D is found naturally in some foods, such as high-fat fish (salmon, mackerel, sardines canned in oil, eel) and egg yolk, and is added to many others, such as milk and cereal. Read the labels to see how much vitamin D each serving contains. Another alterna-

Ideal Amounts of Calcium for Women and Children

Age Group	Ideal Amount of Calcium Per Day
Infants	
Birth to 6 months	400 mg
6-12 months	600 mg
Children	
1-5 years	800 mg
6-10 years	800-1,200 mg
Adolescents and young adults (ages 11-24)	
25 years to menopause	1,000 mg
After menopause	
Using estrogen	1,000 mg
Not using estrogen	1,500 mg
Over 65 years	1,500 mg

Source: Optimal Calcium Intake. National Institutes of Health Consensus Statement, June 6-8, 1994.

tive is to take a calcium supplement that also contains vitamin D. If you do take a vitamin D supplement, be careful not to take an excess amount. Unlike calcium, too much vitamin D can cause serious health problems.

Research suggests that vitamin D may be even more important for older women. In addition to helping absorb calcium and having a direct effect on bones, it may also help prevent falls that lead to fractures, perhaps by strengthening muscles.

Other Dietary Influences

Although calcium and vitamin D are the most important dietary factors for bone health, there are some other dietary principles that can influence your bones. For starters, limit your sugar intake; some studies show that a high-sugar diet can reduce the calcium content in bones.

If you drink alcohol, don't have more than seven alcoholic beverages a week. Although the reason is unknown, women who drink more have an increased risk of developing osteoporosis.

In addition, avoid high protein, phosphorus, and sodium intakes. In some women, eating unusually large amounts

of protein (meat, chicken, fish) or sodium (table salt, salty foods and snacks) contributes to bone loss. Phosphorus is found in soft drinks and may decrease calcium levels in the blood of children. Water, nonfat milk, and 100% fruit juice are more healthful choices.

Also, try soy. In addition to supplying calcium, soy products may have a direct beneficial effect on bones.

Remember, following a healthy diet and getting regular exercise are important preventive measures in reducing your risk of developing osteoporosis.

Resources

National Institutes of Health Osteoporosis and Related Bone Diseases National Resource Center

<http://www.osteoporosis.org/osteofact.html>

National Institute of Child Health & Human Development

<http://www.nichd.nih.gov/milk/whyca/otherf.cfm>

Medline Plus

<http://www.nlm.nih.gov/medlineplus/druginfo/uspdi/202108.html>