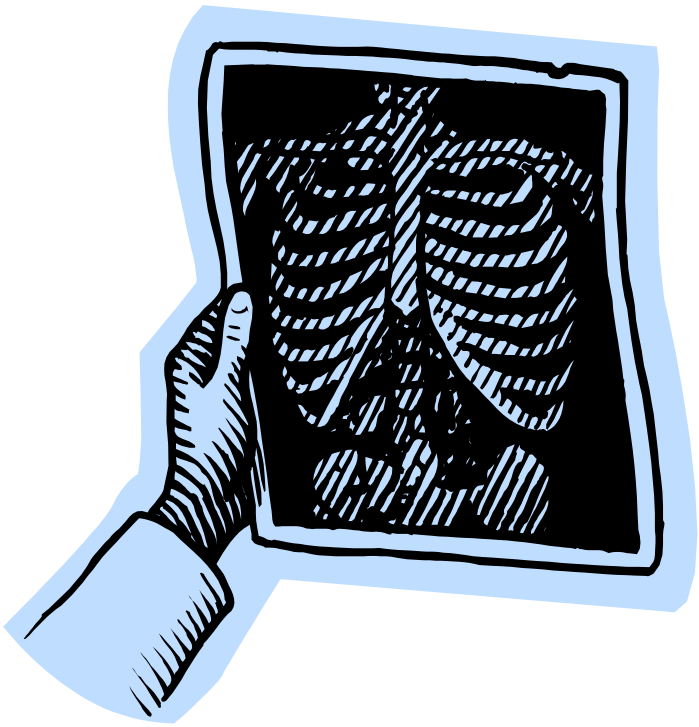
Fuel 4 Women

Osteoporosis



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What is Osteoporosis?

Osteoporosis, or porous bone, is a disease characterized by low bone mass and structural deterioration of bone tissue, leading to bone fragility and an increased susceptibility to fractures, especially of the hip, spine and wrist, although any bone can be affected.

Osteoporosis is a major public health threat for an estimated 44 million Americans or 55 percent of the people 50 years of age and older. In the U.S. today, 10 million individuals are estimated to already have the disease and almost 34 million more are estimated to have low bone mass, placing them at increased risk for osteoporosis. Eighty percent of those affected by osteoporosis are women.

- Twenty percent of non-Hispanic white and Asian women aged 50 and older are estimated to have osteoporosis, and 52 percent are estimated to have low bone mass.
- Ten percent of Hispanic women aged 50 and older are estimated to have osteoporosis, and 49 percent are estimated to have low bone mass.
- Five percent of non-Hispanic black women over age 50 are estimated to have osteoporosis; an estimated additional 35 percent have low bone mass that puts them at risk of developing osteoporosis.

Bone Basics

The skeleton provides structural support for muscles, protects vital organs, and stores the calcium essential for bone density and strength. Bone is a complex, living tissue. Until the age of about 30, you build and store bone efficiently. Then, as part of the natural aging process, your bones begin to break down faster than new bone can be formed.

In women, bone loss accelerates after menopause, when your ovaries stop producing estrogen - the hormone that protects against bone loss. The critical years for building bone mass are from prior to adolescence to about age 30. Some experts believe that young women can increase their bone mass by as much as 20 percent - a critical factor in protecting against osteoporosis.

Risk Factors

- **Age.** The risk for osteoporosis increases with age. Bones become less dense as you age.
- **Gender.** Women are at a higher risk to develop osteoporosis. Women have less bone tissue and lose bone more rapidly than men because of the changes involved in menopause.

- **Family History.** Young women whose mothers have a history of vertebral fractures also seem to have reduced bone mass.
- **Race.** Caucasian and Asian women are more likely to develop osteoporosis. However, African American and Hispanic women are at significant risk for developing the disease.
- **Bone Structure and Body Weight.** Small-boned and women less than 127 pounds have a larger risk.
- **Menopause.** Normal or early menopause (brought about naturally or because of surgery) increases your risk of developing osteoporosis. In addition, women who stop menstruating before menopause because of conditions such as anorexia or bulimia, or because of excessive physical exercise, may also lose bone tissue and develop osteoporosis.
- **Lifestyle.** Smoking cigarettes, drinking too much alcohol, and not receiving enough calcium in your diet increases the risk of osteoporosis. Not getting enough weight-bearing exercise also puts you at greater risk.
- **Medications.** Medications to treat disorders such as rheumatoid arthritis, endocrine disorders (i.e. an under-active thyroid), seizure disorders and gastrointestinal diseases may have side effects that can damage bone and lead to osteoporosis.

Calcium and Vitamin D

Calcium plays an important role in maintaining bone. Calcium alone cannot prevent or cure osteoporosis, but it is an important part of an overall prevention or treatment program. Although calcium helps prevent osteoporosis, many women consume less than half of the daily recommended amount of calcium.

Vitamin D plays a major role in calcium absorption and bone health. The relationship between calcium absorption and vitamin D is similar to that of a locked door and a key. Vitamin D is the key that unlocks the door and allows calcium to leave the intestine and enter the bloodstream. Vitamin D also works in the kidneys to help reabsorb calcium that otherwise would be excreted.

Experts recommend a daily intake of between 400 and 800 international units (IU). Do not take more than 800 IU per day unless your doctor prescribes it, since massive doses of vitamin D may be harmful.

RECOMMENDED CALCIUM INTAKES*	
Age	**Amount of Calcium**
Infants	
Birth - 6 months	210 mg
6 months - 1 year	270 mg
Children/Young Adults	
1 - 3 years	500 mg
4 - 8 years	800 mg
9 - 18 years	1,300 mg
Adult Women and Men	
19 - 50 years	1,000 mg
50 +	1,200 mg
Pregnant or Lactating	
18 years or younger	1,300 mg
19 - 50 years	1,000 mg

* Source: National Academy of Sciences, 1997

Calcium Rich Foods

Selected Calcium-Rich Foods				
Food Item	Serving Size	Calcium (mg)	Fat (g)	Calories
Milk				
Whole	8 oz.	290	8.9	156
1% milk	8 oz.	300	2.6	102
2% milk	8 oz.	297	4.7	121
Skim milk	8 oz.	302	0.4	86
Yogurt				
Plain fat-free (with added milk solids)	8 oz.	487	0.4	136
Plain low-fat (with added milk solids)	8 oz.	447	3.7	155
Fruit, low-fat	8 oz.	338	2.8	243
Frozen, vanilla, soft serve	½ cup	103	4.0	114

Food Item	Serving Size	Calcium (mg)	Fat (g)	Calories
Cheese				
American cheese	1 oz.	174	8.9	106
Cheddar Cheese	1 oz.	204	9.4	114
Cottage Cheese, 1% low-fat	1 cup	138	2.3	164
Mozzarella Cheese, part skim	1 oz.	183	4.5	72
Muenster Cheese	1 oz.	203	8.5	104
Parmesan Cheese, grated	1 tablespoon	69	1.5	23
Ricotta, part skim	½ cup	337	9.8	171
Ricotta, whole milk	½ cup	257	16.1	216
Ice Cream, Vanilla				
Low Fat	½ cup	91.7	2.8	91.7
High Fat	½ cup	86.6	12	178
Fish and Shellfish				
Sardines, canned in oil, drained, including bones	3.75 oz.	351	10.5	191
Salmon, pink, canned, including bones	3 oz.	181	5.1	118
Shrimp, canned, drained	3 oz.	50	1.7	102
Vegetables				
Bok Choy, raw (Chinese cabbage)	1 cup	74	0	9
Broccoli, cooked, drained from raw	1 cup	71.6	0.6	23.6
Broccoli, cooked, drained, from frozen	1 cup	94	0.2	50
Soybeans, mature, boiled	1 cup	261	12	254
Collards, cooked, drained, from raw	1 cup	226	0.6	49
Turnip greens, cooked, drained, from raw (leaves and stems)	1 cup	197	0.3	29
Tofu	½ cup	204*	5.6	97
Orange (navel)	1 whole	56	0.1	65
Orange Juice, fortified with calcium	8 oz.	300	0.1	100
Dried Figs	10	270	2.2	477
Almonds (Dry Roasted)	1 oz.	75	15	169
Sesame Seeds, kernels, toasted	1 oz.	37	13.6	161
Sunflower seeds, dried	1 oz.	33	14.1	162

* The calcium content of tofu may vary depending on processing methods. Tofu processed with calcium salts can have as much as 300 mg per 4 oz. Often, the label or the manufacturer can provide more specific information.

Note: You also may increase the calcium in foods by following these suggestions:
1. Add nonfat powdered milk to all soups, casseroles, and drinks.
2. Buy juices, cereals and breads that are fortified with calcium.
3. Replace whole milk and cream with skim and low fat milk in recipes.
4. Replace sour cream with yogurt in recipes.
5. Some bottled waters contain calcium, so check the labels for more information.

Source: USDA Nutrient Data Laboratory, 2000

Calcium Supplements

Calcium is a mineral found in many foods and adequate calcium intake is important because the human body cannot produce calcium. Even after reaching full skeletal growth, adequate calcium intake is important because the body loses calcium every day through shed skin, nails, hair, and sweat as well as through urine and feces. This lost calcium must be replaced daily through the diet. When the diet does not contain enough calcium to perform these activities, calcium is taken from the bones, the storage area for calcium.

The National Academy of Sciences and the National Osteoporosis Foundation recommend daily calcium intakes of 1000-1200 mg/day for adult men and women. According to experts, food is the best source of calcium; however, most Americans do not have enough calcium in their diets. Fortunately, calcium-fortified foods and calcium supplements can fill the gap, ensuring that the daily calcium requirement is met. The amount needed from a supplement depends on how much calcium is consumed from food sources.

Choose calcium supplements that are known brand names with proven reliability. Look for labels that state "purified" or have the USP (United States Pharmacopeia) symbol. Since applying for the USP symbol is voluntary, however, many fine products may not display this symbol. Avoid calcium from unrefined oyster shell, bone meal or dolomite without the USP, as these historically have contained higher lead levels or other toxic metals.

Exercise

Weight-bearing and resistance exercises are important for building and maintaining bone mass and density. Weight-bearing exercises are those in which your bones and muscles work against gravity. This is any exercise in which your feet and legs are bearing your weight. Jogging, walking, stair climbing, dancing and soccer are examples of weight-bearing exercise with different degrees of impact. Swimming and bicycling are not weight-bearing.

Resistance exercises or activities that use muscular strength to improve muscle mass and strengthen bone also influence bone mass and density. These activities include weight lifting, such as using free weights and weight machines found at gyms and health clubs.

5 Steps to Bone Health

1. Get your daily recommended amounts of calcium and vitamin D.
2. Engage in regular weight-bearing exercise.
3. Avoid smoking and excessive alcohol.
4. Talk to your doctor about bone health.
5. Have a bone density test and take medications when appropriate.

References

1. National Osteoporosis Foundation. *Fast Facts*. Retrieved on 20 July 2005 from http://www.nof.org/osteoporosis/diseasefacts.htm
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5. National Osteoporosis Foundation. *Prevention. Calcium Supplements.* Retrieved on 20 July 2005 from http://www.nof.org/prevention/calcium_supplements.htm
6. National Osteoporosis Foundation. *Prevention. Exercise for Health Bones.* Retrieved on 21 July 2005 from http://www.nof.org/prevention/exercise.htm
7. National Institutes of Health Osteoporosis and Related Bone Diseases-National Resource Center. *Calcium & Vitamin D: Important at Every Age.* Retrieved on 22 July 2005 from http://www.osteo.org/newfile.asp?doc=r301i&doctitle=Calcium+%26+Vitamin+D%3A+Important+at+Every+Age&doctype=HTML+Fact+Sheet#Calcium%20Rich%20Foods

Resources

1. Florida Osteoporosis Board.
   http://www.osteoporosisflorida.org/

2. Florida Department of Health.
   http://www.doh.state.fl.us/family/osteo/default.html

3. **Central Florida AHEC**
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