

Osteoporosis Essentials for Primary Health Care Providers

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Approximately one in four women and one in eight men over the age of 50 develop osteoporosis. These are alarming statistics, as 25 percent of individuals who sustain an osteoporotic hip fracture die within the first year from related complications. In many cases, patients are admitted to the hospital after a hip fracture. Fluid can pool in their lungs, creating a ripe environment for bacteria to flourish. In such cases, they often develop pneumonia and die from the infection. This happens to be a very common scenario.

In Canada, more women die each year from the consequences of hip fractures than from breast and ovarian cancer combined.¹ Studies indicate that much of this problem is preventable by using proper nutrition and lifestyle practices, including ingesting sufficient amounts of calcium, vitamin D, magnesium and protein, as well as other nutrients such as zinc, manganese, copper, silicon, soy isoflavones, vitamin K, folic acid as well as vitamin B₆.

Studies suggest that, in particular, suboptimal intake of calcium and vitamin D account for a high percentage of osteoporosis cases. To prevent osteoporosis, the National Institutes of Health states that young men and women between the ages of 11 and 24 should consume 1,200 mg of calcium per day. For women ages 25 to 50, the recommendation is 1,000 mg per day; women over 50 (not using hormone replacement therapy) should increase their intake to 1,500 mg per day. Men between 25 and 65 years of age should consume 1,000 mg per day and increase their calcium intake to 1,500 mg per day after age 65. On average, the majority of adults in our society fall short of their daily calcium needs by at least 500 mg. As such, most people should increase their intake of calcium-rich foods (see calcium and vitamin D food charts below) and consider taking a high-potency multivitamin/mineral supplement that contains 500 mg of elemental calcium per day. In many cases, an additional bone-support supplement containing another 500 mg of calcium and other bone-support nutrients may be required to optimize osteoporosis prevention, based upon one's age and dietary patterns.

In the case of vitamin D, which is necessary for the absorption and utilization of calcium, a high-potency multivitamin/mineral supplement should contain 400 IU of vitamin D. This amount appears to be adequate up to age 40-45, at which point many osteoporosis and cancer experts suggest increasing vitamin D supplementation to 800-1,000 IU per day. This dosage has been shown to decrease hip fractures up to 43 percent and to increase vitamin D blood levels into a range associated with decreased risk of colon, breast and prostate cancer. Vitamin D stimulates the production of a carrier protein within intestinal cells that is responsible for the absorption of calcium from the intestinal tract into the bloodstream.

Once osteoporosis is present, diet, supplementation and exercise are not sufficient therapy. If osteoporosis has already developed, medical treatments beyond diet, exercise and supplementation

may be necessary to prevent the occurrence or recurrence of bone fractures and related life-threatening consequences. This usually involves the use of antiresorptive drugs, which help to slow down the further loss of calcium from bone. For patients who have normal bone density or osteopenia (some bone loss, but not yet considered osteoporotic), nutrition, exercise and supplementation are the primary interventions that should be in place to prevent osteoporosis development. For this reason, it is imperative that you ensure a bone-density assessment has been performed on all patients who meet the inclusion criteria for bone-density evaluation. Only a bone-density assessment can determine if an individual has developed osteoporosis or if they are at high risk for developing this condition at some point in the near future.

As such, you should ask all of your patients the following questions. If they answer "yes" to any of the following questions, a bone-density assessment should be undertaken, if one has not been performed within the past two years.

- Are you a woman over the age of 50?
- Are you a woman who entered into early menopause (40-45) or premature menopause (before 40)?
- Are you a woman who has had both ovaries surgically removed before normal menopause (age 45-55)?
- Are you a woman under 45 years of age who routinely misses menstrual cycles or has greatly diminished menstrual flow due to estrogen and/or progesterone deficiency?
- Have you ever suffered from anorexia or bulimia?

Food	Portion Size	Amount of Calcium (mg)
Low-fat yogurt	1 cup	415
Low-fat milk (nonfat, 1%)	1 cup	300
Low-fat cottage cheese	1/2 cup	75
Sardines with bones	3 oz	370
Salmon with bones (canned)	3 oz	165
Processed tofu with calcium sulfate	4 oz	145
Canned shrimp	3 oz	100
Cooked lentils	1 cup	75
Chicken breast	3 oz	10
Tuna	3 oz	5
Collard greens	1/2 cup	180
Spinach	1/2 cup	85
Stalk of broccoli	1 medium	70
Orange	1 medium	55
Green beans	1/2 cup	30
Lettuce	1/2 head	15
Orange juice	1/2 cup	10
Apple	1 medium	10
Whole wheat bread	1 slice	20
Cooked spaghetti	1 cup	15
Cooked rice	1/2 cup	10
Apricots, raw, dried	4-6 halves	24
Dates	3-4	22
Figs (canned)	3	35
Figs (dried)	2	56

Grapefruit	1 medium	40
Prunes, dried, raw	5	27
Raisins	1/4 cup	31
Raspberries	2/3 cup	40
Strawberries	1 cup	42
Roasted almonds	1 oz	80
Kale	1/2 cup	47
Baked beans	1/2 cup	78
White beans	1/2 cup	96
Dry-roasted soybean nuts	1/2 cup	232

Food	Portion	Amount of Vitamin D (IU)
Low-fat cheese (less than 4% milk fat)	3 1/2 oz	12-15
Halibut	3 1/2 oz	44
Herring	3 1/2 oz	320
Mackerel (raw)	3 1/2 oz	1100
Salmon (fresh)	3 1/2 oz	450
Salmon (canned)	3 1/2 oz	1300
Shrimps	3 1/2 oz	150
Oysters	3-4 medium sized oysters	5
Nonfat, skim milk and 1% milk (vitamin D fortified)	8 oz	100

Are you a woman who, at some time in your life, exercised excessively or competitively to the point that your body fat was very low?

- Have you undergone treatment with oral glucocorticosteroid drugs (e.g., prednisone, cortisone) for more than three months at any time during your life?
- Have you ever been diagnosed with hyperparathyroidism?
- If you are a woman, did your mother or perhaps a sister develop osteoporosis?
- Are you a man over 65 years of age?
- Are you older than 45 and your doctor has told you that you are underweight?
- In general, do you have poor muscular development and strength?
- Have you ever taken anticonvulsant medication for more than two years?

Calcium and Vitamin D From Low-Fat Food Sources

The food charts included in this article provide values for calcium and vitamin D from healthy foods that are low in saturated fat. You may wish to have your patients fill out a seven-day diet history from which you can estimate their daily average of intake of these two vital bone-support and cancer-prevention nutrients. If daily intake falls short of the desirable levels for their age and gender, you should strongly consider setting out a strategy to help them acquire the missing levels of calcium and/or vitamin D from healthy food choices and/or supplementation as a crucial aspect of a disease prevention and longevity program. Ingesting sufficient and optimal amounts of calcium and vitamin D has the potential to extend a patient's life and greatly reduce the risk of certain life-threatening degenerative diseases such as osteoporosis and colon cancer (and in the case of vitamin D alone, breast and prostate cancer, as well as multiple sclerosis).

Note that other than vitamin D-fortified dairy products, the only other good source of dietary vitamin D

is fish that feed on plankton living near the surface of the sea, which is exposed to sunlight. Sunlight, in turn, stimulates the production of vitamin D in plankton. Exposure of human skin to direct sunlight also stimulates the production of vitamin D within the skin. However, in cold climate areas (all regions north of the midpoint of the United States) there is insufficient sunlight intensity from October to May to produce vitamin D in the skin to any appreciable degree. Thus, individuals living in these areas of North America must pay special attention to acquiring optimal amounts of vitamin D from any combination of vitamin D-fortified dairy products, fish, seafood and vitamin D-containing supplements. The same is true for individuals living far south of the equator (in the Southern Hemisphere) in climates that have cold winters lasting more than two to three months.

Reference

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Other Resources

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