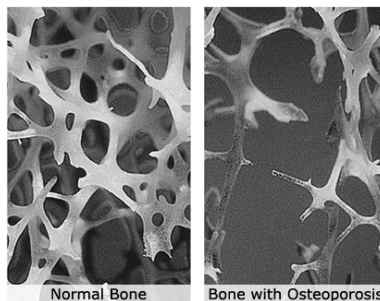


**Fact:** Based on figures from hospitals and nursing homes, the estimated national direct expenditures for osteoporosis and related fractures total \$14 billion each year.

Misunderstanding sometimes occurs when people talk about osteoarthritis and osteoporosis. These two chronic ailments differ in causation, diagnosis, treatment, and prevention. Osteoarthritis (OA), its causes, treatments and prevention, was discussed in the January, 2008 WWURA Newsletter. Briefly, as a recap, osteoarthritis is mainly related to aging but other factors (e.g., mechanical, chemical and genetic) can lead to OA. The cartilage between bone joints wears away, causing bone to rub against bone. Symptoms can include deep aching joint pain (especially after exercise), grating of the joint, joint swelling, limited movement, and morning stiffness.

The word **osteoporosis** literally means bone (“osteo”) that is porous or filled with holes (“porosis”). By the age of 80, women have lost about 40 percent of their peak adult bone mass and men have lost about 25 percent. Arthritis Foundation [http://www.arthritis.org/disease-center.php?disease\\_id=18&df=resources](http://www.arthritis.org/disease-center.php?disease_id=18&df=resources). “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 risk of fractures of the hip, spine, and wrist. Men as well as women are affected by osteoporosis, a disease that can be prevented and treated” ([http://www.niams.nih.gov/Health\\_Info/Bone/Osteoporosis/default.asp](http://www.niams.nih.gov/Health_Info/Bone/Osteoporosis/default.asp)). Osteoporosis is more likely to develop in people who did not reach their optimal peak bone mass during their bone-building years. Think about how physically active you were when you ten or eleven years of age!



Bone is living, growing tissue and is made mostly of collagen. This protein provides a soft framework, and with calcium phosphate, it adds strength and hardens the skeleton framework. “This combination of collagen and calcium makes bone both flexible and strong, which in turn helps bone to withstand stress. More than 99 percent of the body’s calcium is contained in the bones and teeth. The remaining 1 percent is found in the blood” (NIH).

Throughout one’s lifetime, old bone is removed (resorption) and new bone is added to the skeleton (formation). During childhood and teenage years, new bone is added faster than old bone is removed. As a result, bones become larger, heavier, and denser. Bone formation outpaces resorption until peak bone mass (maximum bone density and strength) is reached around age 30. After that time, bone resorption slowly begins to exceed bone formation. NIH

**Risk factors that cannot be changed:**

- **Gender.** Women have less bone tissue and lose bone faster than men (menopause is a factor).
- **Age.** Bones become thinner and weaker as one ages.
- **Body size.** Small, thin-boned women are at greater risk.
- **Ethnicity.** Caucasian and Asian women are at highest risk. African American and Hispanic women have a lower but significant risk.

- *Family history.* People whose parents have a history of fractures seem to have reduced bone mass and may be at risk for fractures.

***Risk factors that can be changed:***

- *Calcium and vitamin D intake.* Diet low in calcium and vitamin D makes one more prone to bone loss.
- *Medication use.* Long-term use of glucocorticoids, corticosteroids, and some anticonvulsants can lead to loss of bone density and fractures.
- *Lifestyle.* An inactive lifestyle or extended bed rest tends to weaken bones.
- *Cigarette smoking.* Smoking is not healthy for bones. For example, women who smoke tend to have earlier onset of menopause and tend to be less physically active.
- *Alcohol intake.* Excessive consumption of alcohol increases the risk of bone loss and fractures.

**Current research studies show that weight bearing activities, in particular, weight lifting exercises can build bone mass or lessen bone resorption. It is not too late to take part in programs like the YMCA Silver Sneakers, Western’s Mature Adult program or other weight lifting and strength training programs.**

The American College of Sports Medicine in its Current Comments section provides some information about strength training for bones, muscle and hormones. Primary site is: [http://www.acsm.org/AM/Template.cfm?Section=Current\\_Comments1&Template=/CM/ContentDisplay.cfm&ContentID=8031](http://www.acsm.org/AM/Template.cfm?Section=Current_Comments1&Template=/CM/ContentDisplay.cfm&ContentID=8031)

**Osteopenia: Risk for Osteopenia:** family history of osteoporosis, being thin, being white or Asian, getting limited physical activity, smoking, regularly drinking cola drinks, and drinking excessive amounts of alcohol.

**Explanation of Osteopenia:**

Bones naturally become thinner as people grow older because, beginning in middle age, existing bone cells are reabsorbed by the body faster than new bone is made. As this occurs, the bones lose minerals, heaviness (mass), and structure, making them weaker and increasing their risk of breaking. All people begin losing bone mass after they reach peak BMD at about 30 years of age. The thicker your bones are at about age 30, the longer it takes to develop osteopenia or osteoporosis.

<http://www.webmd.com/osteoporosis/tc/osteopenia-overview>

The October 2009 Consumer Reports *On Health* provided cogent information about BMD testing and risks and benefits of drugs promoted in the media (e.g., Fosamax and Boniva). In summation, it reported several side effects that can occur (e.g., inflammation of esophagus and less often muscle pain and destruction of jawbone). Research reported in the article indicated that even leg fractures might occur with use of these drugs. Bottom line, weight bearing exercises and appropriate intake of calcium and vitamin D are highly recommended!

**Fact or Fiction:** “Calorie-free” on a food label means the food product contains no calories per serving. For answer to this statement, check elsewhere in this Newsletter.

**Fiction:** According to the Federal Registry for food labeling, **“Calorie-free” means fewer than 5 calories per serving. It does not mean there are no calories. Read the label, set a better table!**