

## **Exercise and Osteoporosis**

**By Tracy Anderson**

*The information contained in this article is your personal knowledge and is not meant to replace information provided by a qualified health care practitioner.*

Osteoporosis is a bone disorder in which bone density decreases to a critically low level, often resulting in frequent fractures. Although osteoporosis can occur as the result of an endocrine disorder or malignancy, it is more often associated with the aging process. After attaining maximal bone mass at about age 30, the rate of bone loss for both sexes is approximately 0.5% per year, and in menopausal women it can increase to about 1% per year or more<sup>1</sup>.

The development of osteoporosis is related to hormonal levels, physical fitness and general nutrition. Exercise can help to prevent bone loss and may serve to prevent or delay the progression of osteoporosis. Poor nutrition or an age related decrease in the intestinal absorption of calcium, because of deficient activation of vitamin D, can contribute to osteoporosis, especially in the elderly.

Regular exercise, proper nutrition, and adequate calcium intake are important factors in prevention of osteoporosis. Weight bearing exercises such as walking, jogging, rowing and resistance training are important in the maintenance of bone mass. It is well documented that weight bearing activities and muscular contractions that increase mechanical loading of bones, increases bone density. Studies have shown that athletes who participate in weight bearing sports have the highest bone density.

In the past decade, special attention has been given to weight bearing exercises, because it has been shown to influence bone density and to help prevent, or counteract, the loss of bone during aging. Achieving a high bone mass during adolescence is very important in preventing osteoporosis later in life.

Exercise programs should include aerobic and anaerobic type training using load bearing activities. Circuit training, strength bands, machines and cables are recommended for those who may be affected by osteoporosis, and are beginning a training program. Exercising the full range of motion, with high repetitions will help increase the blood flow to the working muscles, tendons, ligaments and bone tissue.

The weight used during exercises does not have to be maximal. If you, or one of your clients, are affected by osteoporosis, the exercises should start light, and proper form should be a main goal. Using standard isolation exercises and paying attention to how your body absorbs any excess force will yield the best benefits with minimal risk of injury. This will allow your body to move in its correct plane of motion, and keep undue stress off of joints. Most isolation exercises will not cause compression of a joint, or bone, and the contraction will still have benefits to the bone. Improper form, too much weight or momentum can cause a hair line fracture, and halt any progress. Special attention should be paid attention to the “feel” of the movement and contraction. Isometric contractions at the end of the range of motion will help increase intensity without increasing weight and thus risk of injury.

As the exercise program progresses, the introduction of compound exercises may be beneficial. However, exercises with your arms are over your head should be avoided. This can cause compression of the back, and balance and stability can become an issue. As the weight increases, be sure to maintain proper form and controlled motion. Poor

tendon attachments are often associated with osteoporosis, and the beginning program should be long enough to ensure the strengthening of these tendon and ligaments.

Proper nutrition and supplementation will also help, but this should be provided by a qualified nutritionist or physician. Maintaining open communication with your physician will ensure proper healing, and if your program is working for you.

Questions and comments are always welcome, I can be reached at [www.LFNOnline.com](http://www.LFNOnline.com). If you have a topic of interest, I would be happy to consider it for this column.