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"treating the cause of your problem, not just the symptoms"

Exercise Can Reduce Risk of Osteoporosis

Exercise is an extremely important factor both in preventing osteoporosis and in decreasing the risk of fractures in those with osteoporosis. Almost any type of physical activity has some benefits to health. In terms of osteoporosis, however, the best types of activity are those that affect bone mass or those that decrease the risk of fracture by improving muscular strength, balance, and coordination.

Osteoporosis is not an inevitable part of aging. Bone mass, muscle strength, flexibility, and coordination all improve with exercise. To better understand the relationship between exercise and your bones, you must first know what bones are - and aren't. Bone is living tissue, not a lifeless structure that only supports your muscles and flesh. In fact, bone, like other body tissue, changes through a person's life.

During childhood and adolescence, bones grow primarily in size. During late adolescence and early adulthood, although bone is no longer increasing in size, it continues to gain density until it reaches "peak bone mass". Peak bone mass is a term used to describe the point at which bones have achieved their maximum strength and density. This occurs somewhere around the age of twenty. After that, bone mass usually stabilizes for several years and then starts to decrease.

In general, you lose about one percent of your total bone mass each year - in women the rate of loss increases dramatically after menopause to two to three percent per year. This loss in bone occurs because, as you age, new bone is not laid down at the same rate as older bone is lost; the result may be a thinning of the bones, referred to as "osteoporosis". When I describe the bones becoming thin, I do not mean they change shape. What actually happens is that the density of the bone decreases. For example, a piece of oak and a piece of pine may have the same shape and size, but one is much stronger and has a greater density. Your bones may start out as strong as oak, but as you age, the

bones can lose density and strength and end up more like a softwood such as pine.

Physical activity has been shown to be an important factor in increasing our peak bone mass and reducing the rate of bone loss with age. While all physical activities are beneficial, certain kinds are better for the bones than others.

The best type of exercise for increasing bone mass and reducing the rate of age related bone loss is “weight-bearing” activity. This is exercise that requires you to support your entire body weight. Walking, running, and games and sports such as badminton, bowling, tennis, basketball, volleyball, etc. are all examples of weight bearing exercises.

The best type of exercise, and one that we recommend most, is called “resistance exercise”. A common form of resistance exercise is weight training, done with barbells or dumbbells and/or various apparatuses available at gymnasiums and fitness centers. In addition to their effect on bone mass, muscular strengthening exercises will increase your coordination and balance, which will make you less likely to fall and fracture any bones. At our office, we have a personal trainer and rehabilitation assistant who teaches our clients what exercises are appropriate and how to do them safely. For the elderly or less mobile people, we teach them how to do resistance exercises in the pool at the Aquatic Center. While you cannot directly observe the weight-bearing and resistance exercises strengthening your bones, something very important is happening. The skeletal system is no different than any other system in your body. It adjusts to physical activity and also a total lack of it. Your bones respond to an increased load (pressure on the bones when exercising) by increasing in strength, density, and mass, or at least by returning bone that was previously lost. The reverse is also true: your bones respond to a decreased load by decreasing in bone mass. For example, studies of the racket arms of tennis players show a much higher bone mass than the non-racket arm, because the former encounters much more resistance. Finally, there have also been studies with osteoporotic women doing resistance exercises that showed that they not only prevented bone loss but may also have increased their bone mass.

Exercise alone cannot increase your bone mass, as it is calcium of the body that is used to build bone. In order to have healthy bones, you also need to have an adequate level of calcium and vitamin D intake.

Next week, we will discuss how much vitamin D and Calcium you should be consuming. We will also discuss who is at risk of getting osteoporosis.