

Are You Becoming "Bone Brittle"?

by Caroline Smith

You're exercising and feel a slight pain in your shin or foot. You keep going figuring it will get better. When the pain progresses and affects your workout, you decide to seek medical assistance. Upon a doctor's evaluation you are told you have a stress fracture. You find this hard to fathom as there was no direct trauma to the area that you can recall.

Your program is reviewed and it appears you exercise regularly — including stretching, buying new shoes frequently, and eating a reasonable diet. Additional questions provide some critical information concerning your diet. It appears most dairy products have been eliminated from your diet, since you felt it was the culprit in mucous development in your throat (research now indicates that the mucous could be due to wheat or other food intolerances). You may be experiencing osteoporosis.

Since dairy products are the most common food group for obtaining dietary calcium, elimination of them could potentially lead to some serious physical problems. Calcium is necessary for the maintenance of healthy bones and teeth, it keeps the heart beating regularly, helps to alleviate insomnia, assists the body in its metabolism of iron and aids your nervous system in impulse transmission.

Our bones are in a constant state of change, a process known as remodeling. This is where small quantities of old bones are lost through resorption (broken down and absorbed) while at the

same time new bone formation occurs. When the formation of bone does not keep pace with its resorption it is termed osteoporosis.

Osteoporosis, "porous bones," afflicts an estimated 24 million Americans and contributes to over one million fractures per year. It is more commonly noted in the older, white, fair-skinned, small framed female population who smoke. Other risk factors which increase a women's chance of getting osteoporosis are: alcoholism, sedentary lifestyle, childlessness, diabetes mellitus, low calcium intake, high protein intake, high phosphorous intake and/or a family history of the problem.

If you fall into several of these categories, you need to consider taking measures to slow the process. Although there is not a cure there are three options for treatment which have been successful. They are exercise, diet and hormone therapy.

Exercise

Within the exercise area it is interesting to note that osteoporosis is now becoming a problem with athletes possibly due to a reduction in calcium rich foods, low calorie diets in an effort to get lighter to race, or a decrease in the amount of impact aerobic activities being performed.

Since our bones develop their peak bone mass by the mid-20s it is very important to fulfill the necessary calcium requirement through these important development years, and continue to meet

the calcium needs as we grow older. After peak mass is met, the calcium that is lost is not completely replaced and over time the bone density diminishes. As a matter of fact by the time we are 60 years of age most women have only three-quarters of the bone mass they had in earlier years.

Exercise stimulates the activity of the osteoblasts, the cells that make the bone, while slowing the development of the osteoclasts, the cells that break down the bone. Impact aerobic activities helps to keep the bones dense due to the weight bearing stresses to the bone itself. In addition, the development of muscle can better protect the bone in the case of a fall.

Diet

How much is enough? The new RDA (recommended dietary allowances), printed in 1989, estimates that the absorption rate is about 40% and has derived 1200 mg for both sexes ages 11-24 as the guideline. For the older population the previous allowance of 800 mg is retained. The amount of calcium can easily be obtained if dairy products are included in the diet. Other food sources for obtaining calcium are: soybeans, sardines, salmon, peanuts, walnuts, sunflower seeds, dried beans, green vegetables and calcium fortified orange juice. A balanced diet will not only furnish calcium but other nutrients essential for good bone health. Should osteoporosis be a health issue, these guidelines may not be sufficient and it is best to seek medical attention.

Hormone Therapy

The final area of concern is postmenopausal women. The rate of decline in bone mineral is strongly dependent on estrogen status. The estrogen slows the rate of bone loss. The research by NRC (National Research Council) in 1989 found mixed evidence that supplementary calcium (1.5 to 2.5 g/day) could retard the rate of postmenopausal bone loss. The research indicated that calcium alone has only a small effect on bone loss but the combination of estrogen and calcium plus regular exercise is an effective treatment.

The area of osteoporosis has been one of multiple studies in the past few years

Some Examples of Calcium Contents of Foods

100mg

cottage cheese, 1/2 cup
nonfat dry milk, 1 tbsp
cheese pizza, 1 selection
shrimp canned, 3 oz.
tofu, 3 oz.
most nuts, 1 cup
raisins, seedless, 1 cup
broccoli, 1 stalk
mushrooms, 1 cup
blackstrap molasses, 1 tbsp

300mg

milk, nonfat, lowfat, whole,
chocolate or buttermilk, 1 cup
ricotta cheese, 1/2 cup
swiss cheese, 1 oz.

yogurt, fruit flavored, 1 cup
pudding or custard, 1 cup

200mg

most cheeses, 1 oz.
ice cream, 1 cup
macaroni & cheese, 1 cup
salmon, 3 oz.
mustard greens, 1 cup
collard greens, 1/2 cup
kale, 1 cup

400mg

yogurt, plain low-fat
or nonfat, 1 cup
milkshake, 10 oz.
sardines, 3 oz.

due to the large number of Americans affected. It is a crippling bone disease which can be managed through a proper exercise program and a sufficient dietary intake of calcium. These two factors can go a long way in contributing to healthy bones throughout life. If hormone therapy becomes a consideration, weigh all the advantages and disadvantages and include the above options for protecting the bone loss into your health plan. ■

Biographical Statement

Caroline Smith, M.S. has Bachelor degrees in Psychology and Nutrition and a Masters of Science in Exercise Physiology. She is President of SportSense Co., a company that specializes in consulting individuals and groups in the exercise and nutrition areas. She is also a consultant to the Las Colinas Sports Club.

A competitive triathlete for 11 years. She is sponsored by Plano Cycling and Fitness, Banke Bikes, Aerospoke Wheels, Avocet, Pyro Pedal Platforms, Barracuda Goggles, Urbanek Clothing, PowerBar, Stim-o-Stim, Sports Nutrition Source (SNS), and Jim Salih, massage therapist. She is presently working on a book, "The Weekend Triathlete".
