

Welcome

To the

Osteoporosis/Osteopenia
workshop

Sponsored by:

Darshan Center for Well being
&
Mahaiwe Chiropractic and Holistic
Services

The purpose of this workshop is to give an overview of osteoporosis and osteopenia in regards to its cause, prevention and supportive treatment.

There will be two parts to tonight's workshop.

1. **Dr. Lawrence Bronstein**, a doctor of chiropractic, certified nutritional specialist with a diplomate from the American Clinical Board of Nutrition will present dietary and nutritional aspects of osteoporosis/osteopenia prevention and support. At the end of a 20 min. presentation there will be time for questions and answers before we move to the second half of our workshop

2. **Randi Haskins** and **Cindy Tate** both licensed physical therapists from Darshan Center for Wellbeing will present an overview of prevention and treatment of osteoporosis/osteopenia as well form the aspects of exercise, postural balancing and weight bearing importance for bone support. At the end of this portion of the workshop there will be time for questions and answers as well.

Please realize that it is impossible to cover in depth many of the complexities of osteoporosis and osteopenia. Our hopes are to provide enough information to begin your own personal study towards what action steps may be best in your particular situation.

Osteoporosis is a condition of accelerated bone loss, enhanced bone fragility and increased susceptibility of bone fractures. It affects more than 20 million people in the United States and is responsible for well over 1 million bone fractures each year.

BONES ARE ALIVE!!!!

Deposition and absorption of bone
Remodeling of bone

Bone is continually being deposited by osteoblasts and is continually being absorbed by osteoclasts. A small amount of osteoblastic activity occurs in all living bone throughout the adult years.

Absorption of bone- Function of Osteoclasts

Bone is continually absorbed in the presence of osteoclasts. Normally, excepting growing bones, the rates of bone deposition and absorption are equal to each other, so that the total mass of bone remains constant.

Value of Continual Remodeling of Bone

The continual deposition and absorption of bone has a number of important functions.

- ❖ First, bone ordinarily adjusts its strength in proportion to the degree of bone stress.
- ❖ Second, Even the shape of bone can be rearranged for the proper support of mechanical forces by the deposition and absorption of bone in accordance with stress patterns.
- ❖ Third, because old bone becomes relatively brittle and weak, new organic matrix is needed as the old organic matrix degenerates. In this manner, the normal toughness of bone is maintained.

Indeed the bones of children, in whom rates of deposition and absorption are rapid, show little brittleness in comparison to the bones of old age, at which times the rates of deposition and absorption are slow.

Weight bearing such as the effects of gravity and exercise will stimulate osteoblastic activity and increase the formation of new bone cells. Nonactivity and excessive nonweight bearing will favor too much of the osteoclastic activity and not enough of the osteoblastic activity and this can lead to loss of bone.

Bone loss occurs with age in both sexes: However women experience a pronounced acceleration of bone loss for about 5 to 10 years following menopause. The results can be dramatic with the average woman losing 30% to 40 % of her bone mass by the age of 70.

REDUCING THE RISK OF OSTEOPOROSIS

Recent scientific evidence reveals good news: Much of this suffering can be preventable! Regular exercise and proper nutrition helps maintain good bone health and reduce the risk of osteoporosis. The two approaches to prevention of osteoporosis are:

1. Maximizing peak bone mass at skeletal maturity.
2. Minimizing age and menopause related bone loss.

MAXIMIZING PEAK BONE MASS AT SKELETAL MATURITY

Although osteoporosis is associated with old age, prevention begins in childhood. Bone mass is continually acquired during the first three decades of life, reaching the peak bone mass between the ages of 30 to 35. Studies have shown that maximizing calcium intake during the growth years and up to age 30 to 35 can greatly affect an individual's peak bone mass. Children and young adults who do not get adequate calcium may have sub-optimal bone density by the time they reach skeletal maturity. This not only creates a greater risk for fractures at a young age but also increases the chances of developing osteoporosis later in life.

MINIMIZING AGE AND MENOPAUSE RELATED BONE LOSS

It is never too late to think about reducing your risk of osteoporosis. There is now evidence that adequate intake of calcium may help to reduce the progression of the bone loss already begun in postmenopausal women. Because many of us do not receive adequate calcium in our diets and because our ability to absorb calcium declines with age, a calcium supplement may help to insure adequate calcium intake. One study group of postmenopausal women experienced a 43% reduction in bone loss when they supplemented their normal diet with 1000mg of calcium compared to a control group.

Calcium and vitamin D are the primary nutrients involved in healthy bone formation. In addition certain trace minerals such as zinc, copper and manganese are important for proper bone metabolism and magnesium plays an important role in calcium metabolism. Thus adequate calcium intake alone may not insure proper bone health. Good bone nourishment provides a broad range of essential nutrients needed to build and maintain strong bones.

FOODS RICH IN:

Calcium,

Dairy, especially yogurt
Dark Green Vegetables
Seafood,

Magnesium,

Raw Green Vegetables
Raw wheat germ
Apples
Seafood

Manganese,

Whole grains
Egg yolk
Nuts Seed
Green Vegetables

Vitamin D

Direct sunlight
Eggs
Butter
Fish Liver Oil

Overall, eating a healthy diet will help to increase available natural forms of the nutrients and minerals needed for bone support. An unhealthy diet will actually cause the body to lose nutrients such as calcium and magnesium and favor bone loss.

The relative acidity and alkalinity of foods has an effect on the absorption of key nutrients. The typical “American/Western” diet is high in animal protein and low in fruits and vegetables. This tends to produce a large amount of acid. The kidney response to this acid challenge is a net excretion of acid, as well as by excretion of ammonium and titratable acid, while the skeleton supplies a buffer by actively resorbing bone, which increases calcium excretion.

Meat and other high- protein animal foods, as well as most cereal grains and other starches produce an acid ash.

Fruits (except for cranberries and plums), vegetables (except for corn and lentils) and dairy products (except for cheese) produce an alkaline ash.

Generally vegetarian diets are more alkaline than omnivore diets and vegan diets are more alkaline than lacto-ovo vegetarian diets.

Excessive protein tends to promote osteoporosis.

Proper fats are extremely important for the support of proper bone formation.

High sugar diets will increase loss of calcium and has shown to decrease the mechanical strength of bones in growing animals.

Other foods such as coffee, excessive caffeine in general, soda and excessive carbonated drinks has shown to increase the loss of calcium and other minerals as well.

Excessive salt intake has also been associated with excessive loss of calcium.

In fact certain people with high blood pressure loss more calcium per a specific amount of salt intake than other people.

Alcohol abuse is believed to be an important risk factor for fractures and osteoporosis; it has been shown to be associated with decreased bone mineral density.

Soybeans, soy products and tofu

Soybeans are a unique dietary source of *isoflavones*. These substances have chemical structures similar to estrogen and are rich in potassium.

Soy and its related products have been shown to increase bone mineral content and density in the lumbar spine.

FRUIT

In a study of almost 1000 pre-menopausal women, lumbar spine and femoral trochanter bone mineral densities were lower in woman reporting a low intake of fruit in early adulthood than women with a medium or high intake.

Nutrients

There are three areas to look at in regards to nutrients,

- I. To prevent or reverse osteoporosis
- II. To reduce fracture risk
- III. To reduce calcium loss

To prevent or reverse osteoporosis

The following information will be a general recommendation with some guidelines in regards to the amount needed per nutrient. Please realize that these are general guidelines and this should be discussed with your healthcare provider for what may be necessary in your case.

Copper: 1 to 2 mg per day

Zinc: 15 to 50 mg per day depending on individual

Magnesium: could be 200 to 1200 mg per day

Omega 3/Omega 6 Fatty Acids:

Omega3: 180mg EPA / 120mg DHA

Omega6: Evening primrose oil 500mg Caps (7-10 % GLA)
6 to 8 daily

Vitamin D: 600 to 800 IU per day (may need to vary due to sun exposure.)

Vitamin K: 5 mg per day

Calcium: 1000 to 1500 mg per day which is more effective when combine with Vitamin D

Boron: 3 mg daily or a diet rich in fruits and vegetables

Manganese: 3 to 5 mg daily

Vitamin B6: 50 to 100 mg daily

Vitamin B12: 1000 UG

Vitamin C: 500 to 2000 mg per day

To Reduce Hip Fractures

Vitamin D, Vitamin K, Calcium.

COQ10: 30 to 90 mg daily

B6: 50 to 100 mg daily

Vitamin C

To Reduce Calcium Loss

Boron, Potassium Bicarbonate(60 to
120 mmol daily)

L-Lysine: 400 mg daily

Vitamin D

Vitamin K

Other important factors include the need to avoid intake of aluminum through pots and pans as well as deodorants and antacids. It is very important to rule out lactose intolerance, which may cause patients to fail to ingest adequate calcium. Proper digestion and absorption is extremely important and the use of hydrochloric acid and digestive enzymes in the form of plant enzymes could be extremely important.

ARE YOU AT RISK FOR OSTEOPOROSIS

A quick survey

Research studies point to a number of factors that may have a strong influence on peak bone mass and rate of bone loss, and thus the development of osteoporosis. Note if any of the following areas relate to you specifically:

- *Family history of osteoporosis
- *Thin or small body frame
- *Hysterectomy
- *Inadequate intake of Calcium, magnesium, etc.
- *Excess protein in the diet
- *Inadequate exercise or sedentary life style
- *Excessive alcohol consumption
- *High Caffeine consumption (coffee, soda, tea)
- *Regular use of drugs like Dilantin, Prednisone, Lasix, Synthroid or steroids
- *Anti ulcer medication
- *Regular use of antacids containing aluminum
- *Hyperparathyroidism, diabetes, thyrotoxicosis or Cushing's syndrome
- *White or Asian
- *Postmenopausal
- *Digestive problems
- *Smoking

If you checked two or more of the risk factors listed above, you may be at risk in regards to osteoporosis and osteopenia.

Recommendations for promoting optimal bone health

- ❖ Exercise regularly
- ❖ Reduce excessive protein and fat intake
- ❖ Increase intake of green leafy vegetables: Legumes, nuts and seed: and whole fresh foods
- ❖ Take calcium, magnesium, vitamin D and other nutrients discussed here
- ❖ Avoid excess alcohol consumption
- ❖ Don't smoke
- ❖ Avoid aluminum cookware and aluminum containing antacids or deodorants