

Bone Health

Calcium and Osteoporosis

Osteoporosis is a health problem that typically occurs in women following menopause. However, it has also been reported in young women with eating disorders who consume too little calcium-containing foods. Osteoporosis is the result of gradual loss of minerals, especially calcium, from the bones. Bones become weak and brittle and break easily. The hip, spine, and wrist bones are common sites of fractures in osteoporosis. Up to 20% of women with osteoporosis can die as a result of complications associated with fractures. Our bones are active and living. From adolescence until the mid-30's bone-building occurs. Calcium is therefore deposited in our bones. Peak bone mass is achieved in our mid 30's. In later years calcium is lost from bones. If a high peak bone mass has not been achieved by your mid-30's or if an abnormal amount of calcium is removed from the bone, osteoporosis may occur.

Risk factors for osteoporosis include:

- Being female - since most women have smaller bones and calcium reserves than men.
- A family history of osteoporosis.
- Low oestrogen levels - oestrogen, the female sex hormone, enables the bones to absorb calcium. Oestrogen levels are low during amenorrhoea and menopause and therefore these conditions can result in bone loss. Oestrogen levels are also low in women with a low body fat percentage, and underweight women.
- Smoking - smokers tend to reach menopause one to two years earlier than non-smokers therefore women smokers lose the bone building effects of oestrogen prematurely.
- Exercise extremes - can decrease oestrogen levels and lead to bone loss. Moderate exercise is very important for maintaining mineralised bone. Thirty minutes of weight bearing exercise four to five times a week is optimal for bone-building, but too much exercise destroys bones.
- Thinness - a very thin person does not benefit from the bone building effects of weight bearing exercise as much as a normal weight person does.
- Inadequate intakes of calcium, Vitamin D and phosphorous. Vitamin D is necessary for the absorption of calcium from the gut. Phosphorous combines with calcium in the bones to give strength and rigidity. Both of these substances are found in food. Therefore a restricted food intake will decrease Vitamin D & phosphorous intakes.
- Excess protein or salt in the diet increases the amount of calcium that is excreted by the kidneys and causes bone loss.

- Excessive fibre, coffee, tea, alcohol and cola intakes can reduce the amount of calcium absorbed.
- Moderation is the key.

Why are people with anorexia nervosa at risk for developing osteoporosis?

- Low oestrogen levels as evidenced by absent or irregular menstrual cycles caused by excessive exercise and/or low body weight.
- Low body weight decreases the beneficial effects of exercise.
- Restrictive eating means low intakes of calcium, Vitamin D and other bone building nutrients.
- The presence of purging may lead to loss of nutrients (including calcium) from the gut and to disturbances in the body. Such a disturbance can further decrease the absorption of calcium from foods.

Eating for Bone Health

The best way to prevent bone loss is to maximise the amount of bone laid down during the critical periods of adolescence and young adulthood. Attaining an optimal peak bone mass means that there are good reserves of calcium in the bone for menopause.

Here are some strategies for preventing osteoporosis:

- Weight restoration results in restored oestrogen levels.
- An adequate calcium intake. Young women need between 800 and 1200 mg of calcium each day. Calcium-rich foods include milk products, soy milk, canned salmon and sardines with bones, oysters, shrimp, almonds, broccoli and spinach. Eating calcium-rich foods is the best way to meet your calcium requirements because calcium from supplements is not efficiently absorbed. If you are lactose intolerant acidophilus-treated milk, live culture yoghurt and cheese and soy products are good calcium sources. Two or more servings of calcium rich foods each day (milk products or tinned fish with bones) should ensure that your calcium intake is adequate.
- An adequate Vitamin D supply. Vitamin D is produced by the body when the skin is exposed to sunlight and is also in foods such as cream, eggs and fish.
- Eat a variety of foods in moderation.