



Calcium, Bones and Osteoporosis

Calcium's Role

Calcium plays a vital role in nerve and muscle function, clotting of blood, enzyme regulation, insulin secretion and overall body strength. Bones and teeth store 99% of the body's calcium.

The blood calcium level is kept steady by the continual exchange of calcium between blood and bone. When insufficient calcium is obtained from food the body draws calcium out of the bones. This bone loss over years may lead to osteoporosis.

The bones may become weak, brittle and easy to fracture, particularly the bones of the wrist, hips and spine. Loss of height and curvature of the spine may also result, as may periodontal disease (deterioration of the jaw and teeth).

Causes of Osteoporosis

The major factors associated with the bone loss of osteoporosis appear to be:

- ◆ Insufficient calcium in the diet.
- ◆ Hormonal changes of menopause.
- ◆ Inactivity.

Other factors may include excess alcohol, protein, phosphorus, caffeine, salt, insufficient vitamin D and smoking.

Women are particularly vulnerable to osteoporosis (1 in 4 by the age of 60). They have about 30% less bone than men and also a greater bone loss after menopause due to decreased estrogen activity. Slender-framed women with less bone mass are at greater risk.

Early Prevention Needed

Osteoporosis usually begins in the thirties after maximum bone mass is reached. The stronger the bones at that time, the less trouble that is likely to occur later. There are often no symptoms of bone loss and 30-40 years may pass before the first fracture occurs.



Dieters who consume insufficient dietary calcium should be aware of their increased risk of osteoporosis, particularly slender-framed women.

Once damage is done, lost bone is not easily restored. Although hormone replacement therapy, calcium supplements and exercise after menopause may help to retard osteoporosis, young women may lessen the risk by consuming foods high in calcium and exercising regularly. These measures help to increase density and strength of the bones.

Daily Calcium Needs

The recommended daily calcium intake is:

Children:		700-800mg
Girls:	12-15 yrs	1000mg
	16-18 yrs	800mg
Women:	19-54 yrs	800mg
	54+	1000mg
	During pregnancy - add 300mg	
	During breastfeeding - add 400mg	
Boys:	12-15 yrs	1200mg
	16-18 yrs	1000mg
Men:	19+	800mg

Women with a high risk of osteoporosis, and who eat insufficient calcium-rich foods should consider a calcium supplement.

A condition effecting women called **Amenorrhea** (cessation of menstruation) can also be caused from lack of calcium intake. These hormonal changes cause decreases in *bone strength*. In the short term this means increased risk of stress fractures and in the long-term increased risk of osteoarthritis.

Dietary Sources of Calcium

Milk, yoghurt and cheese are the richest sources of calcium in the Australian diet. Canned sardines, tuna and salmon (with bones), sesame seeds, green vegetables such as broccoli and cabbage, and dried beans are also good calcium sources.