

## OSTEOPOROSIS

(See also [Calcium](#))

Osteoporosis is a disease of the skeleton which is characterized by bone mass reduction and associated with a deterioration of the architectural quality of the bone tissue. At that point, the bone becomes more fragile and is likely to fracture during a minimal accident or a spontaneous incident.

All of the body's bones are vulnerable, but fractures of the hip bone or the lower end of an arm (at the wrist level), and vertebral compressions are most frequent. Osteoporosis is a pathology that concerns older people and mostly women after menopause (30% of menopausal women suffer from it), when the secretion of oestrogens is significantly reduced.

Osteoporosis has become a major public health problem as populations live longer. The human and socio-economic cost is very high.

It is a multifactorial disease, depending mainly on endogenous factors upon which it is difficult to take action (genetic, age, sex, stoutness, hormonal status, race, age of puberty...) and exogenous factors (food, physical activity, environment, alcohol, tobacco...) which are easier to modify.

The best osteoporosis prevention is the achievement of optimum bone mass during childhood and especially during adolescence. Indeed, more than half of bone accretion takes place between the beginning of puberty and the end of adolescence. Bone structure depends on genetic factors, but also on environmental factors in which it is possible to intervene. Thus, many studies have shown that high calcium intake – about 1200 mg/day, make possible the optimization of the teenager's bone capital or peak bone mass.

Regarding menopause, the aim is to limit the bone loss which occurs inevitably. Prevention rests with oestrogen replacement therapy (to be discussed on a case-by-case basis), sufficient calcium and vitamin D intake, and an overall healthy life style including regular physical exercise, a moderate consumption of alcohol and coffee and avoidance of tobacco. These measures help retain bone mass and serve to decrease the risk of fracture. Nutritional prevention is efficient even among very old women as shown in a study in which high calcium intake –(1200 mg/day) associated with vitamin D treatment (800 UI/day) for 3 years, decreased the number of hip bone and wrist fractures in a group of 80-plus year- old women by 30%.

That is why experts recommend a daily intake of 1200 mg calcium to those 50 years old and over, and a higher intake of calcium to those who do not take hormonal treatment.

In reality, calcium consumption is often much lower than the recommended doses. Many teenagers have a much lower daily intake of calcium, meaning less than 1000 mg/day, and menopausal women have an average intake of only 700 calcium mg per day. In fact, one dairy product consumed at each meal would be sufficient to meet calcium requirements every day, thereby reducing the risk of osteoporosis.