

OSTEOPOROSIS

DEFINITION

Osteoporosis causes bones to weaken and become fragile. The condition develops over several years, to the point where bending or even a cough can cause a bone to break (fracture).

BACKGROUND INFORMATION

Amongst other things, the human skeleton functions as calc depository. It develops throughout childhood and youth until it reaches its maximal size (peak bone mass) between 20-30 years old. Peak bone mass depends mainly on genetics and diet, especially the amount of calc (calcium) and vitamin D intake. Calc can be found in dairy products, whilst vitamin D primarily in fatty fish. The skin can also get vitamin D from sunlight. Women with a lower peak bone mass risk suffering of osteoporosis later in life.

The skeleton is shaped by the physical impacts it is put through such as growth and exercise. Old bones decay and are replaced by new ones all throughout life, but the older one gets the less bone can be renewed; one can never reach the peak bone mass again, so over time the total bone mass reduces. The loss of bone mass is fairly constant, parallel with age.

This process is influenced by hormones, and especially the female sex hormone oestrogen. The latter can increase bone mineral content (BMC) which strengthens the bones. This correlation explains the loss of bone strength

Incidence of osteoporosis among women				
Age	50 – 59 years	60 – 69 y	70 – 79 y	80 – 89 y
Osteoporosis	Ca. 10 %	Ca. 30 %	Ca. 40 %	Ca. 35 %

and therewith higher risk of osteoporosis at menopause than before.

CAUSES

A low bone mass at a young age is a predisposition for osteoporosis later in life. In some rare cases the peak bone mass is so low that simply the decay with age sooner or later leads to osteoporosis. Light weight, lack of physical exercise, smoking, and lack of direct sunlight can speed the process.

A number of other conditions can also increase the risk of osteoporosis, especially those related to a lack of oestrogen such as anorexia and early menopause, metabolic syndromes, diseases in the adrenal cortex, and treatments with adrenal cortex hormone.

SYMPTOMS

Osteoporosis does not cause symptoms per say, but increases the chances of fracturing the forearm, spine, or hip. Menopause increases the chances for hip and forearm fractures. The latter occurs until max.



60-70 years of age whereas the likelihood of spine fractures increases with age, and hip fractures come much later. After menopause, approximately every 3rd woman suffers a spine fracture, and every 4th a hip fracture. These fractures lead to chronic pains, reduced body function, increased back curvature, and reduced body height.

EXAMINATIONS

In order to detect osteoporosis, the doctor uses a type of X-ray (bone densitometer) showing the BMC. Generally, the bone density test is done for the spine, lower back, and one hip, though it can also be done for a specific problematic area. Before 65 the most important results are those from the lower back and after 65 it is those from the hip which are most telling. Note that the authorities use BMC as criteria to grant individual subsidies for osteoporosis medicine.

Recommended daily intake of calc and vitamin D		
	<i>Before menopause</i>	<i>After menopause</i>
Calc (calcium)	800 mg/day	1.500 mg/day
Vitamin D	5µg/day ~ 200 enh	10µg/day ~ 400 enh

PREVENTION

Osteoporosis can be prevented by intaking calcium and vitamin D: sun and physical activity, ½ L of milk and 1-2 slices of cheese daily generally tend to be enough. From menopause onwards oestrogen supplements tend to be the most effective.

TREATMENT

Women who suffer bone fractures because of osteoporosis are treated with calc and vitamin D supplements, sunlight daily for at least ½ an hour, and preferably also physical exercise. In some cases it might be necessary to add oestrogen supplements (f. ex. Activelle®, Livial®), or similar to oestrogen ("SERM", Evista®), and sometimes also bisphosphonate tablets (Didronate®, Fosamax®) to counter the fractures.

WHO CAN I CALL WITH QUESTIONS?

You are welcome to call Kvindeklinikken during telephone hours on 36 46 71 40.

Revised September 2022. To be revised on an ongoing basis and certainly no later than September 2025, before in case of any significant changes.