

## WHAT IS OSTEOPOROSIS?

Bone density reduces to some degree in all people as they age, a slow rate of bone loss starts around 40 years in both sexes.

Osteoporosis is a condition where the bones become excessively thin and weak, such that there is a greater risk of fractures. It affects more than 50% of women and about 30% of men over 60 years, as well as a few younger people.

Osteoporosis is often called the 'silent disease' as it can develop without any symptoms, until you find you have broken a bone.

## HOW DOES BONE GROW?

Bone is a living tissue that grows in a porous mesh-like structure. Throughout life the body breaks down old bone and rebuilds new bone in a continuous cycle. We gain bone by building more than we lose.

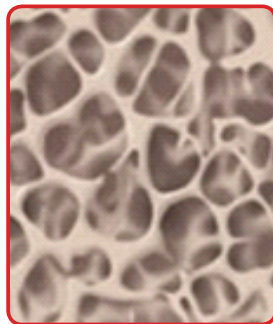
Bones contain the protein collagen and minerals such as calcium and phosphorus, which make the collagen hard and dense.

To maintain bone density, the body needs adequate calcium and other minerals and certain levels of hormones, including oestrogen in women and testosterone in men.

Vitamin D is needed so the body can absorb calcium from food and incorporate it into bones. Physical activity also helps bone become dense.



Interior of healthy bone.



Interior of thin, porous bone.

## HOW DOES BONE BECOME THINNER?

Bones grow more and more dense until around the age of 30. After about 40, bone breaks down slightly faster than it is replaced and bones slowly become less dense.

In women, after the menopause, the ovaries stop releasing eggs and the level of oestrogen decreases.

Over many years, a low oestrogen level causes the inner mesh of bones to become thinner, weaker and more brittle. In men, this can happen if there is too little testosterone.



## AM I AT RISK FOR OSTEOPOROSIS?

Some people are more at risk than others. The following risk factors are linked to having osteoporosis, or getting it later on.

The more of these that apply to you, the more important it is to discuss osteoporosis with your doctor:

- being female
- previous fracture due to osteoporosis
- family history of osteoporosis
- being aged 50 years or older
- being past the menopause
- having your ovaries removed or reaching menopause before the age of 45
- being thin or 'small boned'
- White (Caucasian) or Asian ancestry
- too little calcium in your diet
- smoking
- alcohol (more than four standard drinks a day)
- less than 30 minutes outdoors in sunlight each day
- less than 30 minutes of physical activity each day
- long term use of some medications, such as steroids (e.g., cortisone, prednisone) or anticonvulsants.

The last six of these are the risk factors you can modify or have some control over throughout your life to reduce the chances of osteoporosis in old age. For osteoporosis, prevention is far more successful than treatment.

## HOW CAN MY DOCTOR HELP?

Your doctor can assess your risk for osteoporosis from your medical history and by asking you about your lifestyle. Physical signs that you may have weak bones include previous fractures (often of the wrist, hip or spine), a loss of height or stooping, and a curved spine.

Your doctor may suggest you have a bone density scan (a type of x-ray) to check for bone weakness.

## HOW CAN PHYSIOONE ASSIST YOU?

Physiotherapists have a role to play in osteoporosis through exercise prescription, therapeutic modalities, specific techniques and education.

In particular physiotherapy may help reduce the risk of falls and subsequent fracture through exercises to improve balance, strengthening exercises and addressing trunk control.