



## OSTEOPOROSIS

Osteoporosis is a global public health problem. The lifetime risk for a woman to suffer an osteoporotic fracture is 30-40%. In men the risk is about 13%. In New Zealand, osteoporosis affects more than half of women and nearly a third of men over the age of 60.

More than 3000 New Zealanders break a hip each year. About a third of people who fracture a hip die within a year from related complications. Another third never return home. Many who do go home lose their mobility and independence. More women are hospitalised with a hip fracture due to osteoporosis than through breast cancer and the World Health Organisation has identified osteoporosis as a priority health issue.

By 2050 the worldwide incidence of hip fracture in men is projected to increase by 310% and 240% in women. In women over 45 years of age, osteoporosis accounts for more days spent in hospital than any other disease, including diabetes, myocardial infarction (heart attack) and breast cancer. The great majority of individuals at high risk (possibly 80%) who have already had at least one osteoporotic fracture are neither identified nor treated.

### So what is Osteoporosis?

Osteoporosis is a disease in which the density and quality of bone are reduced, leading to weakness of the skeleton and increased risk of fracture, especially of the spine, wrist, hip, pelvis and upper arm. The bone is actually normally mineralised but reduced in volume.

People don't know whether they have osteoporosis because it is a silent condition which usually first becomes apparent when a broken bone occurs.

A special test known as a bone density scan or DEXA scan is used to determine the bone's density. There are also heel scans available but these are not as reliable as a DEXA scan, which is reliable within 1%.

### Risk factors for developing osteoporosis include:

- Genetics – the strongest risk factor. If members of your family have osteoporosis, you have a greater risk of developing it.
- Age – those aged 50 years or older are at greater risk.
- Being post-menopausal – women lose 1-2% of bone mass per year after menopause.
- Inhaling steroids - this is controversial and whether it affects bone density may depend on the dose.
- Having a history of fractures.
- Being thin or small boned – heavier people have better bone density.
- Having a diet low in calcium.
- Having European, Caucasian or Asian ancestry.
- Getting less than 30 minutes of outdoor sunlight per day.
- Getting less than 30 minutes of physical activity per day.
- Being a heavy alcohol drinker.
- Having an excessive coffee intake.
- Long term use of steroids and anticonvulsants.

The more of these risk factors you have, the greater risk of developing osteoporosis.

### **Those who should have a bone density test include:**

- Post menopausal women.
- Women with a premature menopause – this is before age 40.
- Older men with a history of minimal trauma producing a fracture.
- Anyone with any risk factors mentioned above.
- Anyone on oral steroids for more than two months.

Other tests that the doctor can ask for include serum calcium, serum phosphate, protein electrophoresis, liver function tests, full blood count, ESR, vitamin D levels and a coeliac screen.

To reduce your risk of developing osteoporosis, make sure you get adequate sun exposure and do lots of weight bearing exercise – this works the muscles against gravity and pulls on the bones and keeps them strong. Examples of weight bearing exercises include walking, dancing, playing golf or tennis and doing low impact aerobics.

Eat a balanced diet that is high in calcium and possibly take a calcium supplement. Limit alcohol intake to two drinks a day, don't smoke and limit coffee to two or less a day. In older people, do whatever is necessary to protect them from falls.

Treatments available for osteoporosis include:

- Calcium supplementation.
- Vitamin D supplementation. This extremely important because without it calcium cannot be absorbed from food. Vitamin D often needs to be supplemented because we do not get enough sunshine these days. Vitamin D also reduces the sway rate in elderly people, thus preventing them falling. It is now coming into mainstream medical literature that the deficiency rate of vitamin D in the population is extremely high. It is important for vitamin D not to be deficient in pregnancy because the baby then starts life with a deficiency. Dark skinned people are at a higher risk of vitamin D deficiency and therefore need more sun and monitoring.
- Bisphosphonate drugs like Fosamax (alendronate) reduce all fractures by 50%. This group of drugs dominate treatment of osteoporosis now because synthetic hormone replacement therapy is no longer regarded as the first line of treatment for osteoporosis. This drug works just as well in men as women. Issues with bisphosphonates have included concerns in relation to osteonecrosis of the jaw, however, this complication has only been found in those receiving huge doses of bisphosphonates. The rate of getting osteonecrosis of the jaw in Paget's disease when taking bisphosphonates is <1:60000 people. We have injectable bisphosphonates which can be given just once a year. They are especially useful for those who get stomach irritation from bisphosphonates.

Follow up DEXA scans while on treatment should be done at approximately two-year intervals.

For more information, visit <http://www.bones.org.nz>.