

Your Guide to Osteoporosis



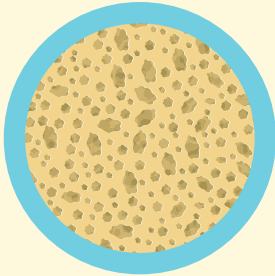
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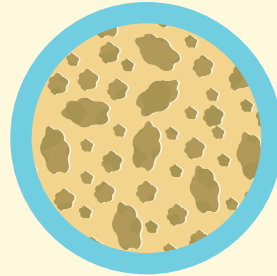
What is Osteoporosis?

Osteoporosis is a condition where the bone becomes weak and brittle. This happens when the body loses bone faster than it can replace. The condition particularly affects women in their middle and later years, although some men can also be affected.

Osteoporosis is often called the 'silent disease' as there are usually no signs or symptoms until a fracture occurs. Fractures are a major cause of disability in elderly Singaporeans.



Cross section of a normal bone



Cross section of an osteoporotic bone

How is Osteoporosis diagnosed?

Osteoporosis is diagnosed when there is a history of minimal trauma fracture (e.g. hip fracture from fall from a standing height), by measuring the bone density using a Bone Mineral Densitometry (BMD) scan which assesses bone strength and risk of fracture.

The most commonly known technique is known as the Dual-energy X-ray Absorptiometry or DXA. It is a quick and painless X-ray examination that measures the density of your bones, usually at the hips and lumbar spine, and in some cases, the forearms.

What are some risk factors for Osteoporosis?

Risk factors include:	Medical conditions
<ul style="list-style-type: none">▶ Family history of Osteoporosis▶ Insufficient intake of calcium▶ Low Vitamin D levels▶ Smoking▶ Excessive alcohol consumption▶ Early menopause (before the age of 40)▶ Long-term use of medication such as corticosteroids or anti-epileptics	<ul style="list-style-type: none">▶ Thyroid disease or an overactive thyroid gland▶ Rheumatoid arthritis▶ Chronic liver and kidney diseases▶ Chronic lung diseases▶ Conditions that affect the body's ability to absorb nutrients, such as Crohn's disease, coeliac disease and other inflammatory bowel conditions.

How can I prevent or delay Osteoporosis?

- ▶ **Ensure adequate calcium (recommended intake for adults > 70 years old : 1000-1200 mg calcium)**

Besides dairy foods which have the highest levels of calcium, you can also consider other sources of calcium, including sardines, spinach and almonds.

- ▶ **Ensure adequate Vitamin D (recommended intake: 800-1000 international units)**

Vitamin D helps your body absorb the calcium from your diet. An appropriate amount of sun exposure helps the body to produce Vitamin D. It can also be obtained from fish, eggs, low-fat milk and margarine.



- ▶ Participate in regular weight-bearing exercises for preservation of muscle strength and bone density

Engaging in regular exercise will help to slow down bone loss. They include aerobics, brisk walking, dancing, using weights, jogging and tai chi.



- ▶ Adopt a healthy lifestyle, avoid smoking and limit alcohol consumption

If you have difficulty getting enough calcium and Vitamin D from your diet, your doctor may recommend regular supplementation.

Can Osteoporosis be treated?

Osteoporosis is a chronic disease which requires life-long monitoring, reviewing of medication needs and making lifestyle adjustments. Treatment can prevent further bone loss and reduce your risk of bone fractures.

Your doctor will recommend the best course of treatment depending on your overall risk of fracture, and explain the potential side effects of each treatment.

The options may include:

1. Bisphosphonates

Alendronate, Risedronate and Zoledronic Acid are bisphosphonates that prevent bones from breaking down and increase bone density. It is commonly used to treat osteoporosis in men and women.

2. Selective Oestrogen Receptor Modulators (SERMS)

SERMs such as Raloxifene mimic the action of oestrogen and therefore reduce bone loss. SERMs have been shown to reduce the risk of spinal fractures.

3. Denosumab

Denosumab is given as an injection every 6 months to slow down the breakdown process of bone cells.

4. Hormone Replacement Therapy (HRT)

HRT replaces the oestrogen hormone in peri-menopausal women. It helps to maintain strength of the bone tissue. HRT comes in various forms such as tablet and patches. Your doctor will discuss with you the risks and benefits of different HRT formulation.



5. Parathyroid Hormone Therapy (PHT)

The parathyroid hormone regulates the amounts of calcium, phosphorus and magnesium in the bones and blood. PHT stimulates bone growth and increases bone density and strength.

This treatment, which is usually administered daily via an injection, is only used for people with severe osteoporosis when other types of medication are either unsuitable or ineffective. This is given as a daily injection for 2 years which will cover / protect the patient for a lifetime.

6. Testosterone Therapy (TT)

Men with low testosterone levels can improve their bone density with testosterone replacement. Doses of testosterone are given through injections or gels.



Patients should take note of the following while undergoing treatment:

- ▶ An annual visit to the dentist is recommended for all patients to ensure good oral hygiene. Patients with dentures should ensure their dentures are well-fitting. Do let your doctor know if you need to undergo any dental surgery.
- ▶ Rare stress fractures of the thigh have been reported in patients on long-term treatment. Please let your doctor know if you experience any thigh ache or pain.

Patient's notes

Latest BMD	BMD values	T-scores
R /L Total Hip		
R/L Femur Neck		
LS Spine		

Current treatment prescribed	Remarks
Anti-osteoporosis medications	
Vitamin D	
Calcium supplements	
Falls prevention	
Smoking cessation	
Adequate oral hygiene	
Dietary modification Height Weight BMI :	

Medication instructions for PO Bisphosphonates

- ▶ To be taken on an empty stomach in the morning once a week, 30 minutes before breakfast and other medications.
- ▶ Please remain in upright position for 30 minutes after taking the tablet.





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