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The website for the answer to all your Orthopaedic Questions

- **Orthopaedic Opinion Online** is a website designed to provide information to patients who have orthopaedic and musculoskeletal problems and are undergoing treatment.
- **Patient information** is provided in the form of downloadable information sheets.
- **Orthopaedic advice** and second opinions can be provided by our expert internationally renowned Consultant Orthopaedic Surgeons.
- **Online review** of patients' X rays or MRI scans can also be provided and any proposed treatment plans reviewed.
- **Book a clinical consultation** with one of our internationally renowned consultant orthopaedic surgeons in Bristol or London.
- **Orthopaedic reports** can be provided for Injury or Accident Claims and Medical Negligence claims.

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Osteoporosis

Key words: metabolic bone disease, calcium, bone mineralisation, menopause, vitamin D, osteoporotic fractures

Title- Osteoporosis

Introduction- Osteoporosis is one of the commonest metabolic bone diseases characterised by low bone mass and structural deterioration of bone tissue. It affects all age groups, both sexes and all races. It occurs more frequently in the women over 50 years of age and often remains undetected. It is thought that 1 in 2 women will have an osteoporotic related fracture in their lifetime.

Anatomy/ Physiology- Bone is complex living tissue providing support for muscles, protecting vital organs and storage of Calcium and other minerals. It consists of a thicker outer shell and a strong inner mesh resembling a honeycombed structure with blood vessels and bone marrow. It is consistently being broken down by specialised cells and then rebuilt in a process known as remodelling. In the normal ageing process, bone breaks down quicker than it can be replaced. However, if the rate of bone destruction increases, this leads to increased fragility of the bone structure with an increased likelihood of sustaining a fracture.

Indications/ Symptoms- Any bones can be affected, the more common ones affected being hips and vertebrae (spine). Frequently there are no visible symptoms until fracture occur, usually as a result of trauma. There are many recognised risk factors.

There is increased risk of having Osteoporosis if you:

- Are female
- Have a small, thin body frame
- Have a family history of osteoporosis
- Have an oestrogen deficiency
- Have had an early induced menopause from surgery
- Have a low Calcium intake
- Have a Vitamin D deficiency
- Have an inactive lifestyle, smoke or drink alcohol excessively
- Are taking other medication for Chronic Medical conditions

Diagnosis- The most accurate method of diagnosis is with bone density tests. These can detect bone mass and detect osteoporosis before a fracture occurs. The commonest is the dual energy x-ray absorption scan (DeXA scan) which can determine the rate of bone loss and monitor the progress of treatment, if done at regular intervals.

Treatment- There are 4 main steps to take in decreasing the risks of osteoporosis

1. Maintain a balanced diet with Calcium and Vitamin D
2. Maintain a healthy lifestyle
3. Increase the amount of Weight-Bearing Exercise
4. Use medication to affect bone density.

Drugs- Most of these have specific brand names and their use must be discussed with your General Practitioner. These are the most frequently used drug groups.

Biophosphonates- These are non-hormonal drugs that maintain bone density and therefore have the potential to decrease fracture rates.

Vitamin D- This is a fat-soluble vitamin used for controlling absorption of Calcium from the intestines. Only 10 % of the daily-recommended intake is needed from diet, the rest is produced by exposure of the skin to sunlight. Sources include butter, fatty fish, milk and orange juice.

Calcium supplements- It is advised to aim for 1200mg per day most of which is obtainable from an adequate diet. Good sources of Calcium include dairy products, sardines, green leafy vegetables and juices.

Parathyroid Hormone therapy- These drugs stimulate bone formation.

Calcitonin- this stops excessive reabsorption of calcium from the bones.

Complications- Fractures are the most serious complications arising from osteoporosis. As a result of an osteoporotic fracture, patients may experience chronic pain and alteration of lifestyle. Research shows that 6 months after sustaining a hip fracture only 15% of the population can walk across a room unaided and 1 in 3 people who were ambulant pre-fracture require long term care afterwards.

Outcome- Early prevention and treatment (including regular bone density testing) are essential in the appropriate management of osteoporosis. Patients are encouraged to take a greater responsibility for their own health by taking steps to decrease the rate of bone loss and the risk of falling. A good diet, assessment of household hazards, exercise and a healthy lifestyle is recommended.

www.Ortho500.co.uk - [patient information – Osteoporosis](http://www.Ortho500.co.uk/patientinformation/osteoporosis)
www.Ortho500.co.uk/patientinformation/osteoporosis

Useful sites:www.nof.org
:www.nos.co.uk
:www.orthopaedics.co.uk

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