



Dr. Vijay Panchanadikar
M.B.B.S, D. Ortho, D.N.B Ortho (MNAMS)
(Orthopedic Surgeon)
Phone : (020) 25460625

OSTEOPOROSIS

Osteoporosis is an illness where there is a reduction of the bone mass (i.e. the amount of matter per cubic centimeter of bones) and alteration of micro architecture bone tissue, which results in a decrease of the strength in the bones and thereby increasing the risk of fractures mainly in the bones around the parts of the hip, spine and wrist.



Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.

Osteoporosis is one of the most common bone related diseases. As per the findings of the World Health Organization 30% of women who reach menopause have been found to have osteoporosis and the number of women who will come to have the disease is expected to rise to 200 million by the year 2030.



Why is it necessary to know about Osteoporosis?

- Osteoporosis is present in a large number among the population. Also as a matter of fact, Osteoporosis can be prevented to a great extent. With the help of right medicines, proper management of eating habits and engaging in positive habits can substantially help in controlling the disease.
- On the one side of the coin Osteoporosis results in the decrease in the amount of matter in the bones which leads to weaker bones thereby increasing the possibility

Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.

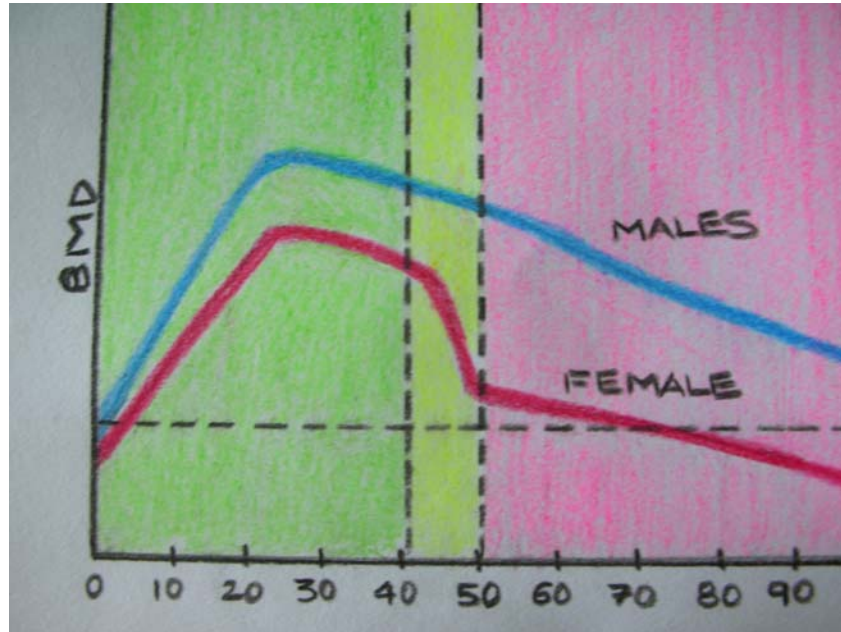
of fractures. While, on the other side Osteomalacia is a condition where there is a deficiency in the calcium present in the bones, which makes the bones softer thereby resulting in deformities.

- While osteoporosis is a quantitative lessening in the amount of bone, which leads to fragile bones resulting in fractures, while, Osteomalacia is a qualitative change in the bone where calcium of the bone is reduced which makes bones softer and thereby gives rise to defects of form. In a large part of the Indian population both these types are commonly prevalent, which require concurrent treatment.



Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.

- During the initial 25 -30 years of our lives, the bones attain maximum force and density. This is known as Peak Bone Mass (P.B.M). Thus the Peak Bone Mass at 30 years of age will establish the risk of fractures at the age of 60 - 80.



- Among women, the density of bone remains fairly constant until the menopause, after which there is a fast reduction during the first 5-8 years followed by a more progressive phase of the loss of bone. In case of men, the loss of bone is not as fast however, only a decline relating to the progressive age.

Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.

RISK FACTORS RELATED TO OSTEOPOROSIS

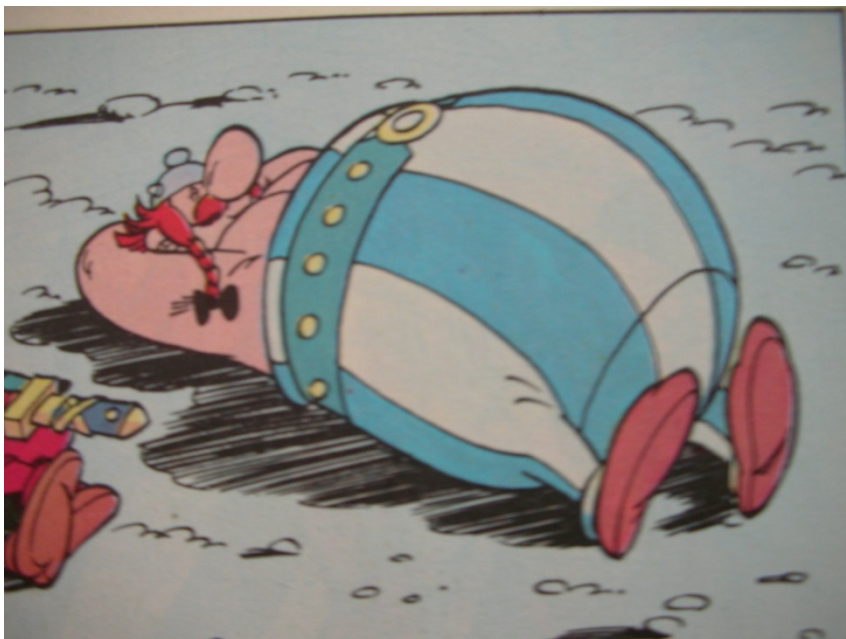
We can divide the risk factors for the osteoporosis into 2 categories.

Modifiable - factors over which we have a definite control.

Non Modifiable- factors over which we do not have any control.

1. Modifiable - Risk factors which we can alter

- Physical idleness
- Decreased calcium ingestion in our diet
- Nicotinism



- Alcoholism

Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.

2. Non Modifiable - Risk factors which we cannot modify

- Sex- male or female. As discussed, female gender is more prone to osteoporosis.
- Family antecedents of osteoporosis (i.e. a history of any member of close family having sustained a fracture particularly hip, wrist or spine.)
- More commonly detected in Whites, Asians or people who have a small build.
- Unmarried women or those who have not been pregnant.
- Women who reach an early Menopause or hysterectomy.
- Intake of certain drugs such as the steroids, anti epileptic drugs, certain sedatives, thyroxin etc.
- Certain medical conditions such as the rheumatoid arthritis, chronic hepatic affection, renal failure and certain cancers.
- Extended Immobilisation in the bed due to the surgery, disease etc

SIGNS AND SYMPTOMS of OSTEOPOROSIS

THE QUIET KILLER

Sadly, in majority of the cases there are no signs & symptoms and the patient realises about the condition only when they have a fracture. In certain cases a patient can take notice of the following which can be regarded as symptoms of osteoporosis:

- Back pain, varying from moderate to stern (which can be due to a non traumatic fracture of the spinal vertebrae).
- Any defect of form noted in the spine which did not already exist.
- Noticeable loss of height can also be considered as an indicator.

AREAS WHERE FRACTURES MOST GENERALLY OCCUR IN OSTEOPOROSIS ARE:

- The wrist (lower and end radius)

Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.



- Spine (vertebral collapse fractures)
- Hip (femur)

Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.

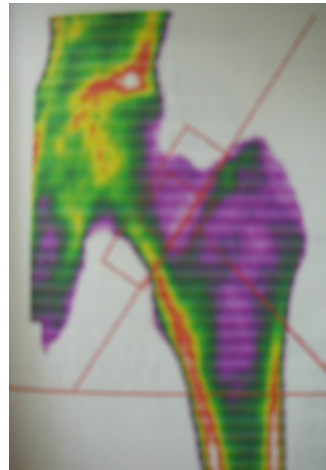
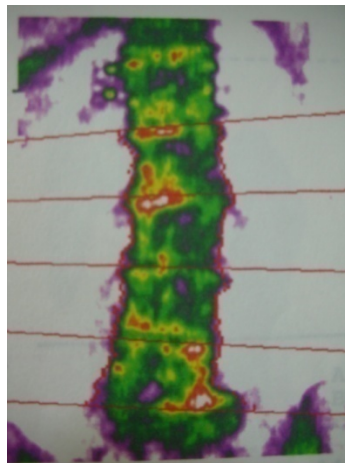
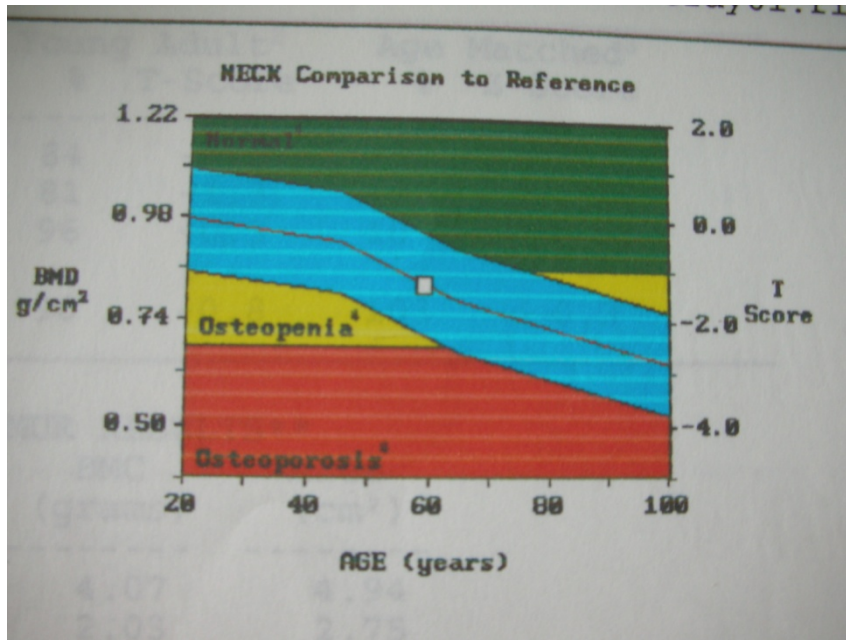


HOW OSTEOPOROSIS CAN BE DETECTED?

There are a certain number of tests which are readily available which help in detecting osteoporosis:

1. **BONE MINERAL DENSITOMETRY. (B.M.D)** : It is at present the most popular method of determining the bone density and can be detected at:
 - the spine or hip (axial BMD) or
 - the hand or heel. (peripheral BMD)

Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.



Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.

2. **The DEXA (Dual energy X- Ray absorptiometry):** It is measured as the gold standard of measuring our bone density due to its higher precision. It measures the bone density at the hip & the spine, which are considered more consistent sites for measuring bone density than the hand or the heel.
 - **T- Score** evaluates our bone density with the bone density of a healthy adult of the same gender & race having peak bone mass. (at 25 yrs)
 - **Z- Score** compares our bone density with that of a healthy adult of the same gender, race & age, having an acceptable bone mass.

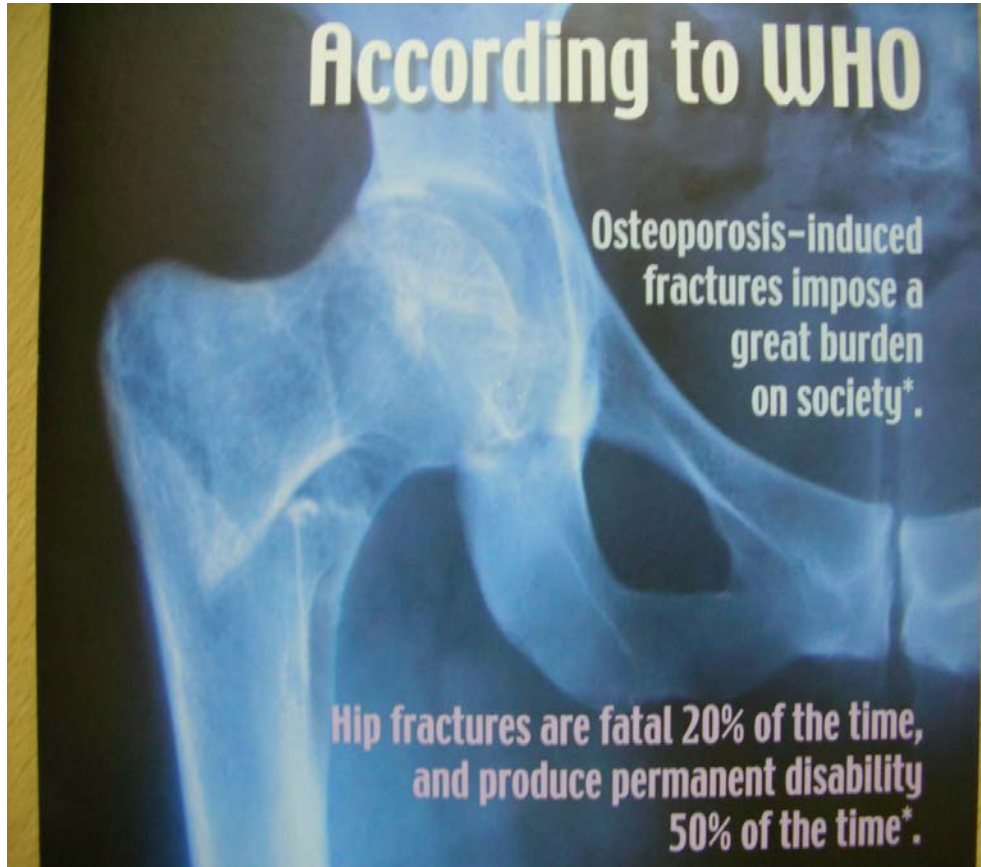
Thus normal readings for a DEXA are:

Less than - 1 : Normal, More than -1 and less than -2.5 , Low (Osteopenic),

More than -2.5 : Osteoporotic

3. **ULTRASOUND EXAM:** This is usually performed at the heel & while it is useful for initial screening of large populations is not accurate enough to help decide on treatment. It is quite low-priced.
4. **BIOCHEMICAL MARKERS OF BONE TURNOVER :** Certain biochemical markers can be used side by side with B.M.D. measurements, though these are not still used freely in India.

Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.



Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.

DAILY LIFE MODIFICATIONS

- Exercise: A weight bearing low impact exercise such as brisk walking for 30 minutes a day on an even surface, stair climbing or light weight training helps to strengthen the bones.
- Balance improving exercises such as tai- chi, yoga help by preventing falls.



- Discontinue smoking: Smoking causes women to reach menopause 2-3 years earlier and thus reduces the protective action that oestrogen, a hormone produced in greater quantities in menstruating women, on our bones.
- Lessen alcohol intake
- Take adequate measures to prevent falls in the house: This can include installing hand rails on stairs, handholds in bathrooms, adequate lighting.
- Physiotherapy for bedridden patients: Initially exercises can be done under the direction of a physiotherapist & later continued by self or with the help of family members.

DIETARY ADVICE

Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.

- Food which includes healthy amount of calcium should be integrated into our regular diet. The total amount of calcium consumed in a day should be about 1200- 1500 mg
- Vitamin D helps to absorb Calcium better which is synthesised by our skin using sunlight. So in places where exposure to sunlight is inadequate, food should be fortified with Vitamin D.
- Foods containing high amount of calcium are milk & milk products, red gram, green peas, maize, parsley, cabbage, drumsticks, celery, turnips, green tomatoes, spinach, French beans, sweet potatoes, potatoes, ladies fingers, brinjals, papaya, lettuce, coconut, guavas, oranges, sweet limes, pineapple, mangoes, pomegranate, musk melon, fish.
- Foods rich in Vitamin D are fish and eggs.



Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.

MEDICATIONS :

ANTI RESORPTIVE DRUGS:

BISPHOSPHONATES

- **Etidronate**
- **Alendronate**
- **Pamidronate**
- **Risedronate**
- **Ibandronate**
- **Rolidronate**

CALCITONIN

TIBOLONE

HRT

STIMULATORS OF BONE FORMATION

- **FLUORIDE**
- **ANABOLIC STEROIDS**
- **PARATHYROID HORMONE**

Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.

OTHERS

SELECTIVE ESTROGEN RECEPTOR MODIFIERS (SERM)

RALOXIFEN

IDOXIFENE

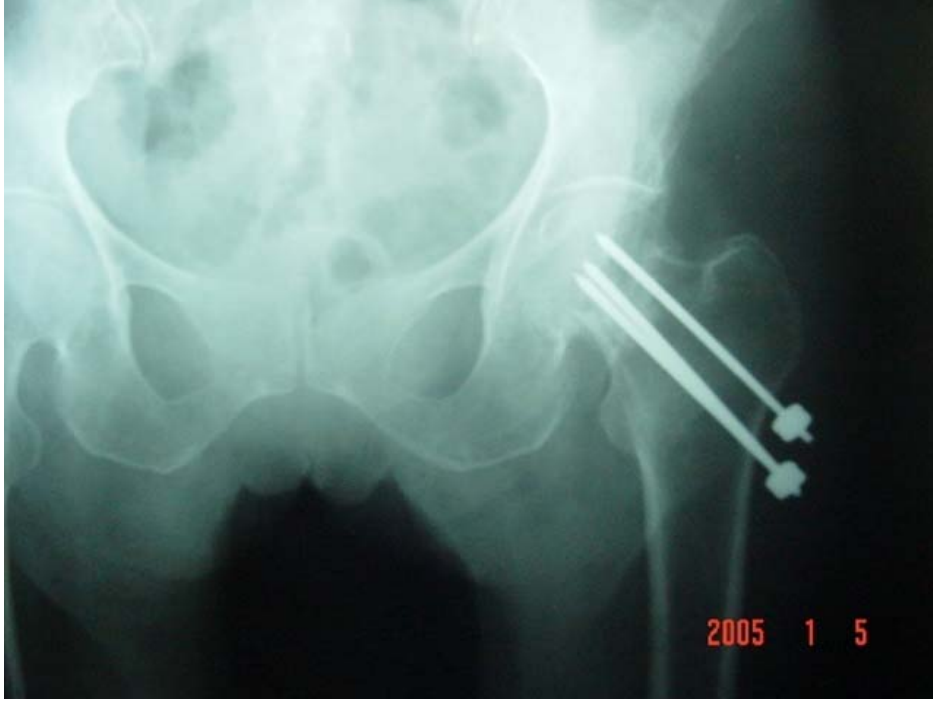


Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.



Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.

© Arogyadarpan.com



Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.

© Arogyadarpan.com



Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.

© Arogyadarpan.com



Important Safety Information – Information provided here is NOT medical advice or a prescription against any specific or general Symptom. Please consult your doctor before utilising the information.