

Osteoporosis a silent killer

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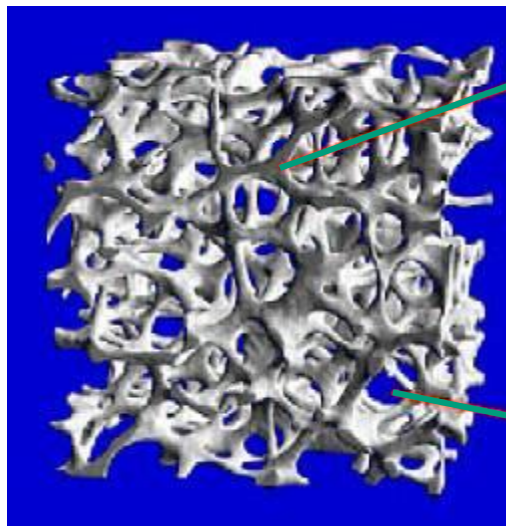
Medwin Hospital, Hyderabad-1

What is osteoporosis?

OSTEO = “bone”

POROSIS = “having large pores”

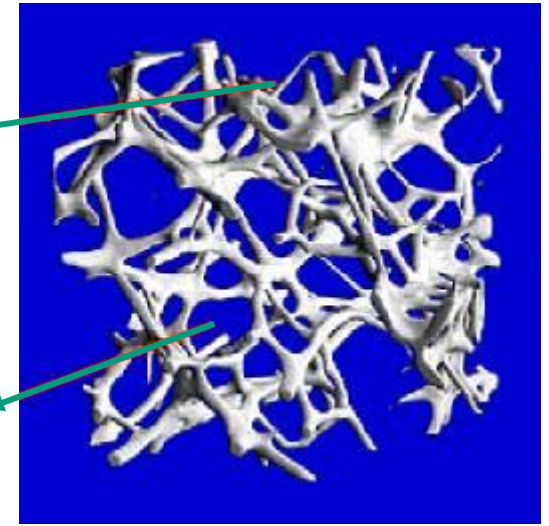
- Osteoporosis is a disorder of bones, in which the pores become too large and the mesh becomes very thin and fragile.
- This makes the bones fracture very easily.



Normal meshwork

Normal pores

HEALTHY BONE

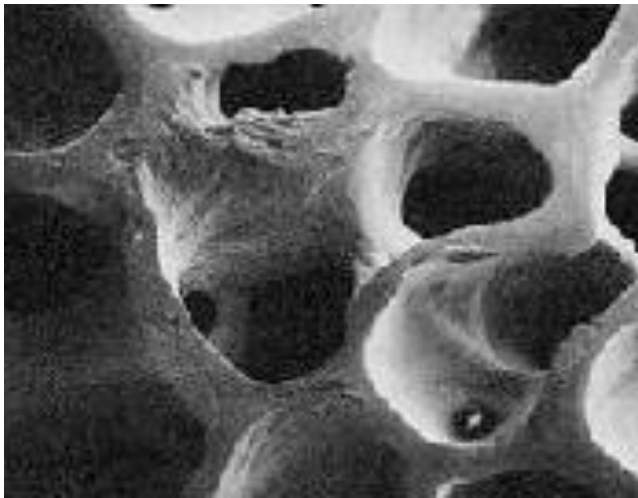


Thin meshwork

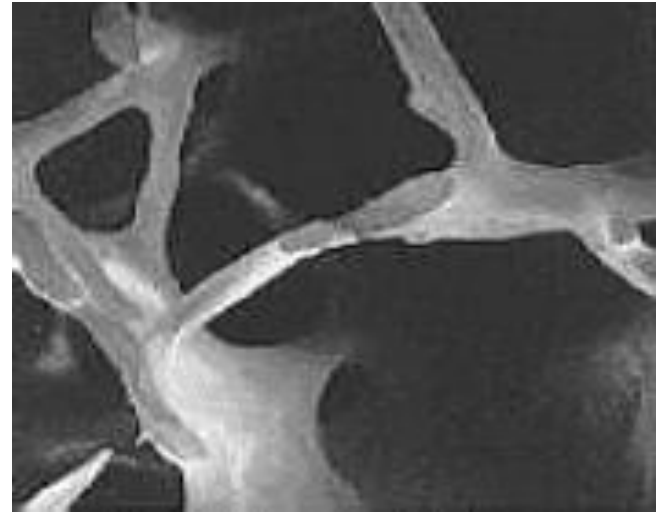
Large pores

OSTEOPOROTIC BONE

Are your bones healthy?



Normal bone



Osteoporosis

Osteoporosis Prevalence



❖ Life time risk of osteoporosis (1 in 7) for postmenopausal lady is more than risk of cancer breast (1 in 9)

❖ White and Asian ladies are at higher risk for osteoporotic fracture

❖ 80 % of women over age 65 years have osteoporosis

Out of all women who get osteoporotic hip fracture

❖ **10-20 % die within 1st year**

❖ **50 % become permanently disabled**

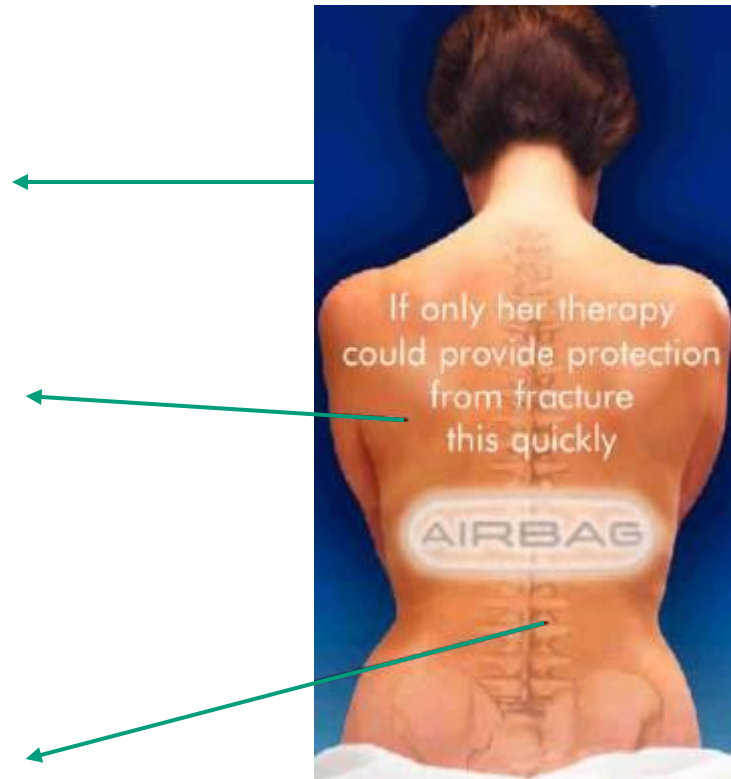


Risk Factors for Osteoporosis

- **Increasing age**
- **Family history**
- **Lean body build**
- **Caucasian or Asian descent**
- **Early menopause (natural or surgical)**
- **Smoking**
- **Low calcium diet**
- **Sedentary lifestyle**
- **High bone turnover states**
- **Predisposing drugs**

Why does this happen?

- Many factors control the activity of the tiny cells in our bones.
 - For example, our **HORMONES**.
 - In women, the hormones go through many changes throughout life.
 - Between the age of 45 to 60, women reach stage called **MENOPAUSE**. This is when their monthly period stops completely. This is caused by a major change in some hormones.
 - This change affects their bones too. The cells which remove bone substance become over-active. They slowly eat away healthy bones and make them **OSTEOPOROTIC**



In men and women, a similar damage can also be caused by long term use of hormones called “steroids” which are used for the treatment of many other diseases.

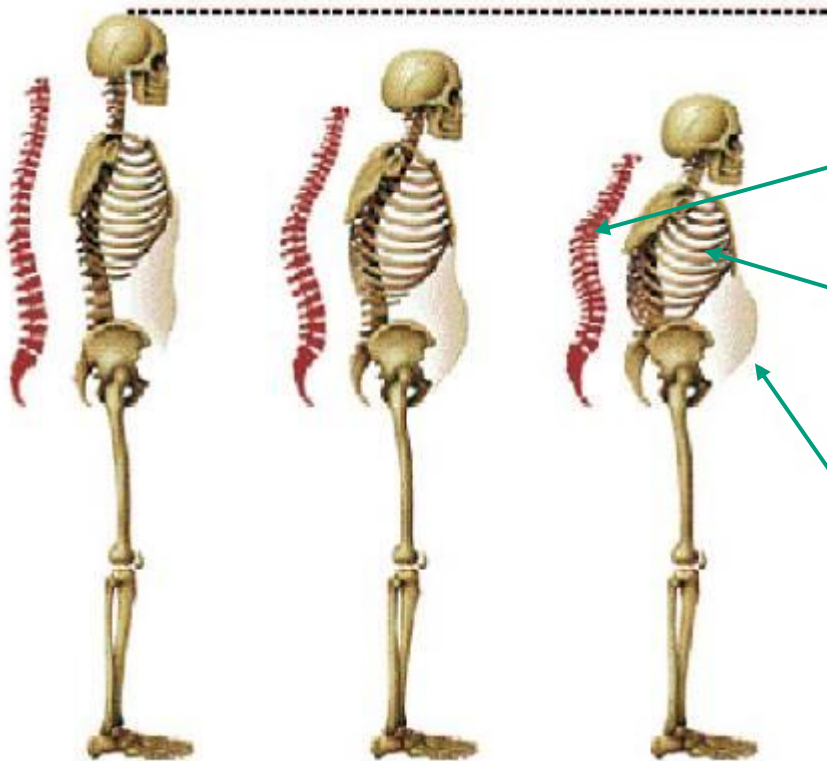
Effects of Osteoporosis

- Osteoporosis causes:
 - Pain
 - Disability
 - Loss of Independence

How does osteoporosis present?

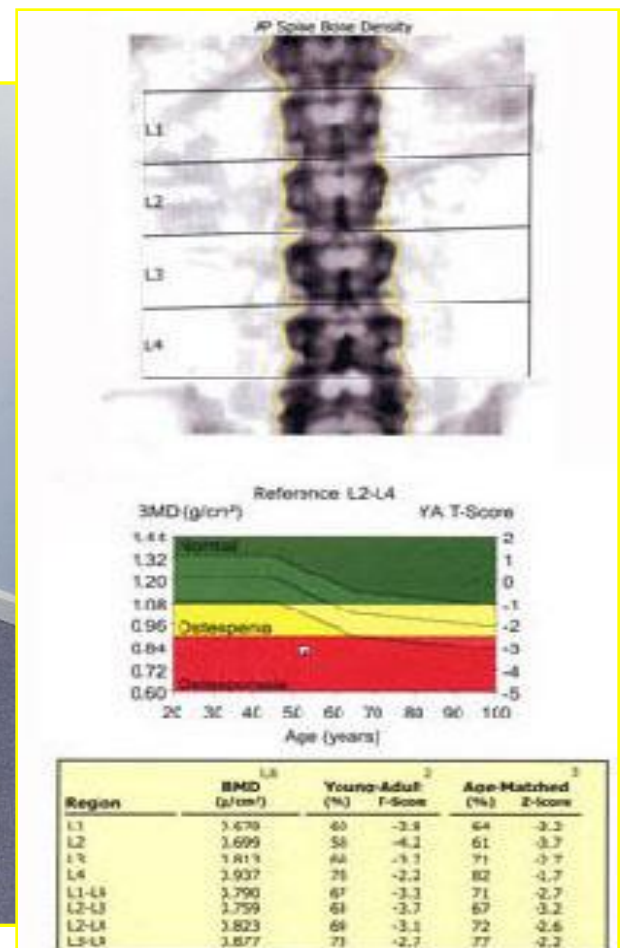
- Low trauma #
- Ht loss, backache, spinal deformity or radiological osteopenia
- Vertebral # asymptomatic in 2/3rd

The hunched back is not “old age”



- This wedging can make your back start curving and you can become “hunched”.
- This not only looks ugly, it also makes breathing difficult.
- It lowers your height and causes your tummy to bulge

Diagnosis of osteoporosis with 'DEXA' scan

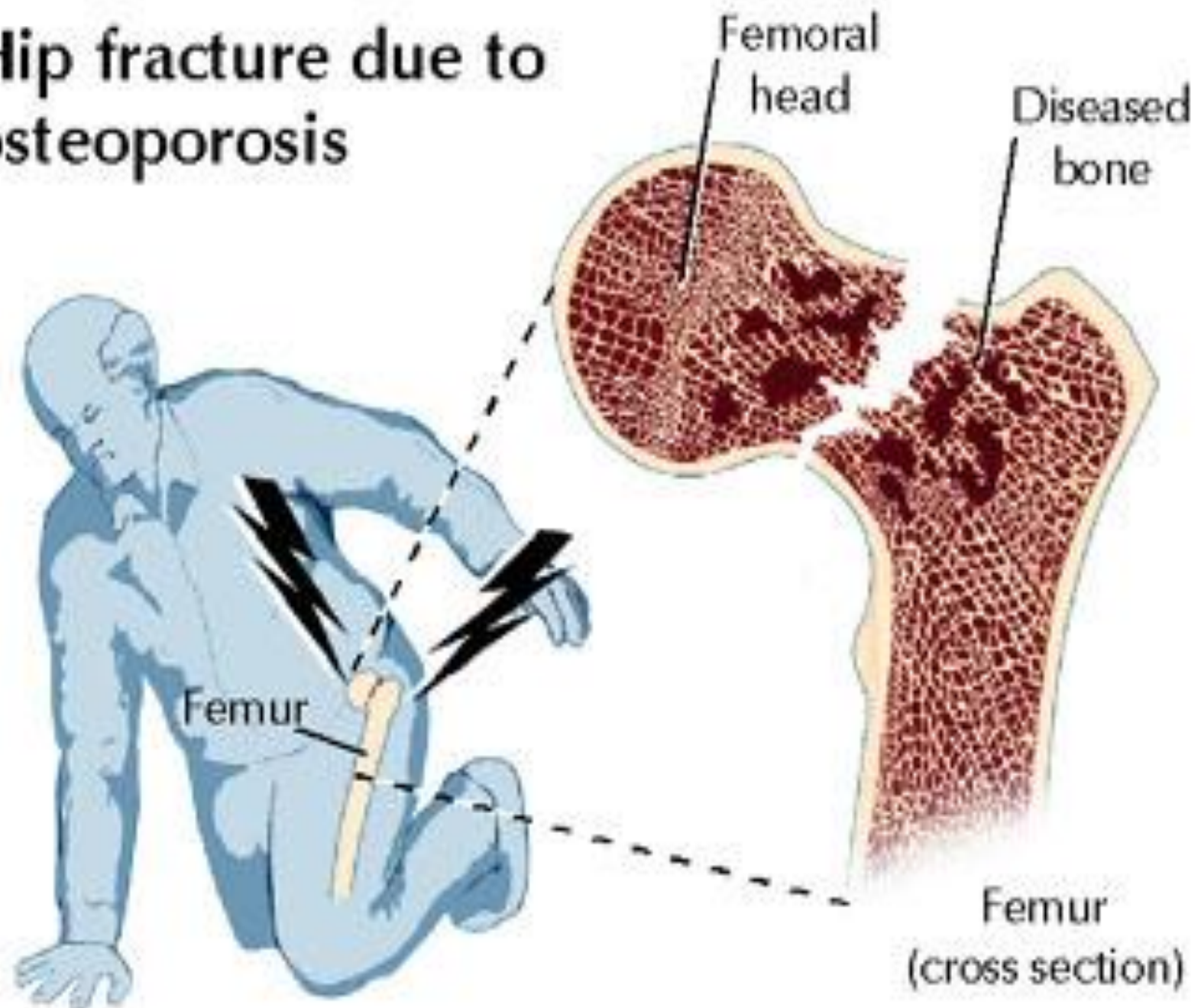


The many effects of osteoporosis



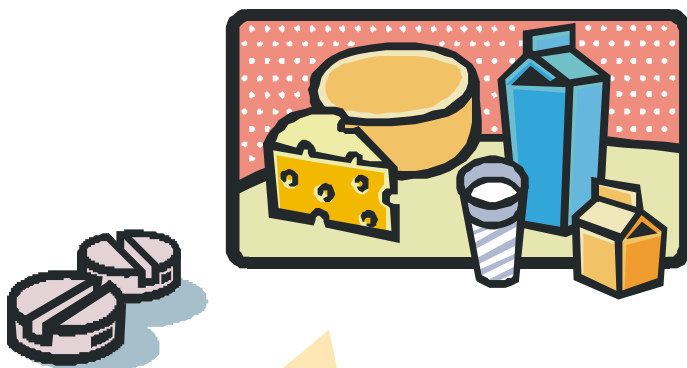
- Neck becomes weak and head falls forward
- Hunched back
- Loss of height
- Indigestion and reflux
- Pain in part or in whole of back
- Leaking of urine on coughing
- Breathing difficult
- Stomach bulges because of the loss of space under the ribs
- Depression

Hip fracture due to osteoporosis



Can osteoporosis be cured?

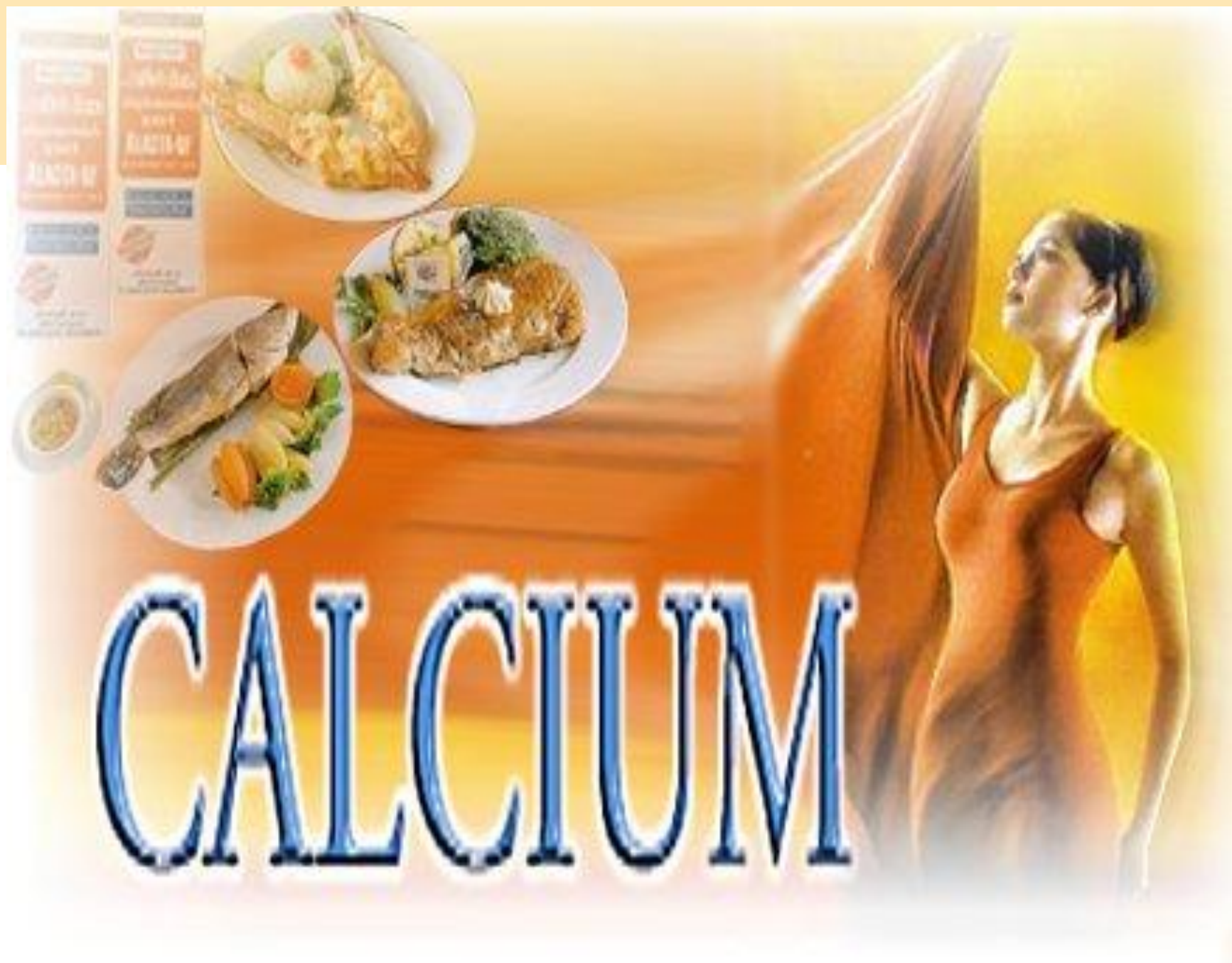
- The condition of the bones in osteoporosis can be reversed.



- **How much** improvement your bones achieve, and **how fast**, will depend on:
 - What medicine you take
 - How regularly you take it
 - How good your diet is
 - How well you exercise

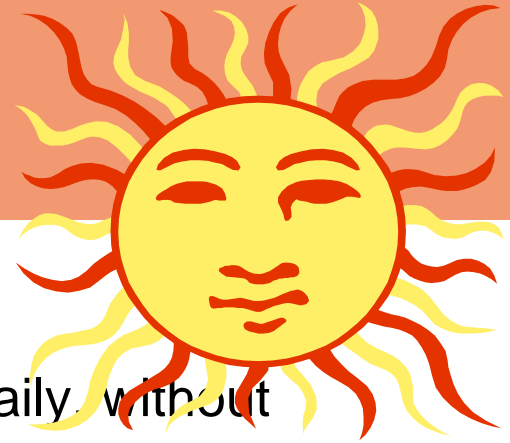
- **How long** this improvement will last will depend on:
 - How long you take the medicine
 - How long you keep up a good diet and exercise
 - How regularly you follow up with your doctor

CALCIUM



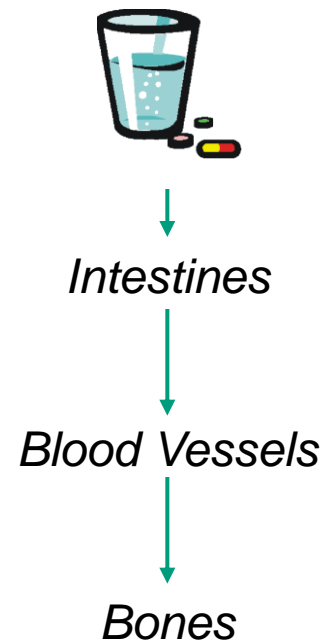
Step 2: Get Regular Sun Exposure

- Helps you meet vitamin D needs
 - Expose arms and/or legs for 10 - 15 minutes daily without sunscreen
 - Apply sunscreen after this time



Why is Calcium not enough?

- Calcium is just one of the building blocks of bone.
- Swallowing Calcium or drinking calcium rich milk is easy
- But getting this calcium to reach your bones is not so simple.
- The calcium you eat may either not get absorbed from your intestines, or if absorbed, may be lost in urine, or not reach the bones.



To make bones strong you need:

1. Enough Calcium in your food / supplement
2. Vitamin D to absorb enough calcium from your intestines into your blood
3. Healthy cells which build well-designed bones in a natural way

What else do I need to do to make my bones strong?

You need to eat a very healthy diet rich in Calcium and vitamins. You should take the advice of an expert dietician to help you carefully plan out a diet which suits your own unique needs, taste and health requirements.



You need to follow an exercise pattern planned just for you with the help of an expert physiotherapist. Exercise speeds up bone repair.



Management of osteoporosis

Non- Pharmacological:

- Prevention of falls
- Adequate calcium:1200mg/d, Vit D:800IU/d
- Stop smoking & alcohol
- Regular exercise: 3 days/wk

TYPES OF EXERCISES

- Weight-bearing exercises
- Resistance training
- Postural exercises
- Flexibility exercises
- Balance exercises



It's Up To You Now!

- What are you going to do to have strong bones that last a lifetime?



Glucocorticoid induced osteoporosis(GOI)

Rapid bone resorption

**(average of 5 % in 1st year)
followed by steady decline in
bone formation**

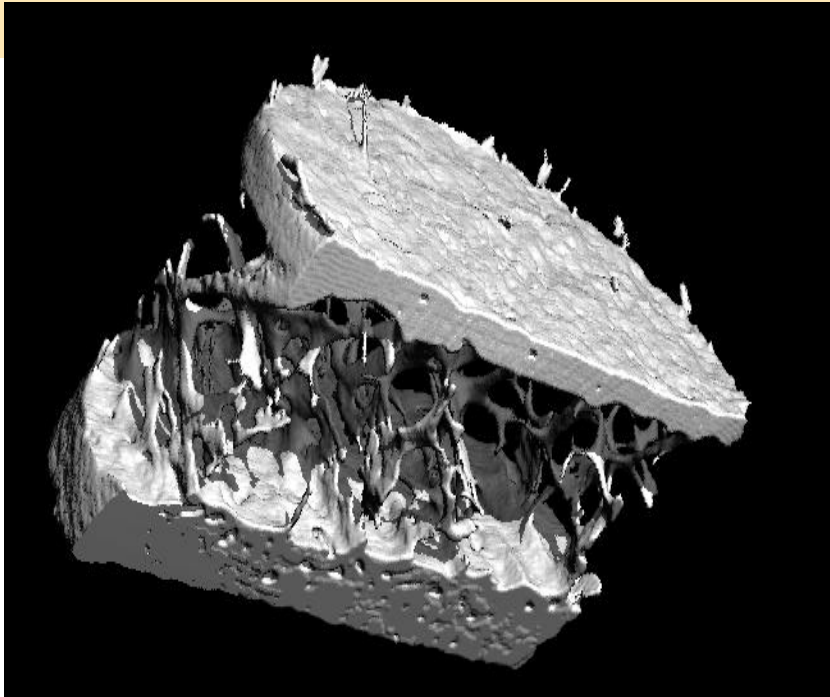
**Trabecular bone loss > >
cortical bone loss**

**Vertebral fractures > > hip
fractures**

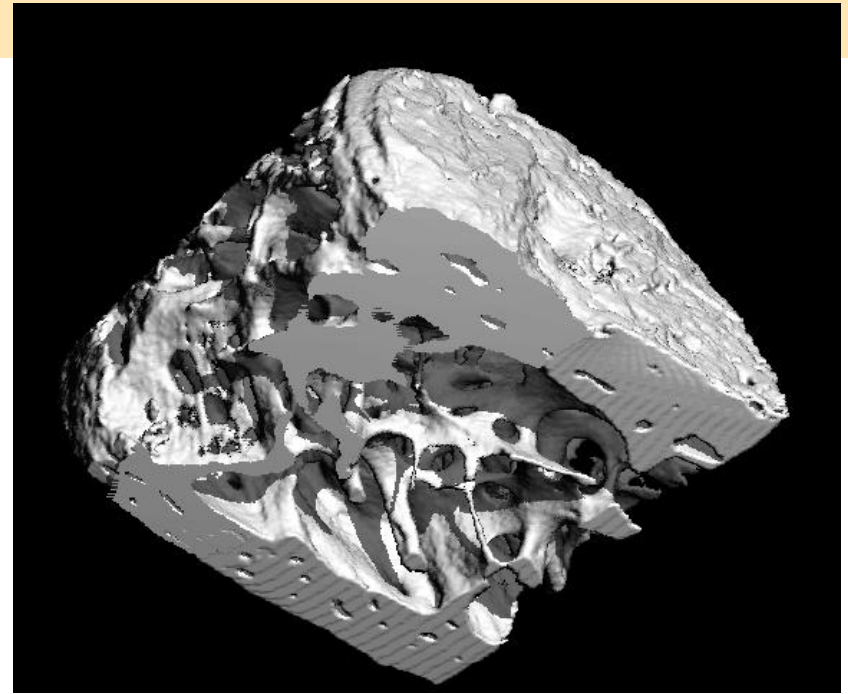
**Abundant pseudo callus
(frequently found at the end
plates of collapsed vertebra)**



Effect of Teriparatide 20 μ g



Baseline



Follow-up

Female, age 65

Duration of therapy: 637 days (approx 21 mos)

BMD Change:

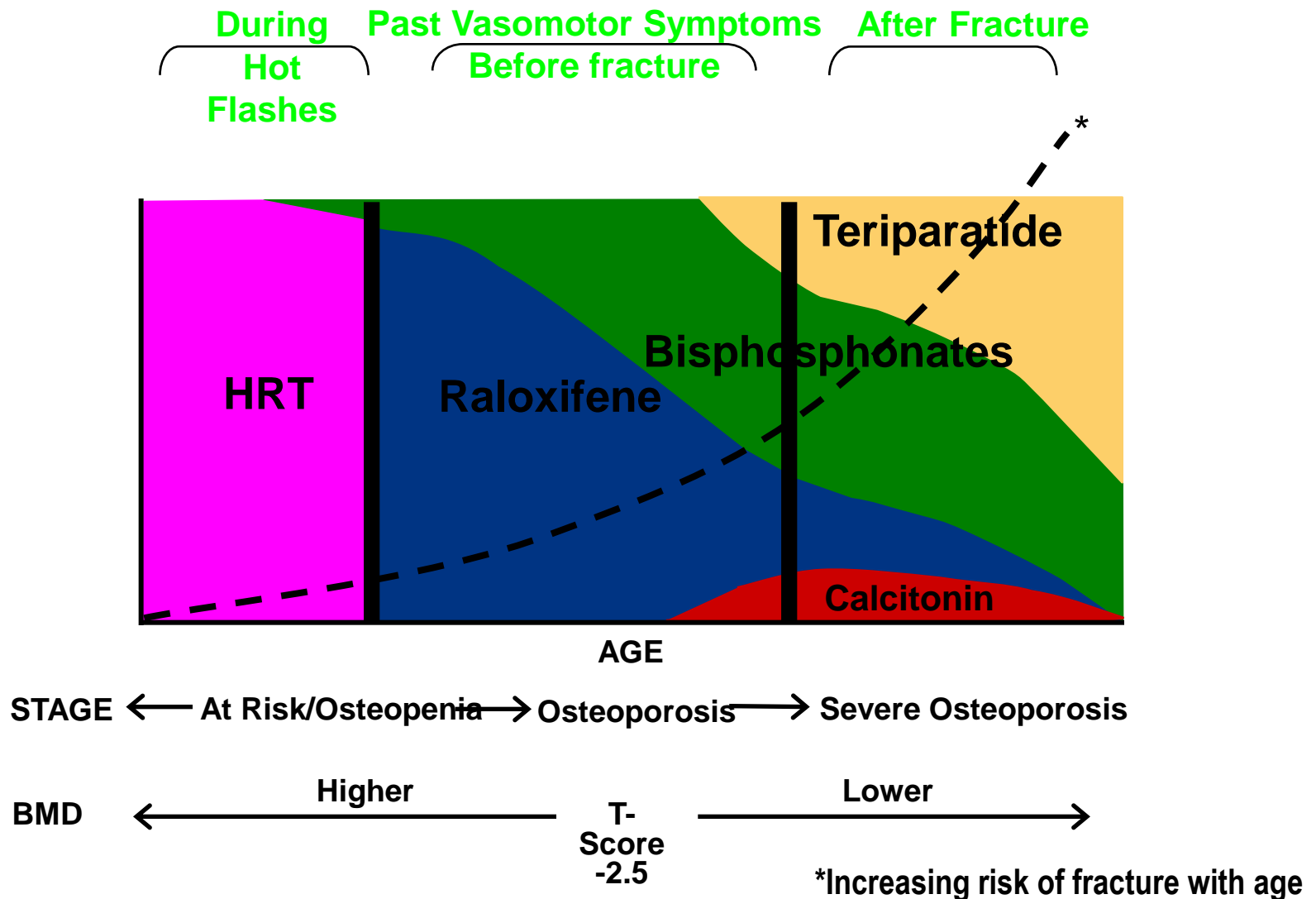
⇒Lumbar Spine: +7.4% (group mean = 9.7 7.4%)

⇒Total Hip: +5.2% (group mean = 2.6 4.9%)

UCSF – Jiang
Eriksen et al. ACR 2002

Osteoporosis Therapy Options

Postmenopausal Women





THANK U.