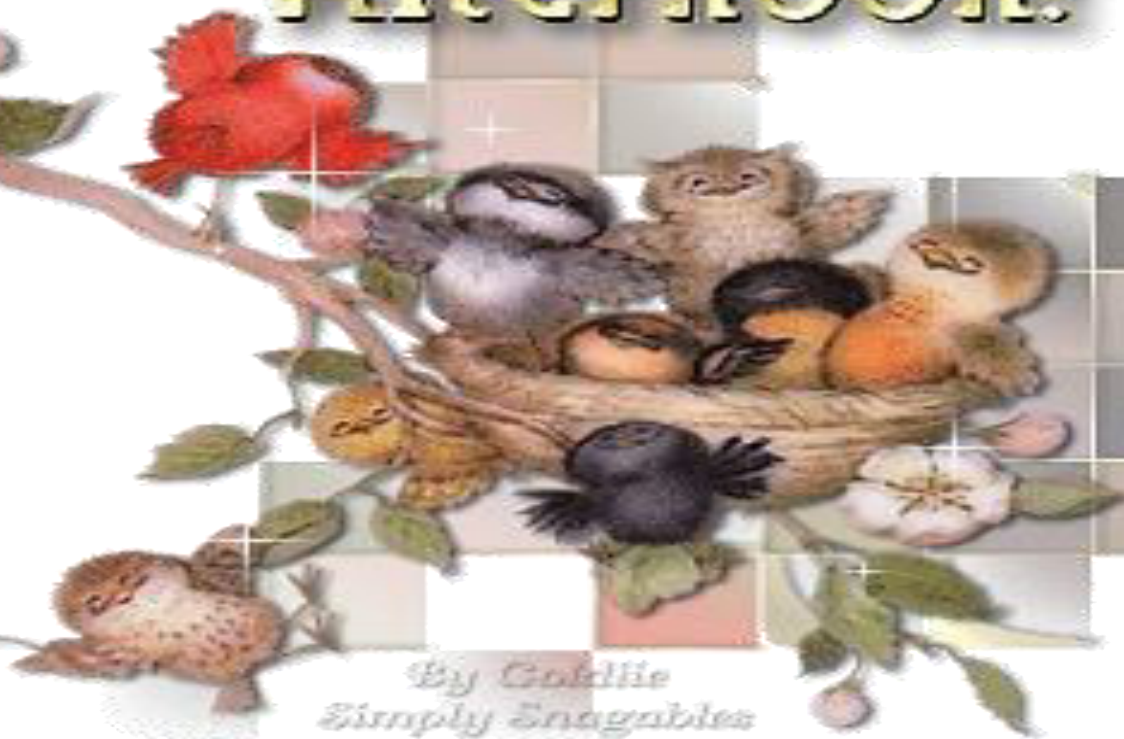


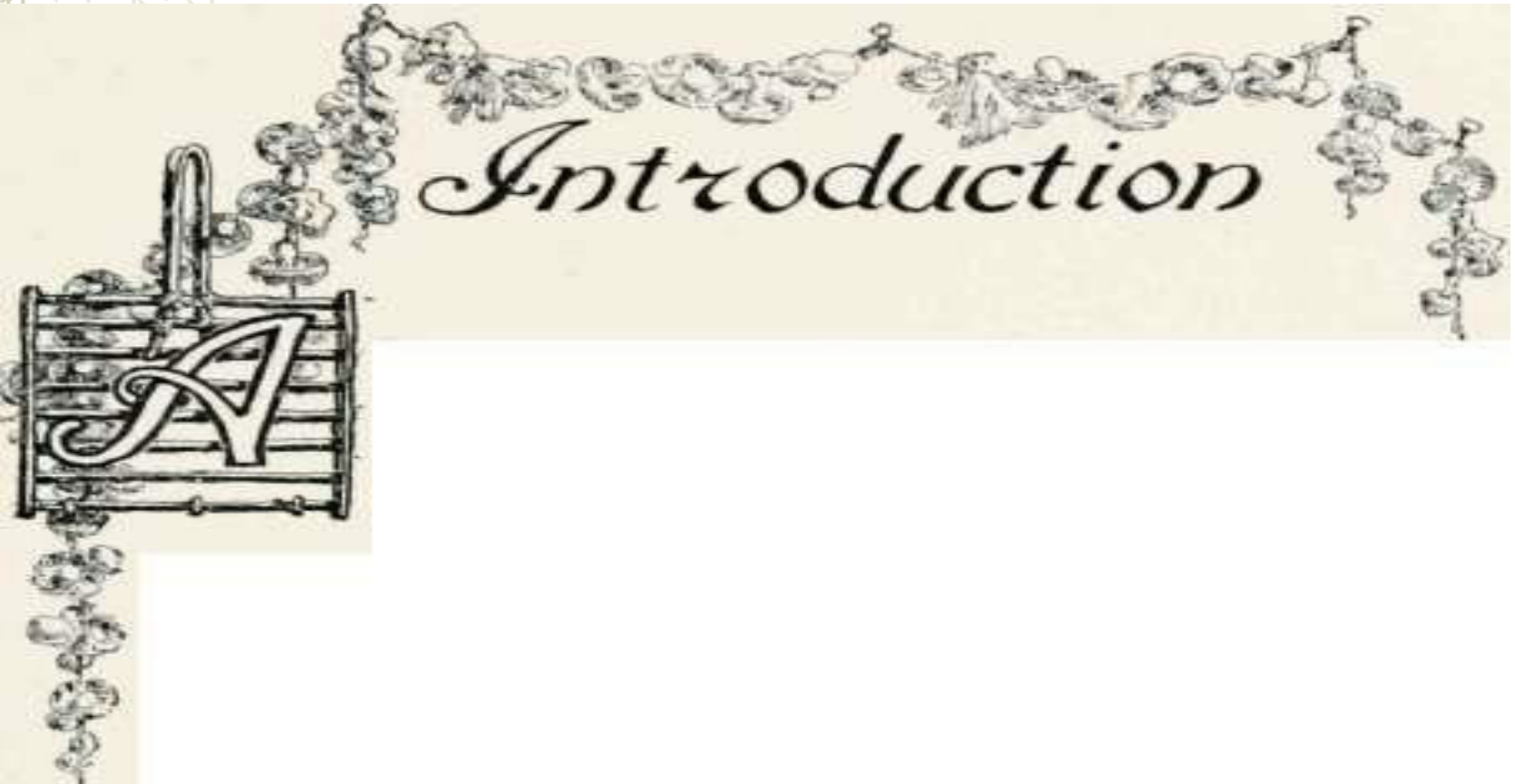
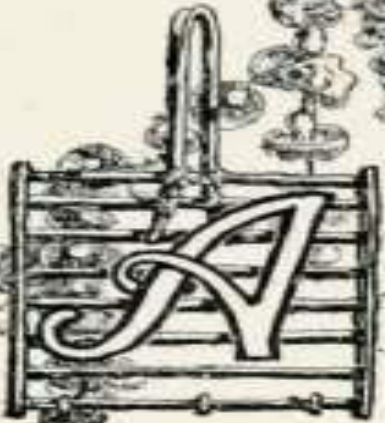
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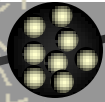


By Goldie
Simply Snagables



Introduction





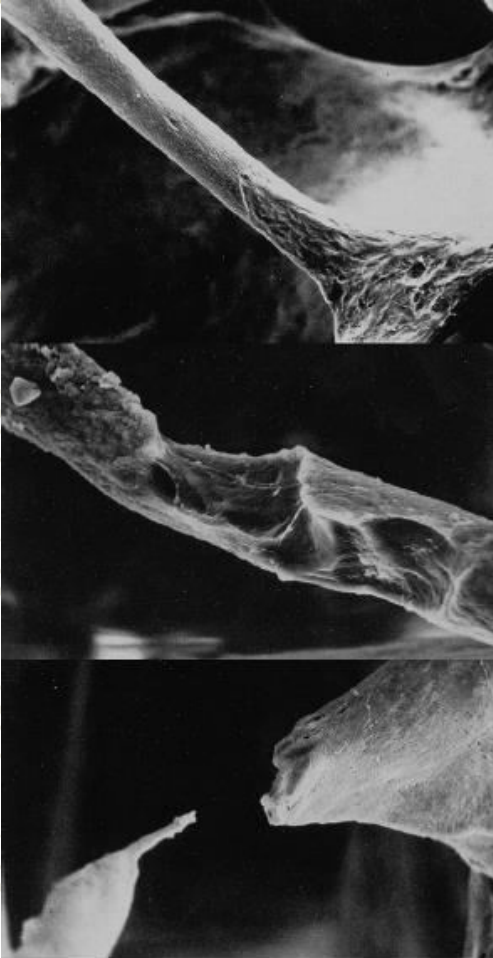
OSTEOPOROSIS

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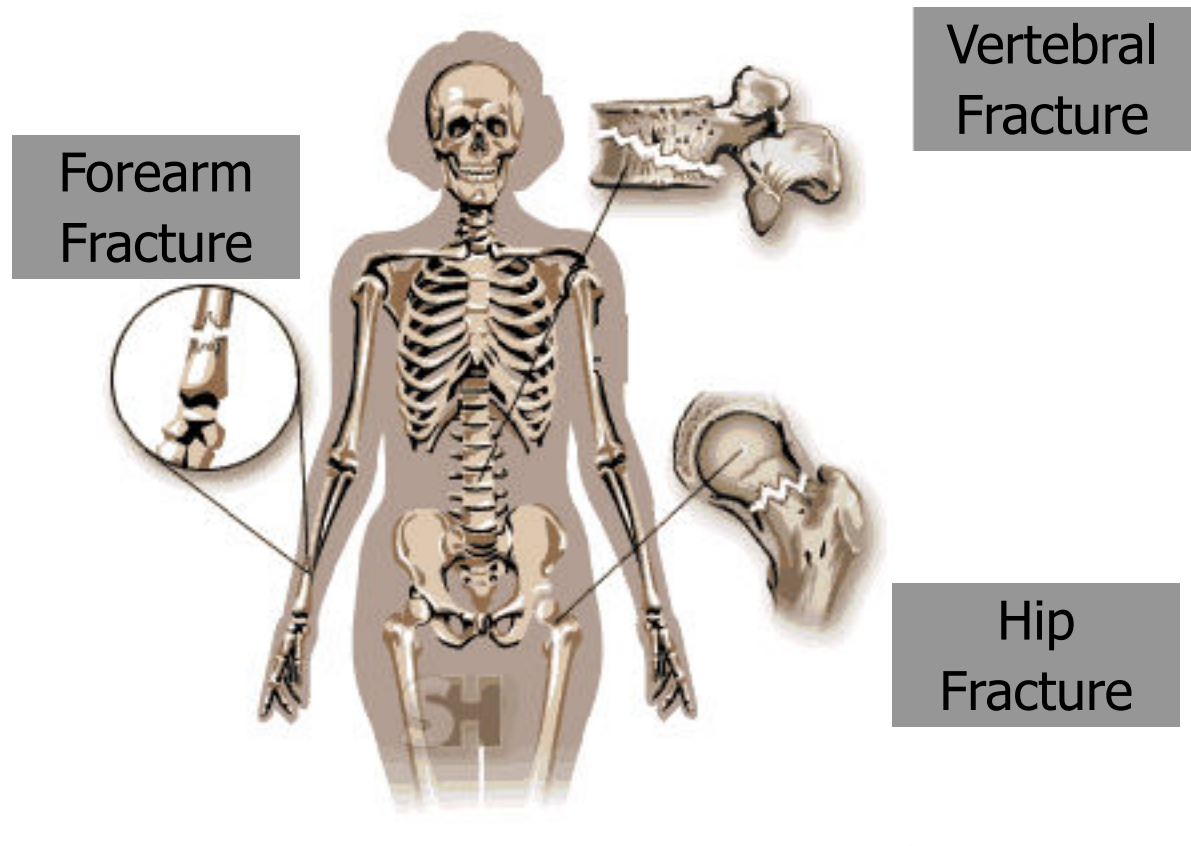
Definition

“A systemic skeletal disease characterized by low bone mass and micro architectural deterioration of bone tissue lead to bone fragility and susceptibility to fracture.” By

[Osteoporosis consensus development conference]



Common sites of osteoporotic Fracture





Incidence of osteoporosis

Osteoporosis is 8 times more common in females than male

1 in 8 men over 50 years have an osteoporosis related fracture whereas in women the ratio is 1 in 2.



Classification

✚ Primary osteoporosis

post menopausal osteoporosis and
osteoporosis of aging

✚ Secondary osteoporosis

- Due to secondary reasons such as hyperparathyroidism , long term corticosteroidal administration



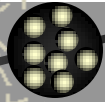
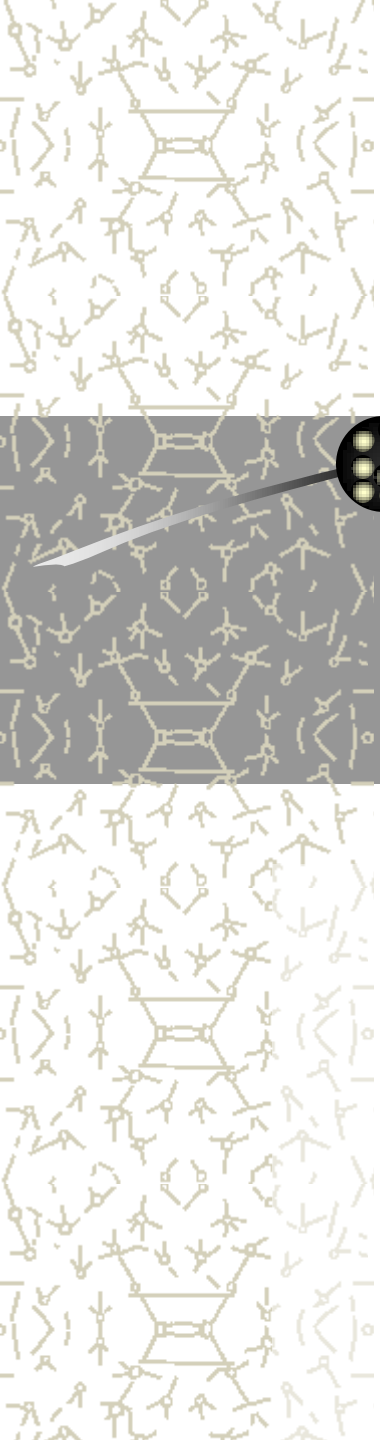
Etiology

- ✚ Idiopathic causes
- ✚ Genetic factors
- ✚ Post menopausal hormonal changes
- ✚ Aging
- ✚ Small / thin frame body / low body weight
- ✚ Sedentary lifestyle
- ✚ Dietary habits :- low calcium and vitamin D in diet
- ✚ Medications like corticosteroids and antiseizure medications

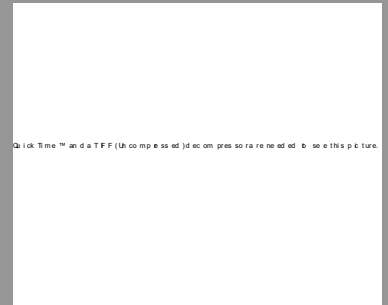


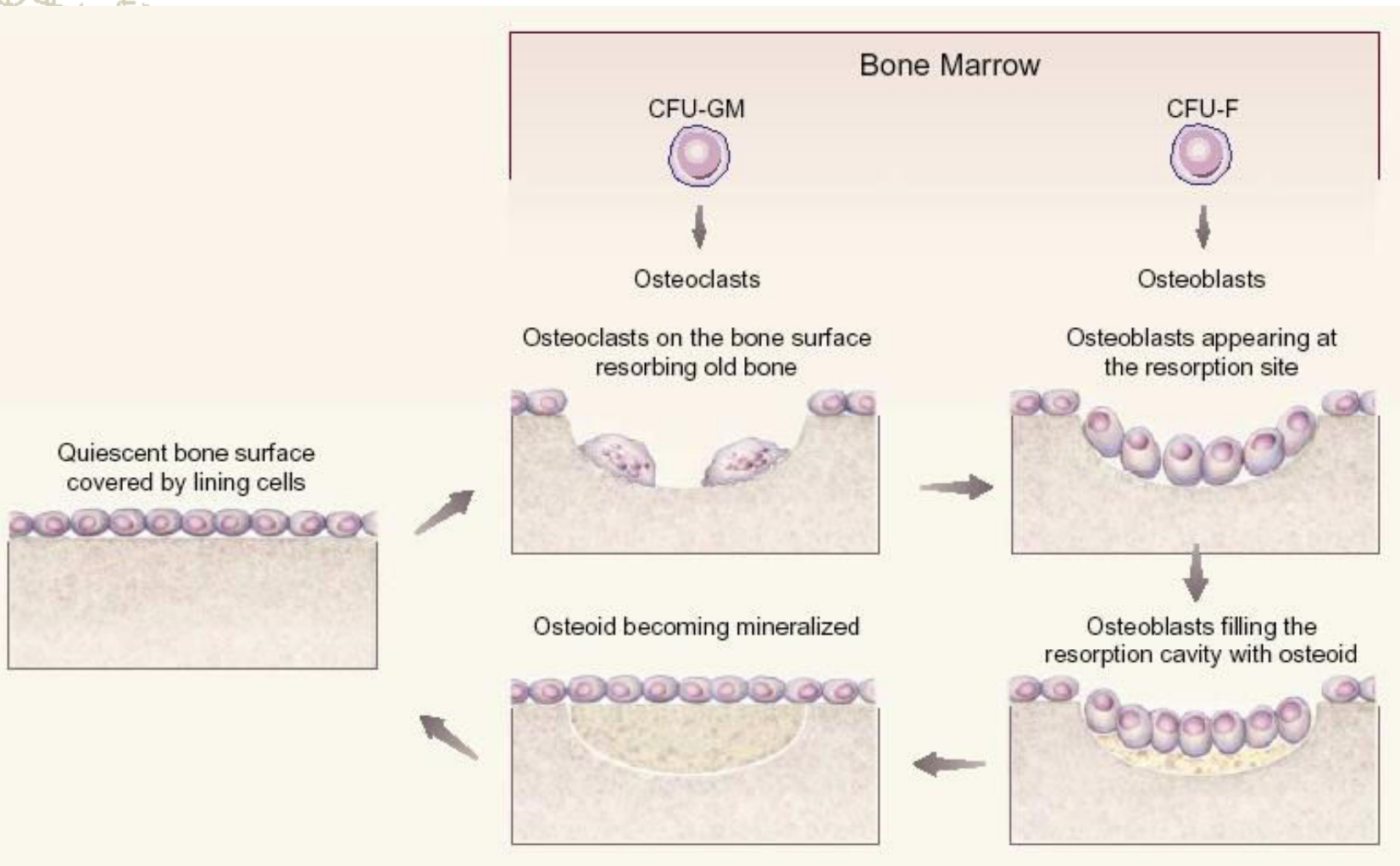
Risk Factors

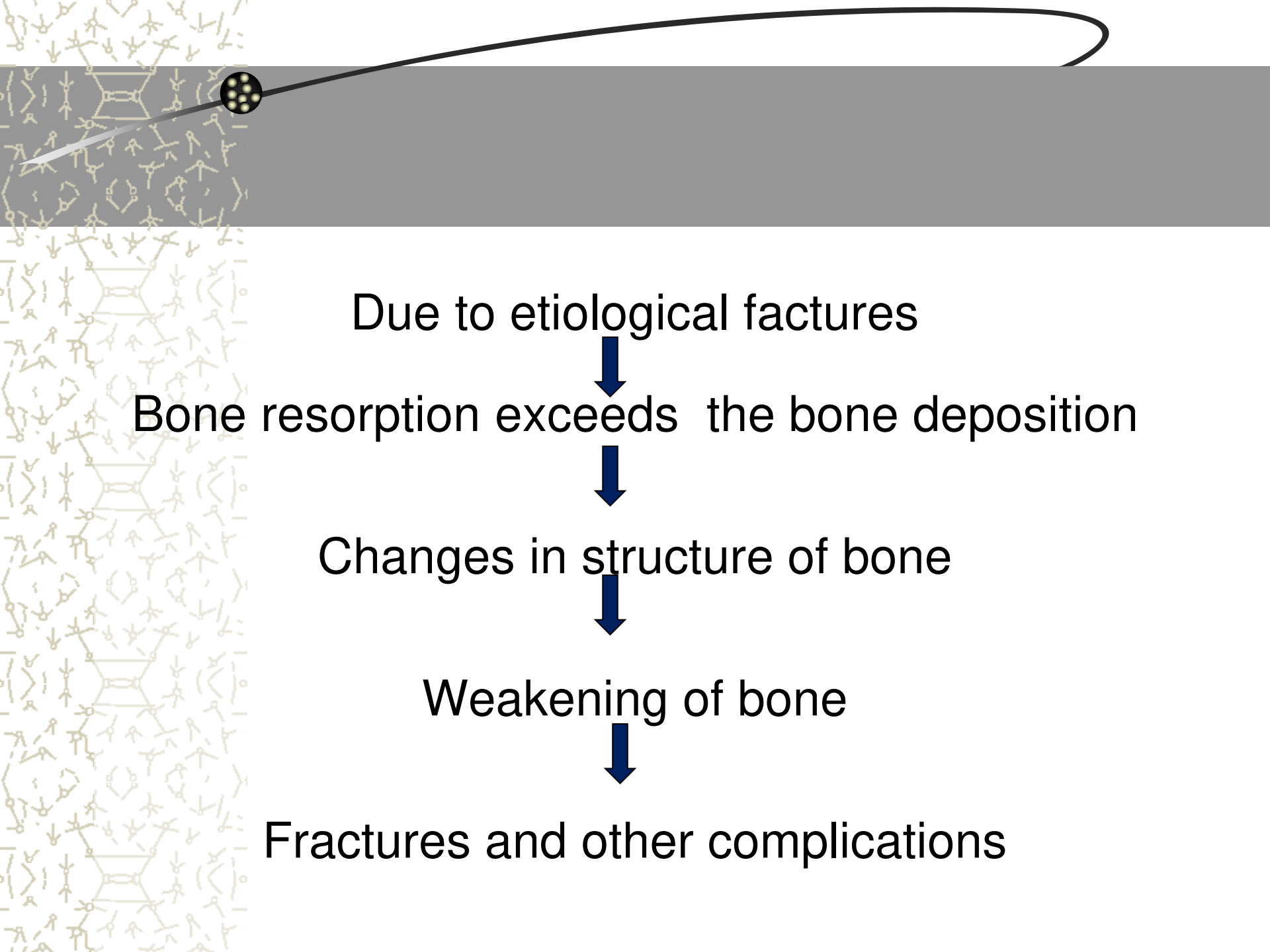
- ✚ Aging
- ✚ Post menopausal estrogen deficiency
- ✚ Smoking
- ✚ Alcoholism
- ✚ Increased caffeine intake
- ✚ Decreased calcium and vitamin D in diet



Pathophysiology







Due to etiological factors



Bone resorption exceeds the bone deposition



Changes in structure of bone



Weakening of bone



Fractures and other complications



Clinical manifestations of osteoporosis

- Often called as 'silent disease'
- Collapsed vertebrae may initially manifested as back pain , loss of height or spinal deformations like kyphosis



Diagnosis of Osteoporosis

- History collection and Physical examination
- Measurement of bone mineral content
 - Dual energy X-ray absorptiometry (DXA)
 - Quantitative Ultrasound of bone
 - CT scan
 - Radiography

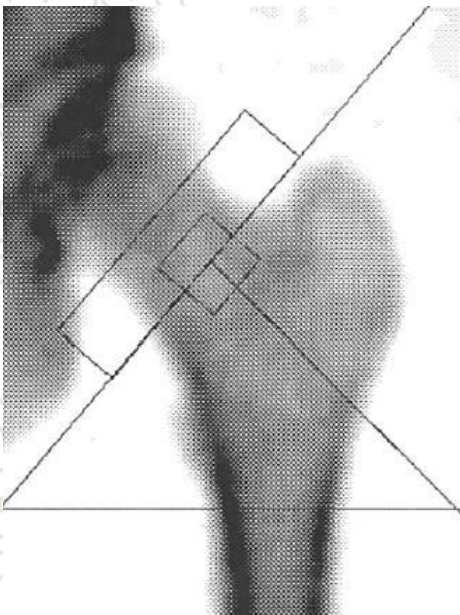


Cont....

Blood tests

- Serum calcium
- Serum phosphorous
- Alkaline phosphate

Dual X-ray absorptiometry



2-dimensional study

☀ BMD = Amount of mineral
Area

☀ Accuracy at hip > 90%

☀ Low radiation exposure

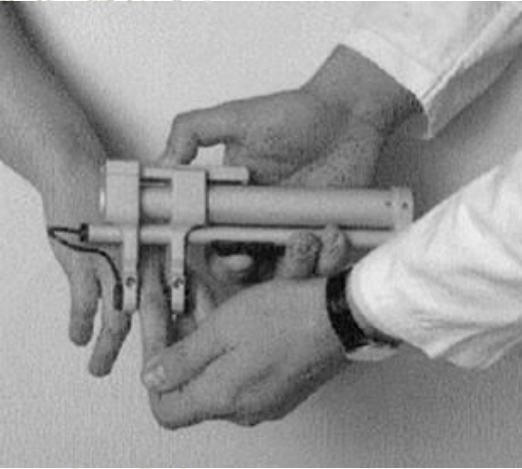
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Osteomalacia

Osteoarthritis

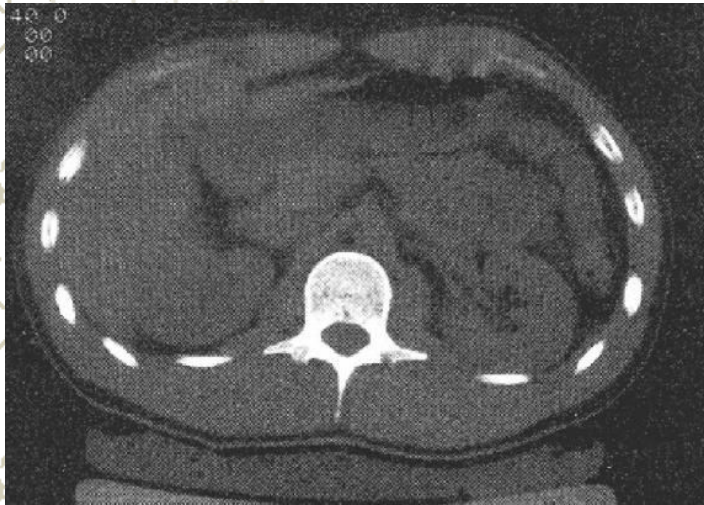
Previous fracture

Ultrasonic measurement

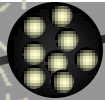
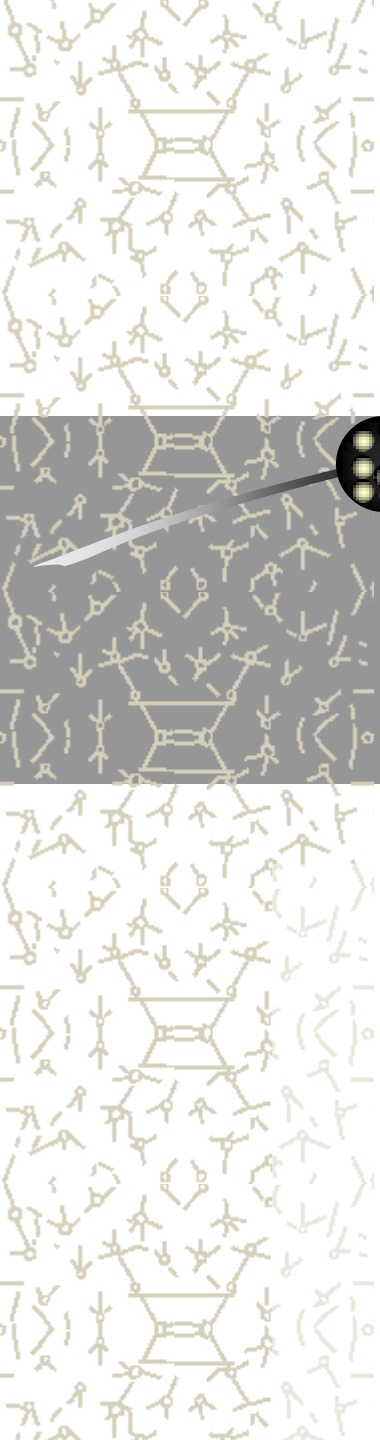


- ✦ Broad-band ultrasound attenuation or ultrasound velocity
- ✦ No radiation exposure
- ✦ Cannot be used for diagnosis
- ✦ Preferred use in assessment of fracture risk

CT scan



- ⚡ True volumetric study
- ⚡ Most useful in cancellous bone assessment
- ⚡ Avoid effect of degenerative disease
- ⚡ Drawback
 - High cost
 - High radiation exposure
 - Difficult quality control



Management



Available treatment

- ✱ Calcium Replacement therapy
- ✱ Hormone replacement therapy
- ✱ Estrogen receptor modulators (SERMs)
 - Raloxifene [Evista]
Mimics the action of estrogen and reduces bone resorption
 - Teriparatide [Forteo]
A portion of parathyroid hormone that increases the action of osteoblasts



Vitamin D

- ✦ Essential for intestinal absorption of calcium
- ✦ Daily recommendation
400 - 800 IU/day
Esp. Low sunlight exposure, elderly, low
vitamin D intake



Bisphosphonates

They inhibit osteoclast mediated bone resorption thereby increase bone mass

Common bisphosphonates used are

- Alendronate [Fosamax]
- Clodronate [bonafos]
- Etidronate
- Ibandronate
- Pamidronate [Aredia]



Calcitonin

- Peptide from Thyroid C cell
- Direct inhibition of osteoclast activity
- Less effective in cortical bone
- Salmon calcitonin nasal spray
- Dose 200 IU/day



Alternative Therapies

- ☼ Calcium rich diet

- ☼ Exercise

 - Adolescent - Increased peak bone mass

 - Elderly - Small increase in BMD

 - Fitness may prevent falling

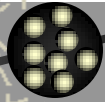
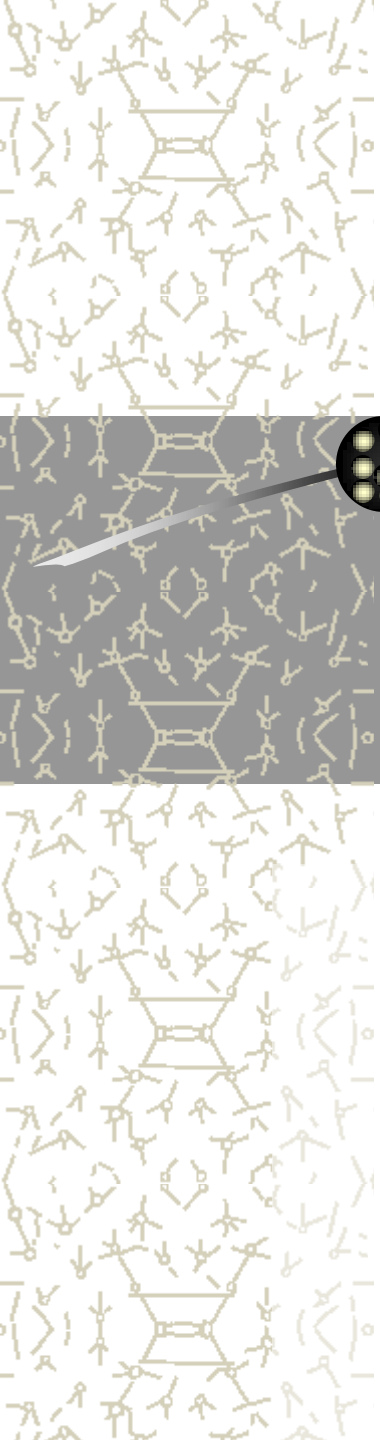
- ☼ Cessation of smoking



Nursing Management

Nursing diagnosis

1. Impaired physical activity related to osteoporosis
2. Risk for fractures related to weakness of bone
3. Imbalanced nutritional status less than body requirement related to less calcium intake
4. Pain related to fracture

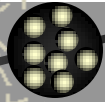
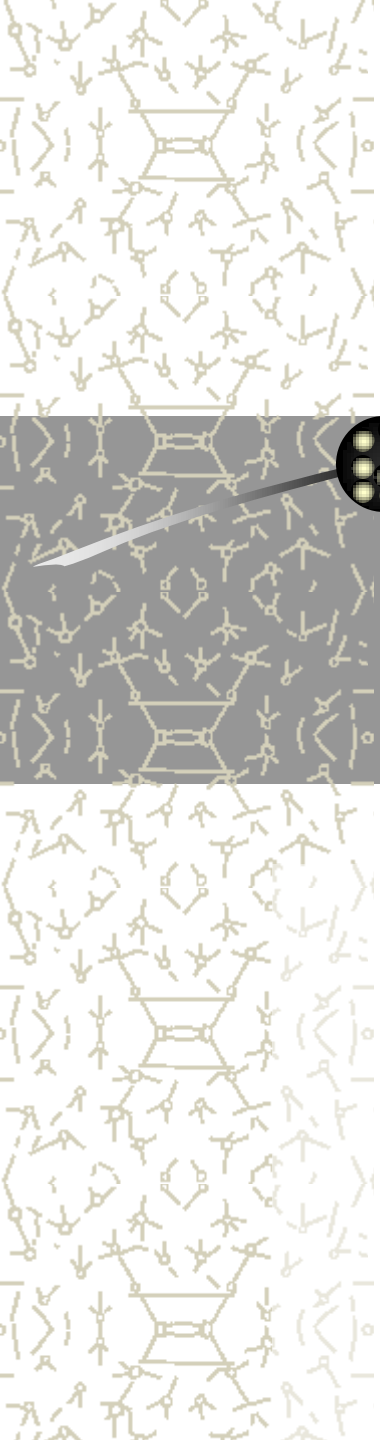


Nursing Interventions

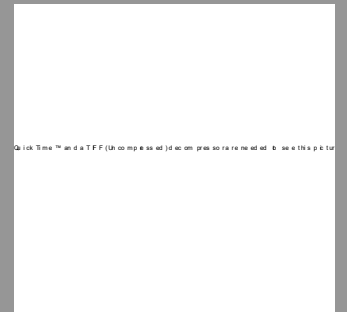




CONCLUSION



Questions...????





Assignment

✦ Write a nursing care plan for the patient with osteoporosis

✦ Date of submission : 20 / 01 / 2012



Reference

- Joyce M Black et.al , Medical surgical nursing : clinical management for positive outcomes , 7th edition , Saunders publications , Missouri ,2005

