

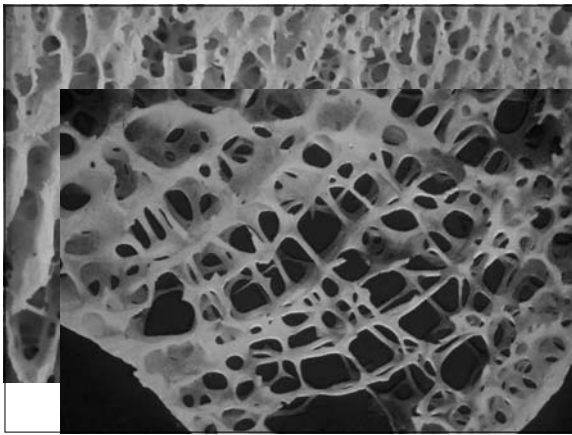


Disorders of Bone Mass

Osteoporosis

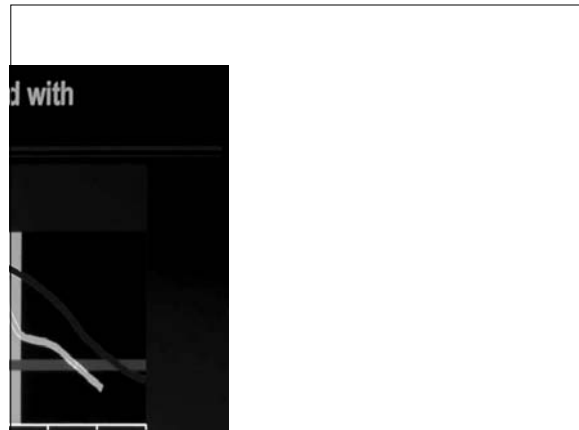
Definition

Loss of bone mass associated with deterioration of bone architecture and increased susceptibility to fracture



Epidemiology

75 million in US, Europe and Japan
 300,000 new hip fractures/ year
 500,000 vertebral fractures/ year
 1 of every 4 postmenopausal women



Osteoporosis Risks Factors

Genetic

- Race
- Familial prevalence

Age/ Sex

Endocrine

- Menopause
- Ovarian/ testicular dysfunction

Osteoporosis Risks Factors

Nutritional

- Low calcium
- High alcohol
- High caffeine/ sodium
- High anim. protein

Lifestyle

- Low physical activity
- Cigarette smoking



Osteoporosis Primary

- Postmenopausal
- Age-related
- Idiopathic

Osteoporosis Secondary

- Endocrine disorders
- Gastro-intestinal diseases
- Chronic Inflammatory diseases
- Malignant neoplasms
- Connective tissue disorders
- Drug-induced

Osteoporosis Risk Factors

Endocrine

- Ovarian/ testicular dysfunction
early menopause
- Cushing syndrome
- Hyperthyroidism
- Hyperparathyroidism (severe)

Osteoporosis Clinical

Fracture sites

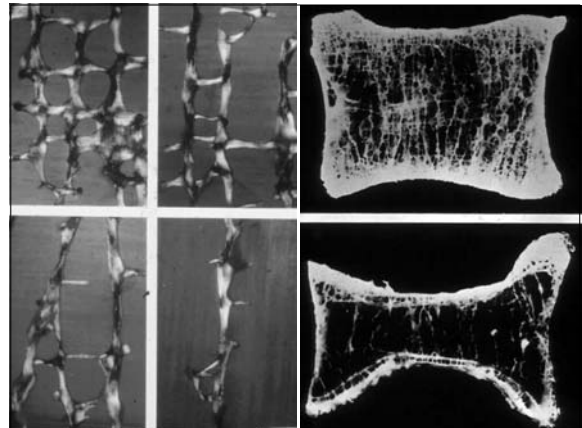
- Spine
- Hips
- Distal radius (Colle's fracture)
- Proximal humerus

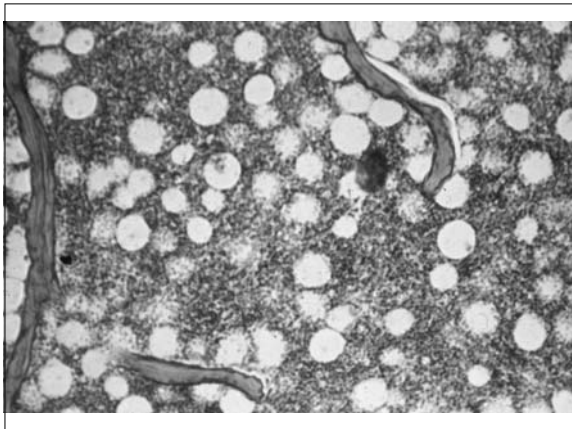
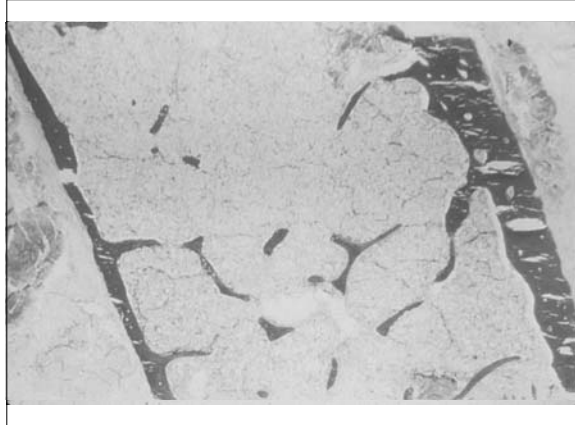
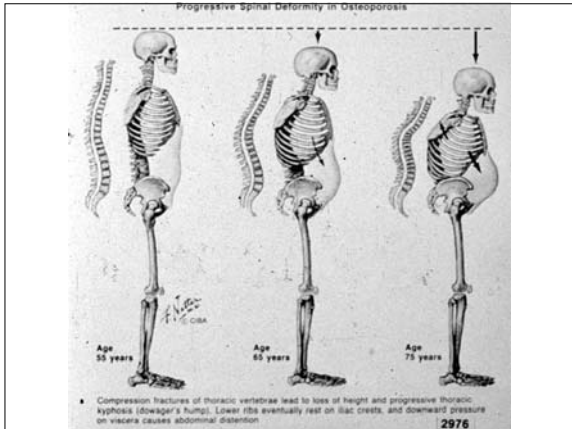
Radiology Routine Xrays

Unsuitable for early detection
Indicate advanced disease

Radiology Routine Xrays

- "Fish-mouth" deformity
- Thin cortices
- Diffuse osteopenia
- Old or current fractures

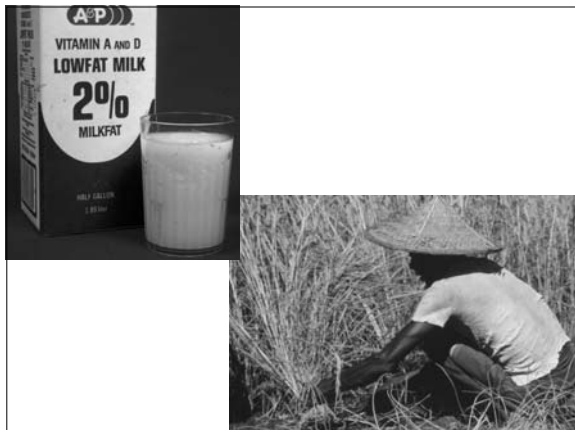
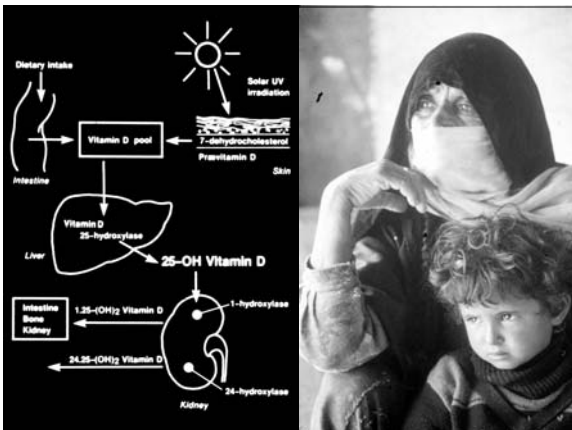




Diseases of Mineralization

Rickets

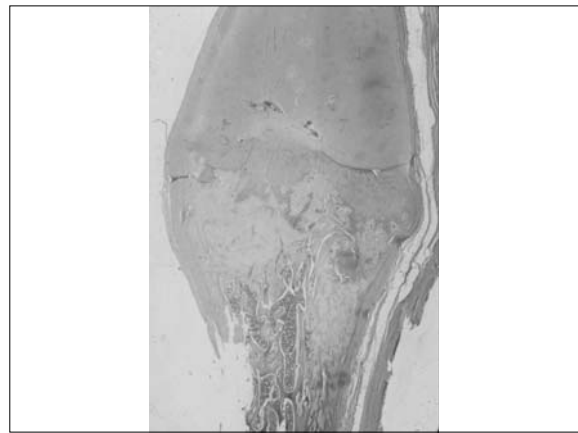
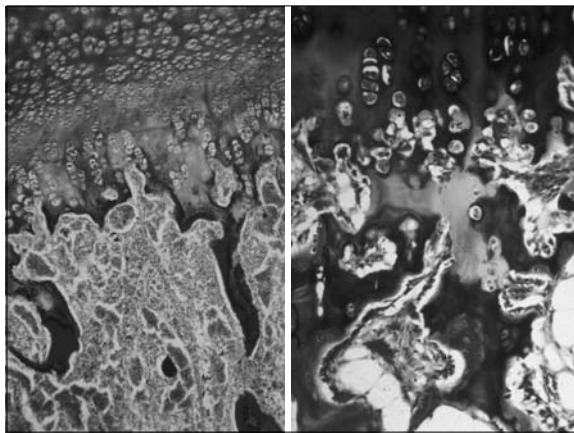
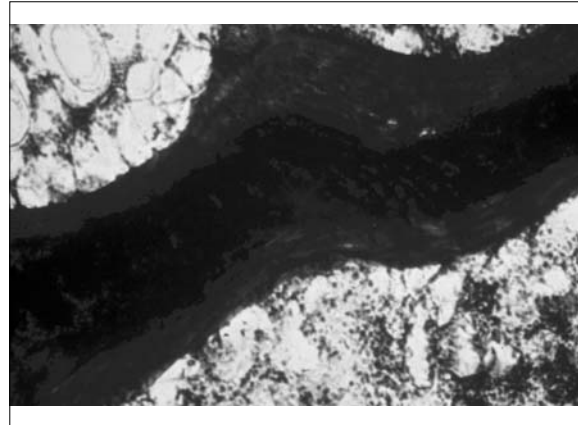
Osteomalacia



Rickets Pathogenesis

Defective mineralization/
turnover

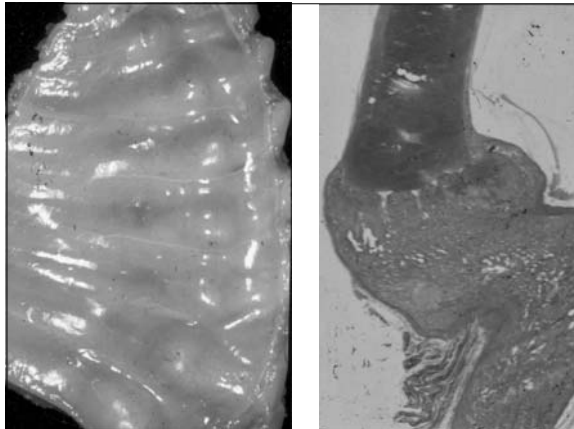
- Bone matrix
- Growth cartilage




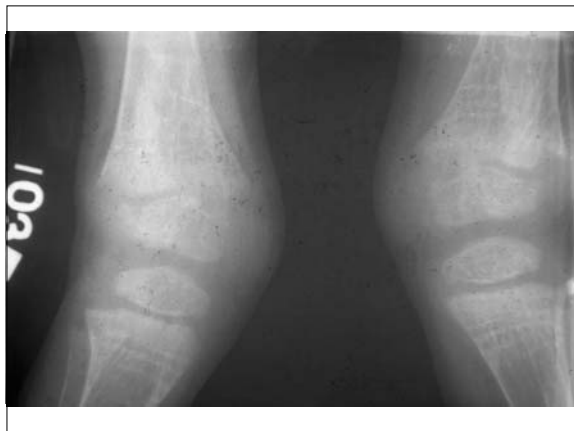
Rickets Clinical

- Cranio-tabes/ frontal bossing
- Widely opened fontanel
- Rachitic rosary
- Harrison groove/pigeon breast
- Swelling of wrists and ankles
- Genu valgum/ varum





	<p style="text-align: center;">Rickets Radiology</p> <p>Growth plates Blurred/Widened Epiphyses cup-shaped</p> <p>Long bones Deformities Fractures</p>
--	--



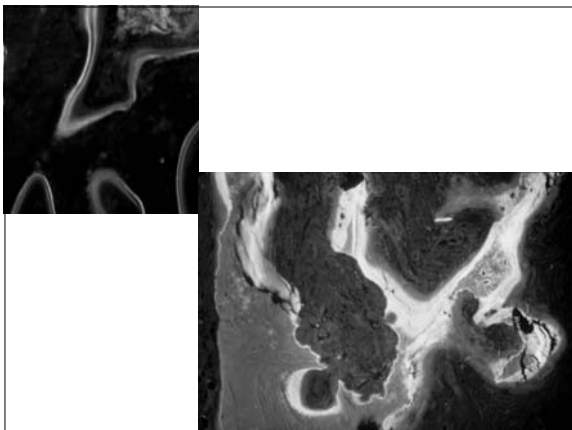
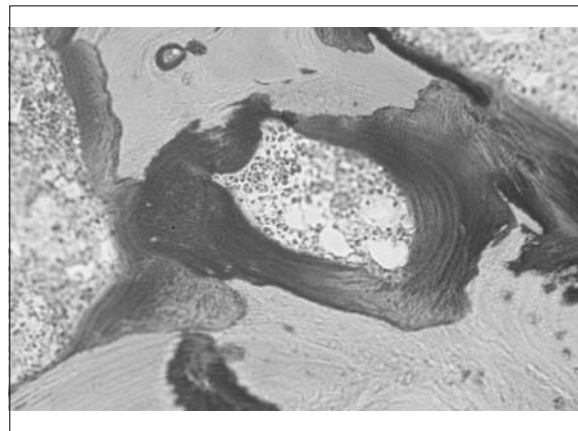
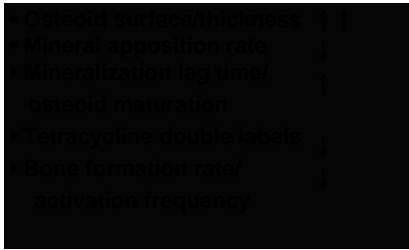
<p>Osteomalacia Pathogenesis</p>
<p>Defective mineralization/ turnover</p> <ul style="list-style-type: none"> • Bone matrix

<p>Osteomalacia Clinical</p>
<ul style="list-style-type: none"> • Bone pain • Fractures • Proximal myopathy • Muscle weakness • Waddling gait

<p>Osteomalacia Radiology</p>
<p>Bowing of long bones (genu varum)</p> <p>Pseudo-fractures “Looser’s lines”</p> <p>Fractures (Milkman)</p>

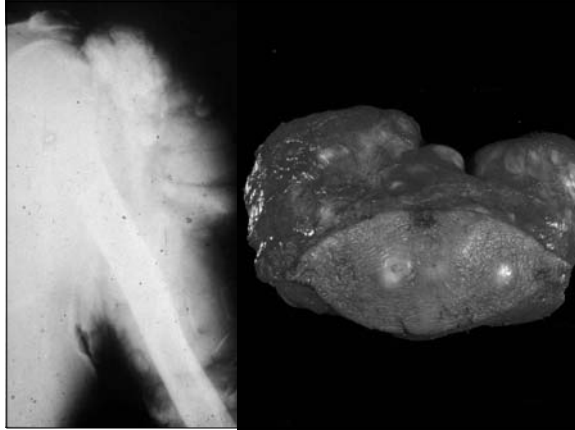
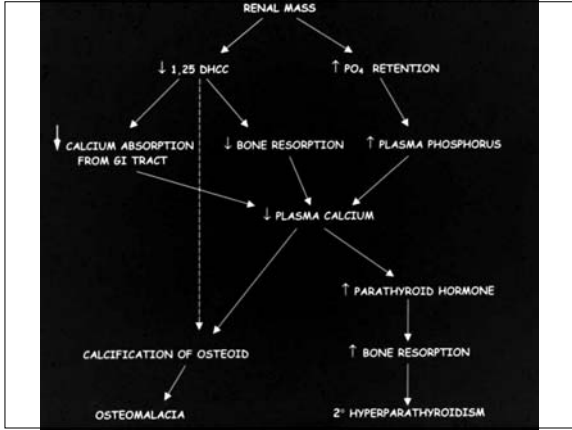


Rickets/ Osteomalacia
Histopathology/ Morphometry



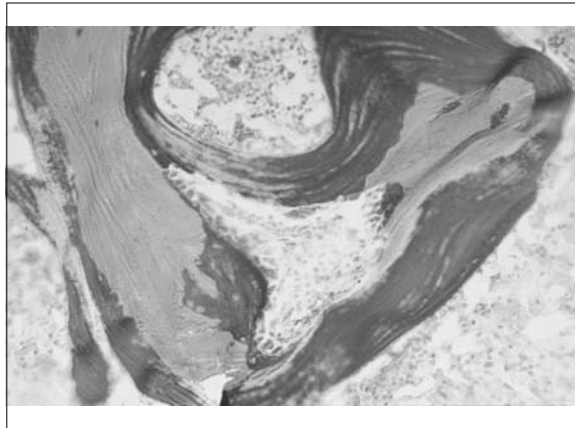
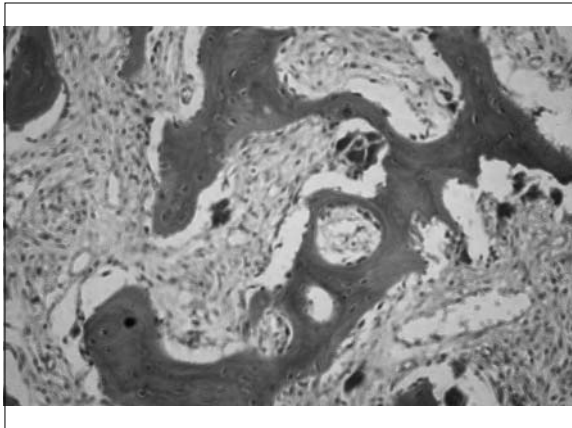
Renal Osteodystrophy
Definition

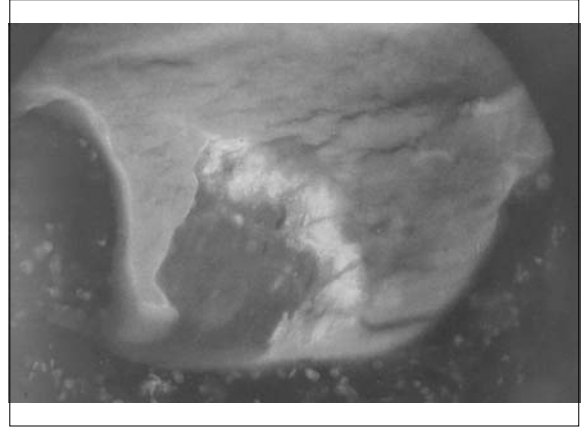
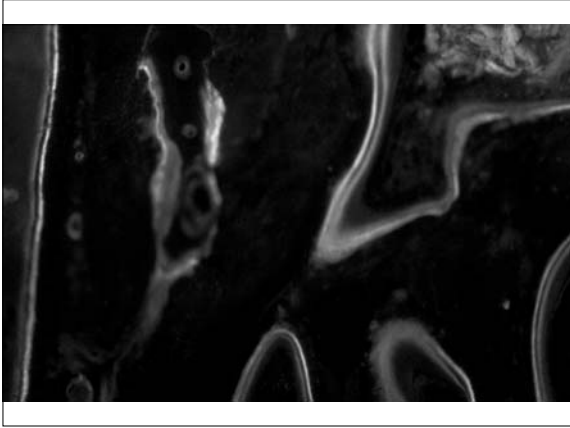
A spectrum of skeletal abnormalities resulting from renal failure



Renal Osteodystrophy Subtypes

- Secondary hyperparathyroidism
- Mixed bone disease
- Low bone turnover
 - Pure osteomalacia
 - Aplastic/ adynamic bone disease





CLASS OF 2009

Thank you!