

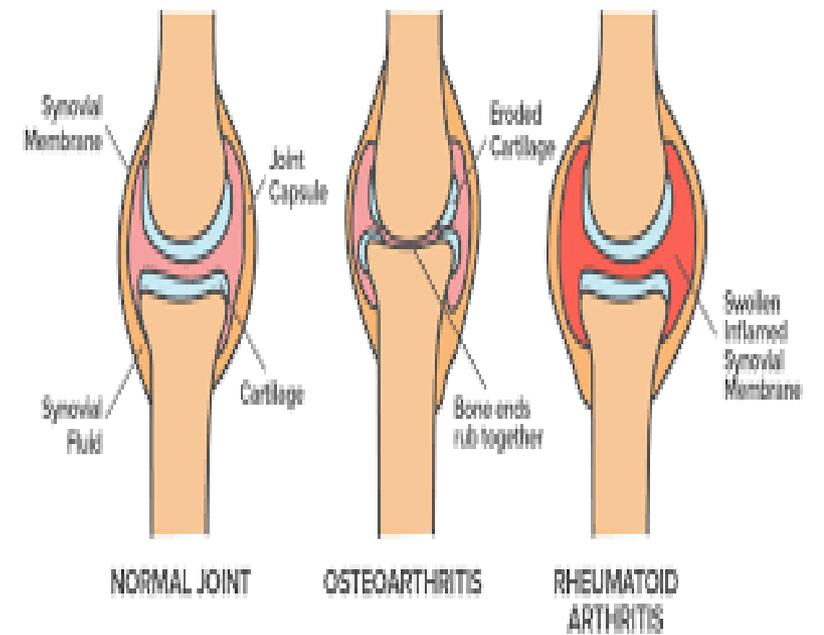
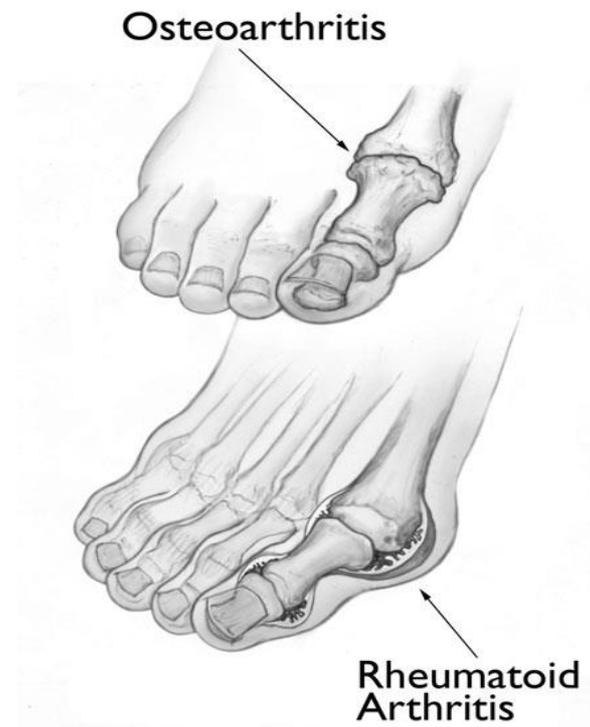
Skeletal System Diseases and Disorders

HS1/ DHO 7.4

Obj: Discuss the diseases and disorders of the skeletal system and related signs, symptoms, and treatment methods.

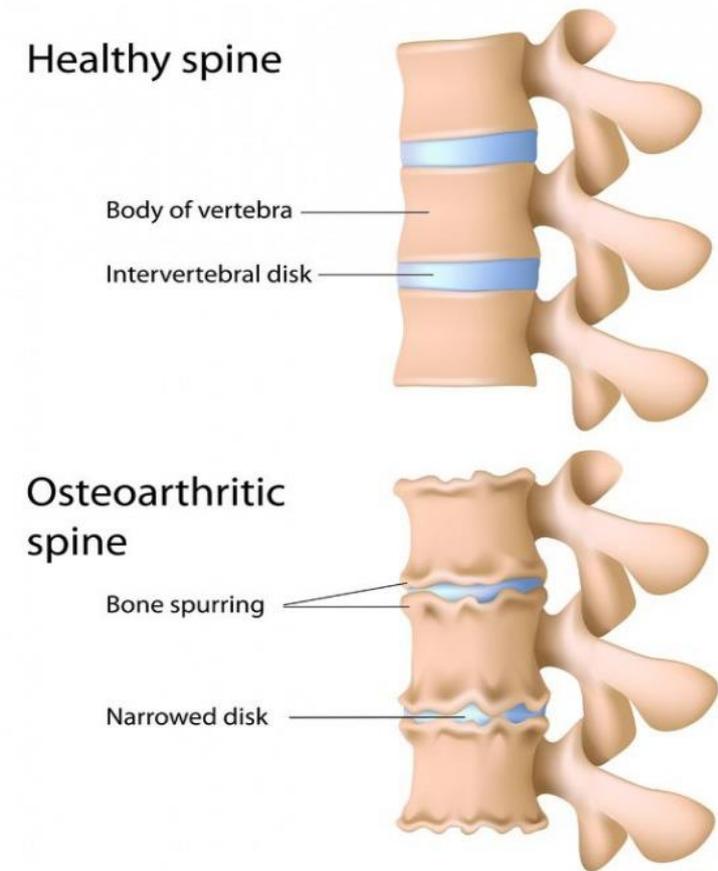
Arthritis

- Inflammation of the joints
- Group of diseases
- 2 main types: osteoarthritis and rheumatoid arthritis



Osteoarthritis

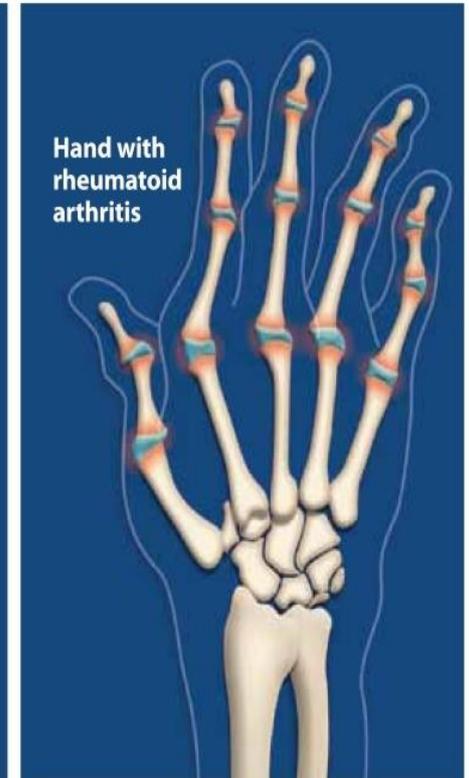
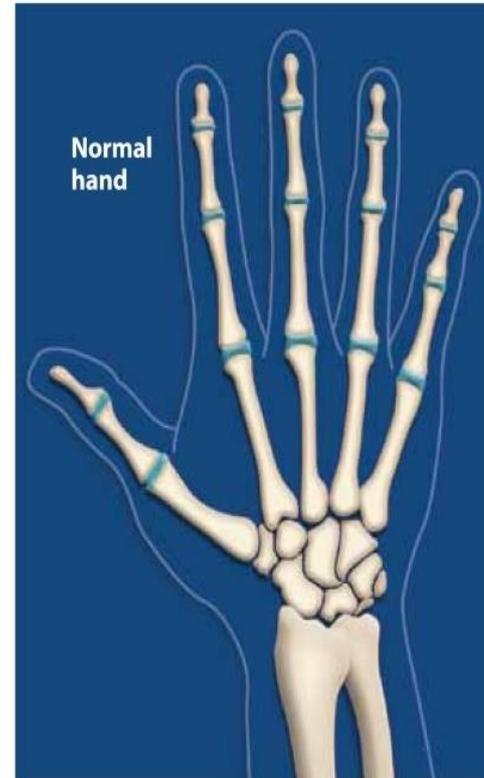
- Most common form
- Chronic disease results from aging
- Affects hips and knees
- S/S: pain, stiffness, aching, limited ROM
- Trx: no cure; rest application of heat and cold, aspirin and anti-inflammatory meds, steroids, and special exercises



Rheumatoid Arthritis

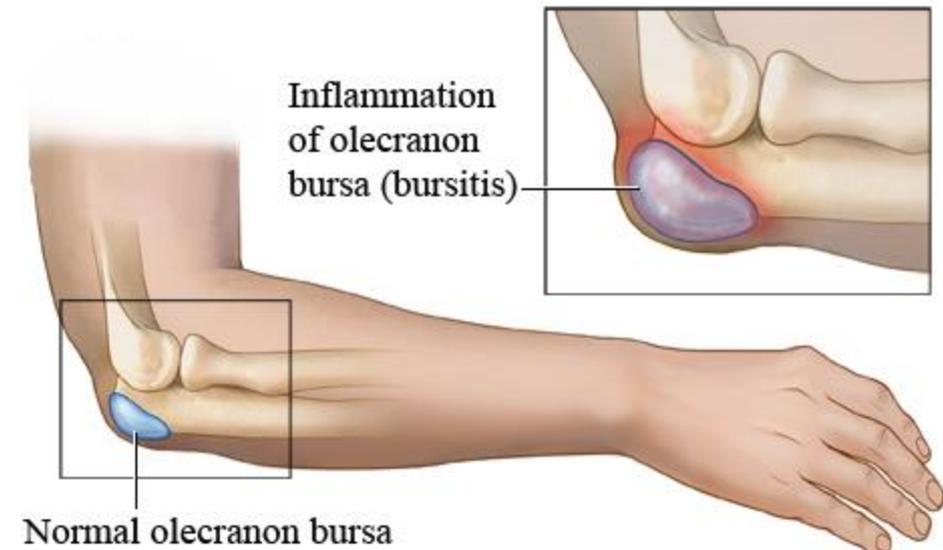
- Autoimmune and chronic
- Affects the connective tissues and joints
- 3x more common in women than men
- Onset usually between 35-45 years
- Progressive attacks can cause scar tissue formation and atrophy of bone and muscle, which ends in permanent deformity and loss of function
- Early treatment important to reduce pain and limit damage to joints
- Trx: same as osteoarthritis but not heat/cold application
- Surgery: with severe joint damage, arthroplasty (joint replacement) of hips and knees

RA



Bursitis

- Inflammation of bursae: fluid-filled sacs surrounding the joints
- Affects joints with repetitive motions such as shoulder, elbows, hips, knees
- S/S: severe pain in motion and at rest, limited movement, fluid accumulation in the joint
- Trx: pain meds, NSAID ie ibuprofen, rest, aspirating the joint (withdrawing fluid with a needle), physical therapy to preserve joint motion



Bursitis

BURSITIS



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Needle
Inserted
into Bursa



..Fluid Drained



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Fractures

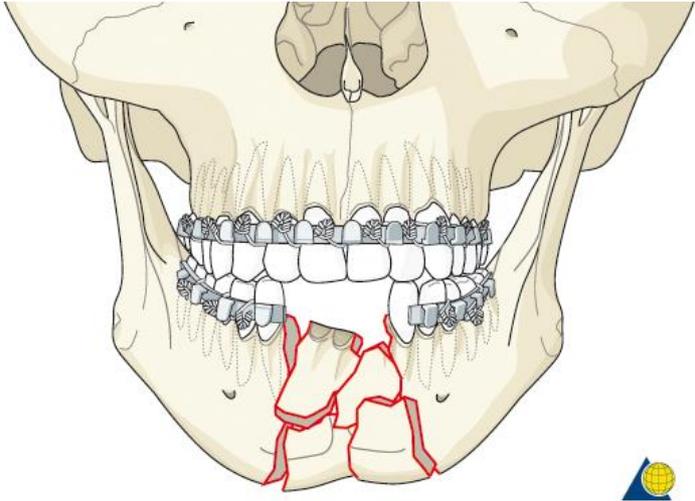
- Fracture is a crack or break in the bone
- 8 types of fractures
- Before bone can heal, bone must be in proper alignment-process called reduction
- Closed reduction involves positioning the bone and applying cast or splint
- Open reduction involves surgical repair

Comminuted Fracture

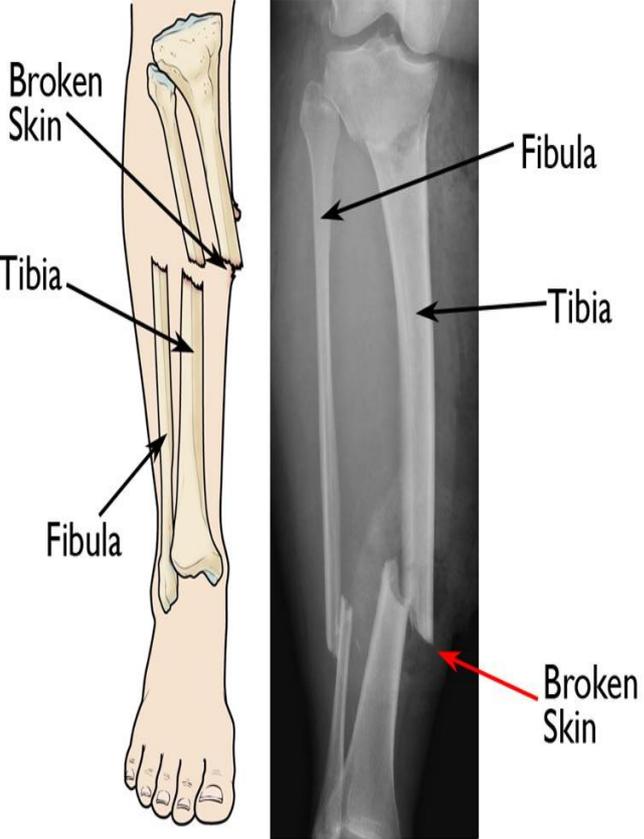
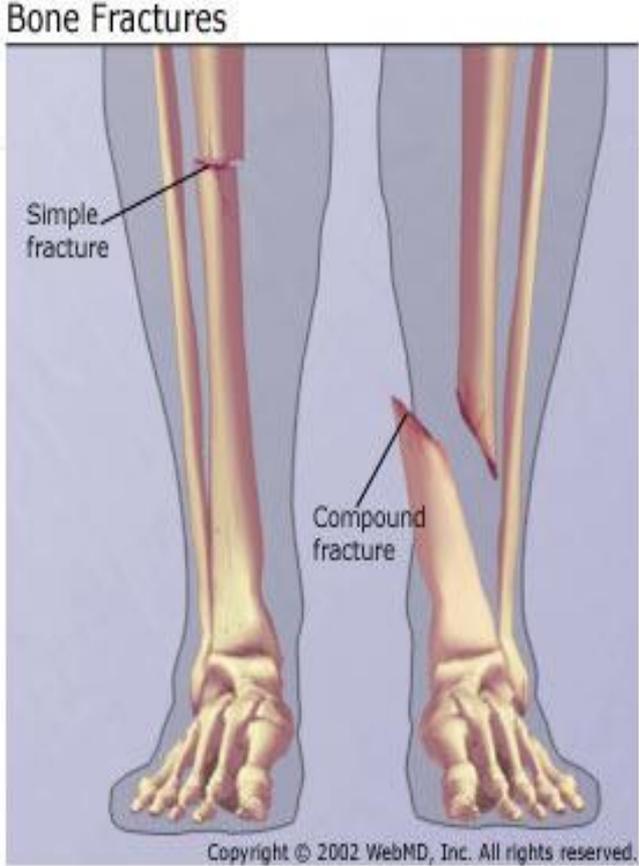
Comminuted Fracture



Comminuted Fracture of Heel Bone



Simple and Compound Fractures



Types of Fractures

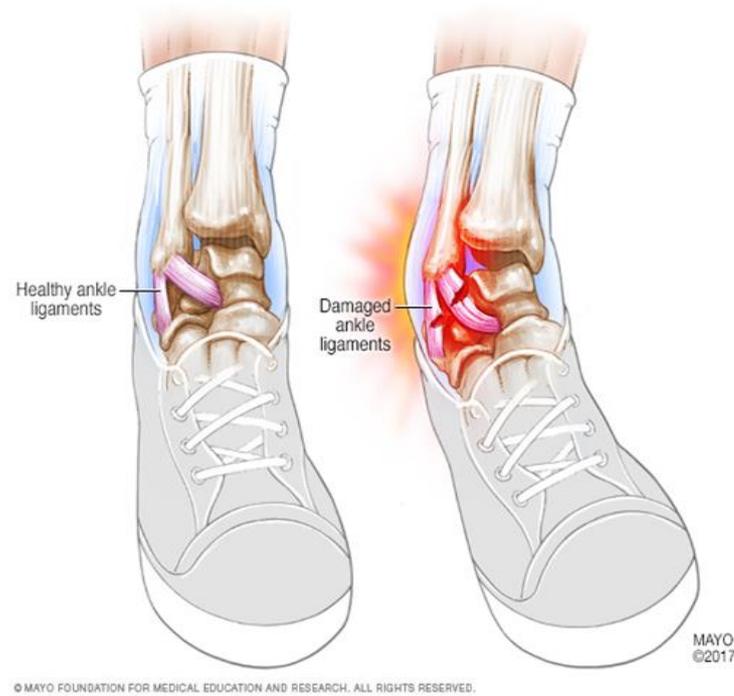
Figure 7-25, pg 167

- Greenstick: common in children, bone bent and splits
- Simple or closed: complete break of the bone with no damage to skin
- Compound or open: break of the bone with damage to the skin
- Impacted: broken bones jam into each other
- Comminuted: bone breaks into more than two pieces
- Spiral: bone twists such as in skiing and skating accidents, can have one or more breaks
- Depressed: piece of bone moves inward such as with head injuries
- Colles: breaking of the distal radius, usually by falling on outstretched hand

Dislocation

- The bone is forcibly displaced from a joint
- Occurs in shoulders, fingers, knees, and hips
- Dislocation is reduced (bone put back in the joint) and then immobilized with splint, cast, or traction

Sprain



- Twisting motion tears the ligaments at a joint
- Wrist and ankle most common site
- S/S: pain, swelling, discoloration, limited movement
- Trx: rest, elevations, immobilization with elastic bandage or splint, and cold applications

Osteomyelitis

- Bone inflammation usually caused by pathogenic organism
- Causes formation of abscess within the bone and accumulation of pus in medullary canal
- Infection in the bone can impede blood circulation and cause bone death
- S/S: pain at the site, swelling, chills, and fever
- Trx: IV abx, support for damaged bones with surgically implanted hardware, and possible amputation for bone death

Osteomyelitis

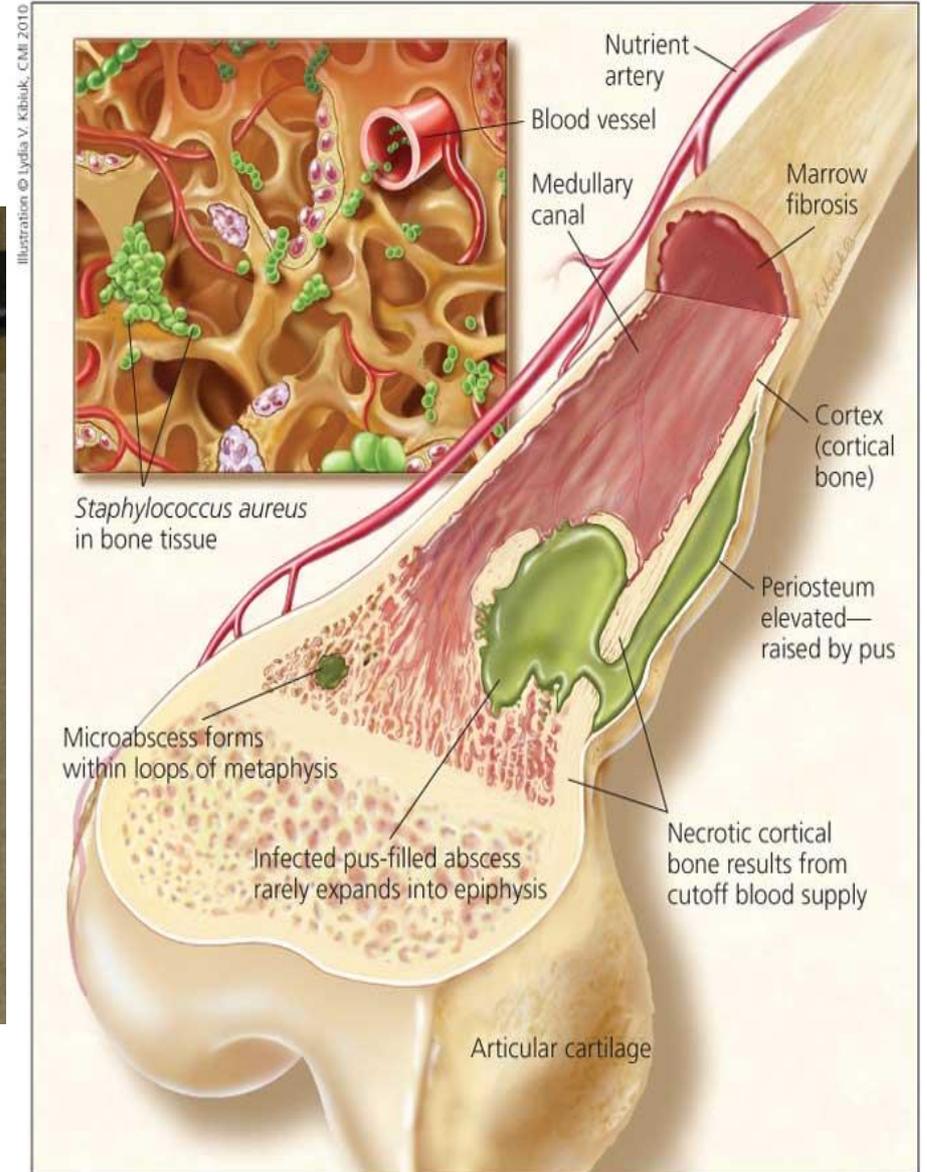
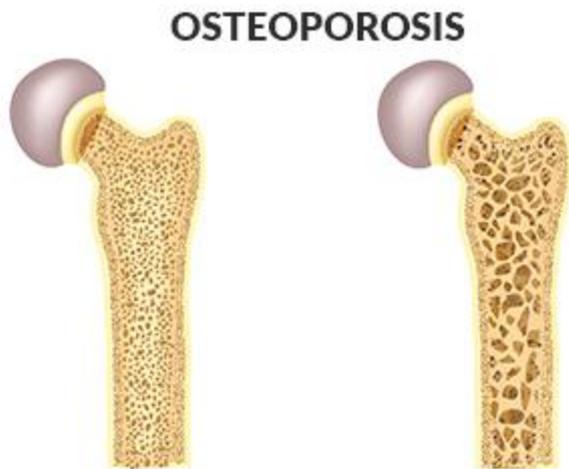


Figure 1 – This diagram shows hematogenous osteomyelitis of a tubular bone in a child.

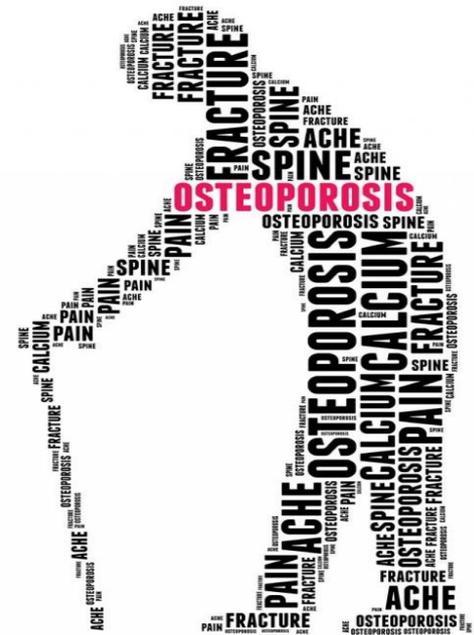
Osteoporosis

- Increased porosity or softening of the bones
- Metabolic disorder caused by hormone deficiency (usually estrogen in women), prolonged lack of calcium in diet, and sedentary lifestyle
- Fractures occur in weight-bearing bones such as back or hip
- S/S: loss of height over time, stooped posture
- Bone density tests lead to early detection and preventative treatment
- Trx: increase calcium and vit D, meds to increase bone mass such as Fosamax or Citracel, physical therapy to build bone strength and improve posture, and/or estrogen replacement therapy

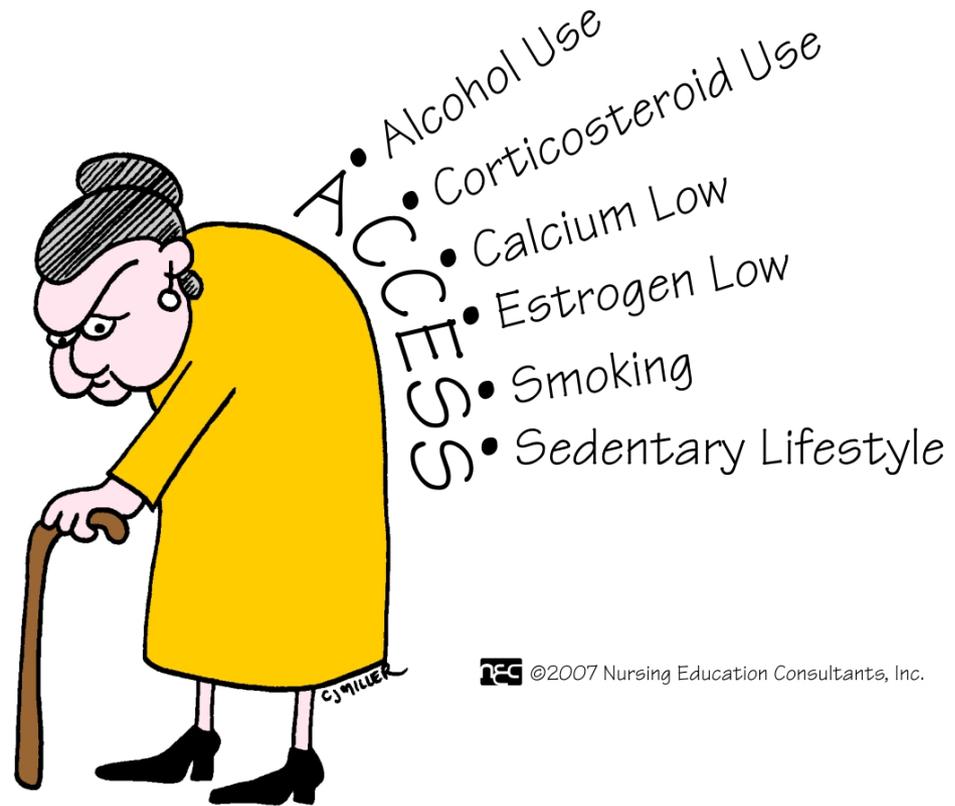


NORMAL BONE

BONE WITH
OSTEOPOROSIS



OSTEOPOROSIS RISK FACTORS

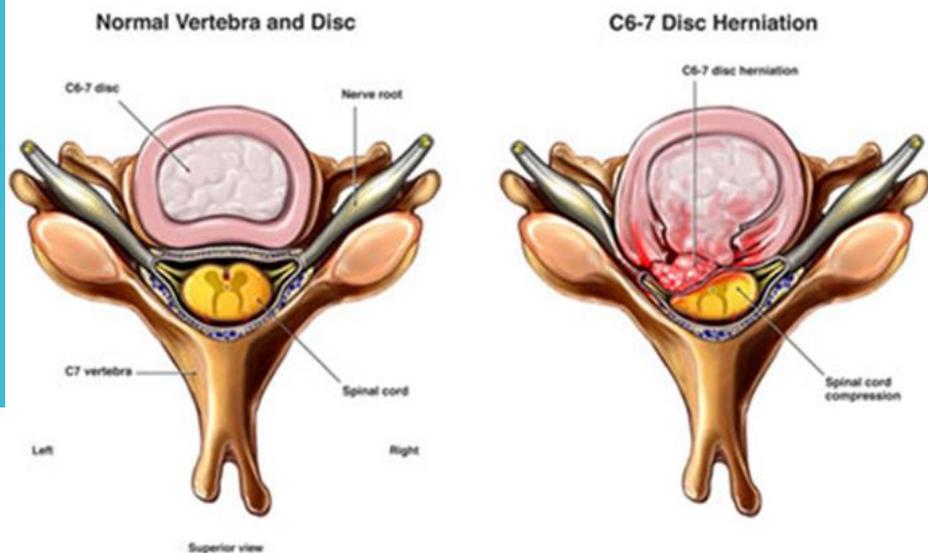


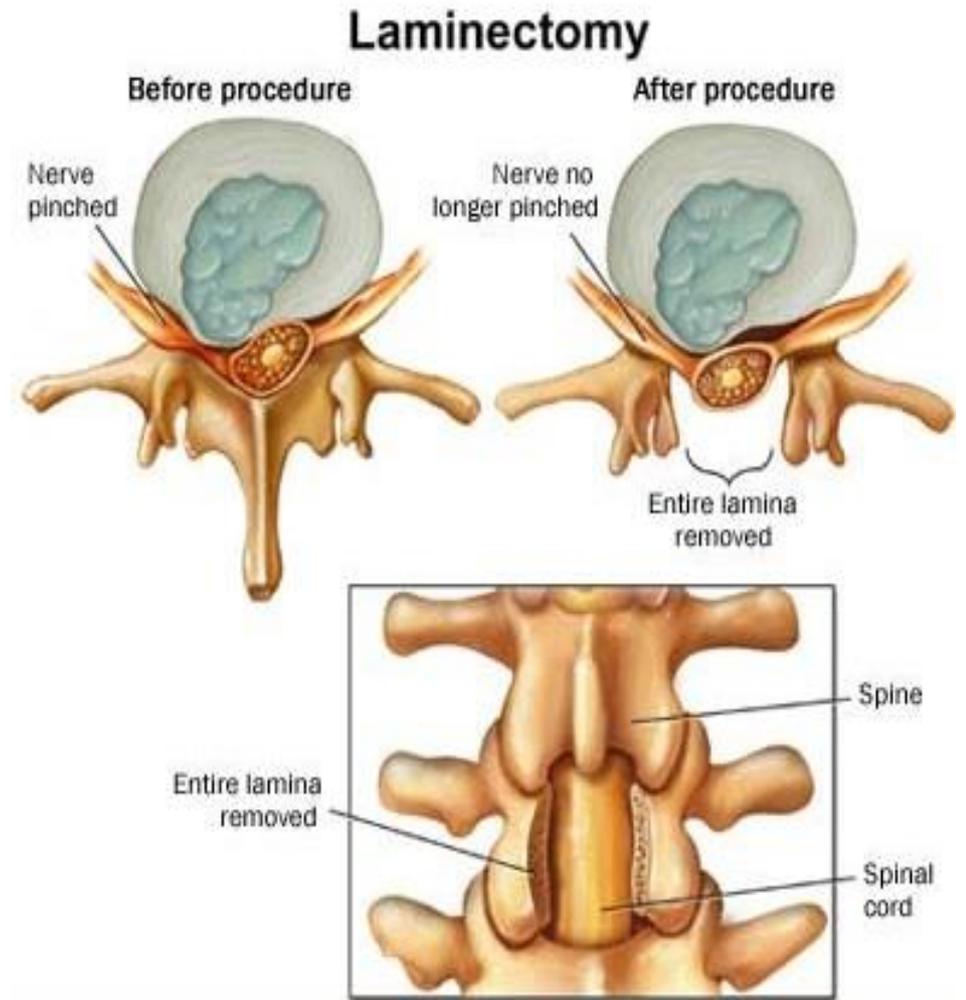
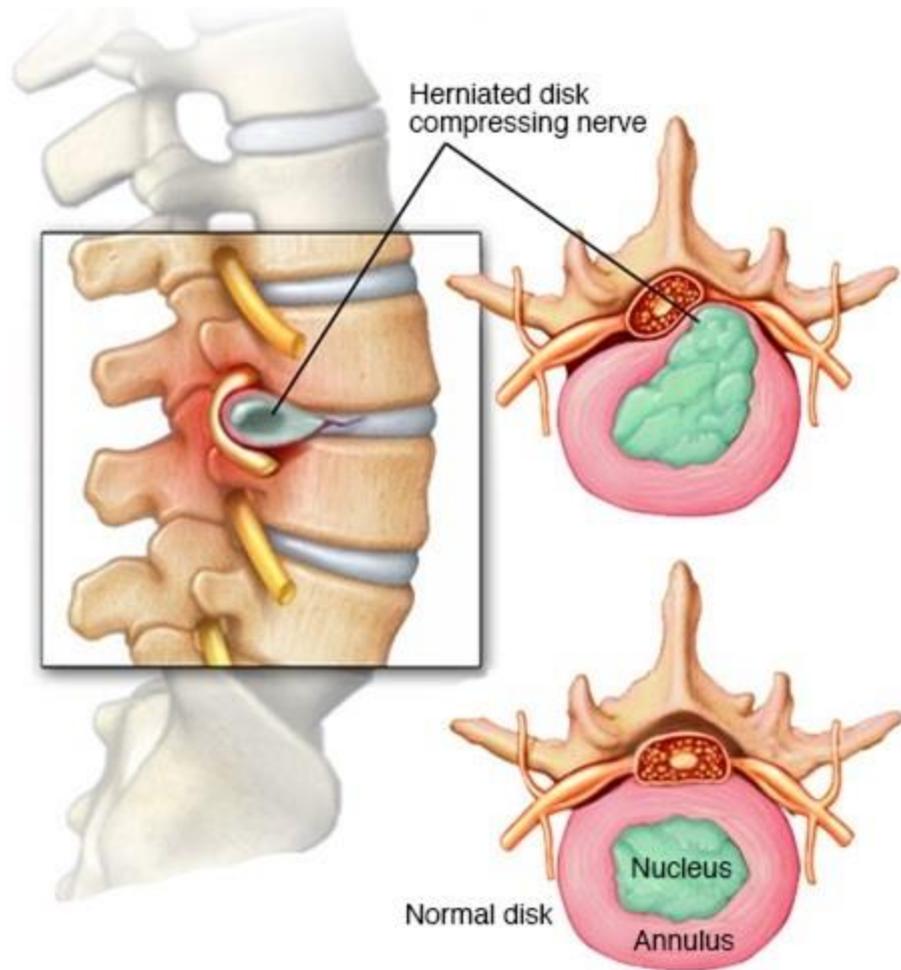
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“Access” (leads to) Osteoporosis

Ruptured Disk

- AKA herniated or slipped disk
- Occurs when the intervertebral disk ruptures or protrudes out of place and puts pressure on spinal nerve
- Common site is lumbar-sacral area
- S/S: severe pain, muscle spasm, impaired movement, numbness, and/or tingling
- Trx: pain meds, muscle relaxant meds, anti-inflammatory meds used first; then rest, traction, PT, massage therapy, chiropractic treatment, and/or heat and cold applications
- Laminectomy, surgical removal of the protruding disk, may be necessary in small # of cases
- Spinal fusion may be performed (insert screw/rod into the spine to permanently immobilize the affected vertebrae) if the pain persists





Spinal Curvatures

- Abnormal curvature of the spinal column
- Kyphosis: hunchback or rounded bowing of the back at thoracic area
- Scoliosis: side-to-side or lateral curvature of the spine
- Lordosis: swayback or abnormal inward curvature of the lumbar region
- Causes: poor posture, congenital defects (at birth), structural defect of vertebrae, malnutrition, and degeneration of vertebrae
- Trx: therapeutic exercises, firm mattresses, and/or braces, or for severe deformities may need surgery