

NOTES: Skeletal System Part 3 - Joints & Disorders

Joints

- _____
- Functions of joints:
 - Hold bones together
 - Allow for mobility
- Joints are classified by the amount of movement allowed

Joint Vocabulary

- _____
 - Connective tissue that connects bone to bone
- _____
 - Connective tissue that connects bone to muscles to further stabilize joint
- _____
 - Lubricating fluid found _____ bones to reduce friction
- _____
 - Fluid-filled sac that cushions joint
 - Ex: knee joint
- _____
 - Cartilaginous pads of tissue between the tibia and the femur

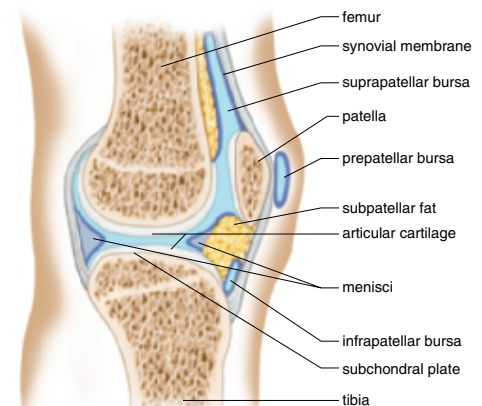
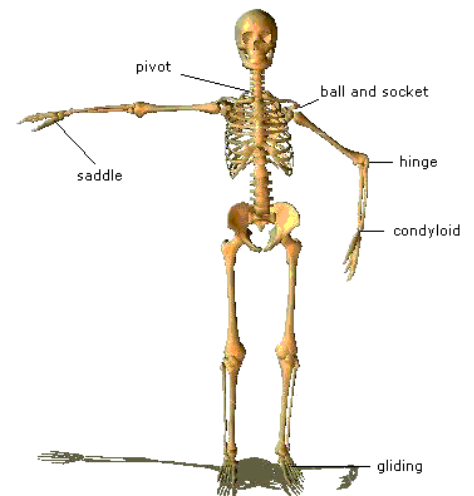
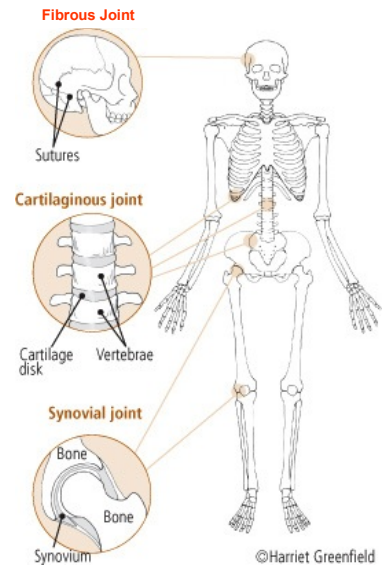
Structural Classification of Joints

- _____:
 - Generally _____
 - Fibrous connective tissue join bone to bone
 - Example: _____
- _____:
 - Immovable or _____
 - Fibrocartilage found between bones
 - Example: ribs/sternum, _____, pelvis
- _____:
 - _____
 - Bones do not come in contact with each other
 - 6 Types of Synovial Joints (see tree map for details)
 - Pivot, Saddle, Ball & Socket, Hinge, Condylod, Gliding
 - _____

Knee Injuries

1. Torn Meniscus

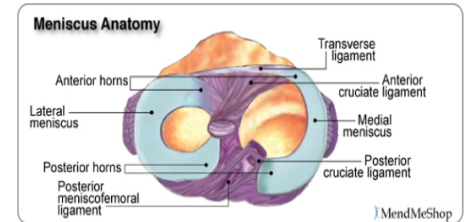
- The menisci _____ by compressing and spreading the weight evenly within the knee.
- The menisci are attached to the _____ and joint and ligaments, allowing the menisci to _____ freely.



Knee joint, lateral view

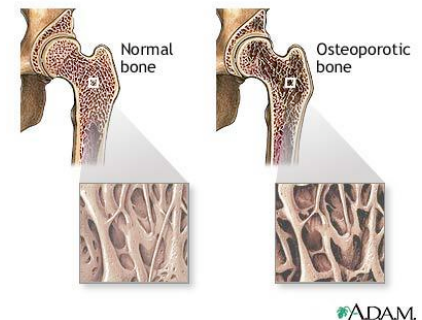
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- Tears are one of the most common knee injuries.
 - Grow weaker with _____, and tear as a result of minor injuries or movements.
 - The most common injury occurs when the knee joint is _____ and the knee is then _____.
 - A damaged meniscus can cause it to become caught between the bones of the joint (femur and tibia).
- Symptoms: Knee then becomes swollen, _____, popping or clicking with the knee, and difficult to move.
- Treatment: _____ to repair tear by trimming a portion of the meniscus (meniscectomy).



2. Torn ACL (Anterior Cruciate Ligament)

- ACL provides _____ to the joint
- Common injury in athletes in contact sports
- Occurs when the knee is locked with the foot planted and the knee is _____ quickly.
- The bones are more likely to rub against each other (chronic ACL deficiency).
- Can also damage the cartilage that covers the ends of the bones and can trap and tear the menisci.
- Left untreated it can lead to osteoarthritis.



Disorders of the Skeletal System

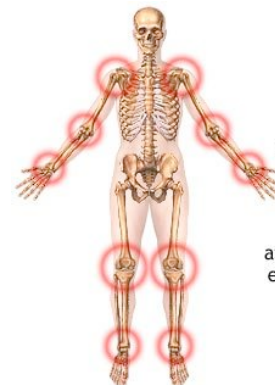
Osteoporosis

- Most _____ bone disease
- _____ women in USA over 50 have osteoporosis
- Men over 70 are at risk
- During menopause, _____ levels drop
- Body stops making _____ due to lack of _____, resulting in _____ bones and fractures

Arthritis

- _____ of one or more _____
- Breakdown of _____ causes bones to rub together, leading to pain, inflammation, and stiffness
- There are many different types of arthritis

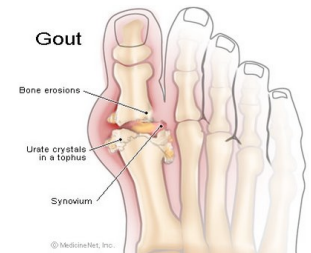
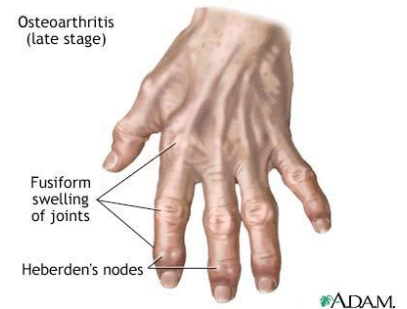
- 1. _____ (OA)
 - Most common type of arthritis
 - Caused by 'wear and tear' on joint
 - Cartilage breaks down and bony spurs may develop
 - Runs in families



Rheumatoid arthritis usually affects joints symmetrically (on both sides equally), may initially begin in a couple of joints only, and most frequently attacks the wrists, hands, elbows, shoulders, knees and ankles

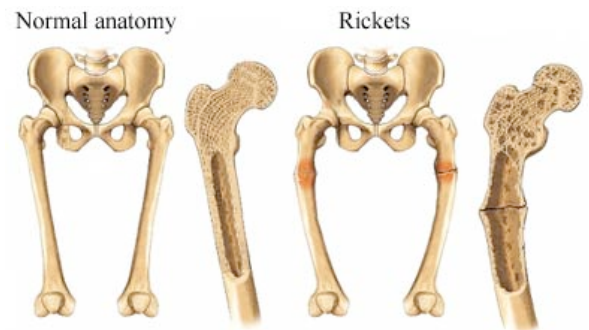
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- 2. _____ **arthritis (RA)**
 - Autoimmune disease
 - Body mistakenly attacks healthy tissues, breaking down cartilage
 - Common in middle-aged people
 - Women get RA more than men
- 3. _____
 - Type of arthritis that occurs when _____ builds up in the blood, causing crystals to form in the joint
 - Leads to major inflammation
 - More common in men, women after menopause, and those who drink alcohol



Rickets

- Uncommon
- Caused by a lack of _____, calcium, or phosphate, leading to a weakening and deformation of bones
- Vitamin D deficiency caused by lack of _____ or rare genetic X-linked dominant trait



Learning Goals:

1. Describe the function of joints.
2. Explain and summarize the classification of joints.
3. Describe the common types of knee injuries.
4. Compare osteoporosis, arthritis, and rickets