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, Condyloid, 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.
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).

The most common injury occurs when the knee joint is ___________ and the knee is ___________.

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
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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