

# Joins

- Joints are **articulations**
  - **Occur where two or more bones meet**
- Functions of joints:
  - **Hold bones together securely**
  - **Allow for mobility**
- Two ways joints are classified:
  - **Functionally**
  - **Structurally**

# Functional Joint Classifications

- Functional classifications focus **on the amount of movement the joint allows**
- 3 Types of Functional Joints:
  - **Synarthroses**
    - **Immovable joints**
  - **Amphiarthroses**
    - **Slightly movable joints**
  - **Diarthroses**
    - **Freely movable joints**
- **Synarthroses** and **Amphiarthroses** are restricted mainly to the axial skeleton, where firm attachments and protection of internal organs are priorities
- **Diarthroses** predominate in the limbs, where mobility is important

# Structural Joint Classifications

- Structural classifications are based on whether **fibrous tissue, cartilage, or a joint cavity separates the bones**
- 3 Types of Structural Joints:
  - **Fibrous Joints**
    - **Contain many collagen fibers for strength**
    - **Generally immovable**
  - **Cartilaginous Joints**
    - **Hyaline, fibrocartilage, and elastic cartilage provide structure with some degree of flexibility**
    - **Immovable or slightly movable**
  - **Synovial joints**
    - **Membranes contain areolar connective tissue**
    - **Articulating surfaces contain hyaline cartilage to reduce friction during movement**
    - **Freely movable**

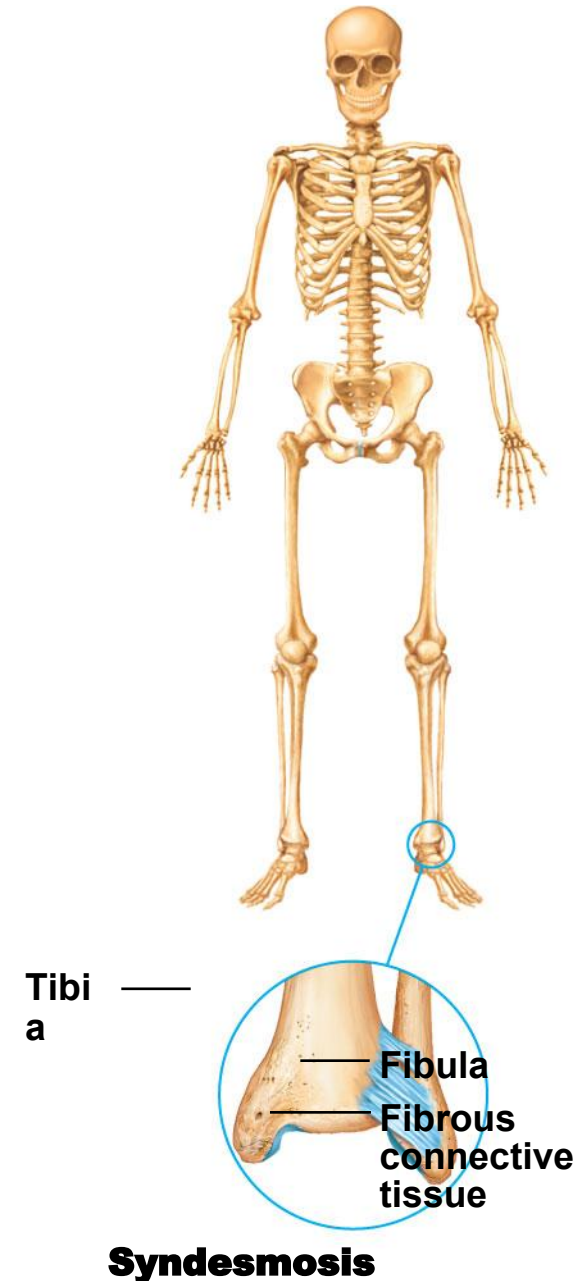
# Fibrous Joints

- Bones are united by **fibrous tissue**
- 3 Types:
  - **Sutures**
    - Irregular edges of the bones interlock and are bound tightly together by connective tissue fibers
    - Immobile
    - Found in the skull



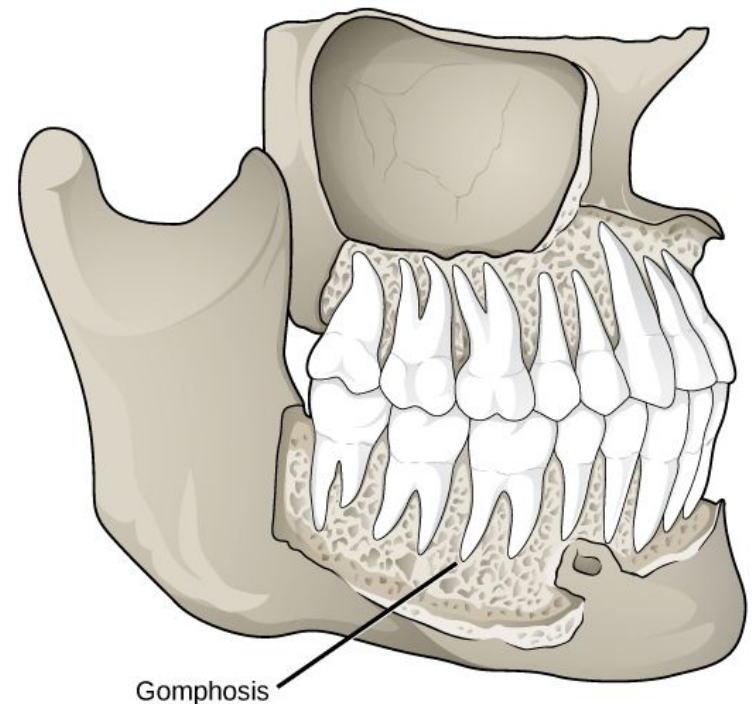
# Fibrous Joints

- Bones are united by **fibrous tissue**
- 3 Types:
  - **Syndesmoses**
    - **Connecting fibers are longer than those of sutures, thus more give**
    - **Allow more movement than sutures but still immobile**
    - **Found on the distal ends of tibia and fibula**

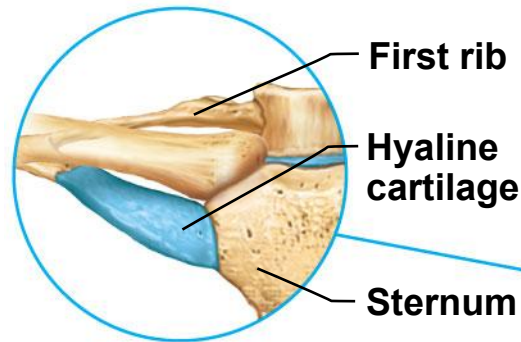


# Fibrous Joints

- Bones are united by **fibrous tissue**
- 3 Types:
  - **Gomphoses**
    - “Peg-in-socket”
    - Immobile
    - Found where the teeth meet the facial bones



# Cartilaginous Joints



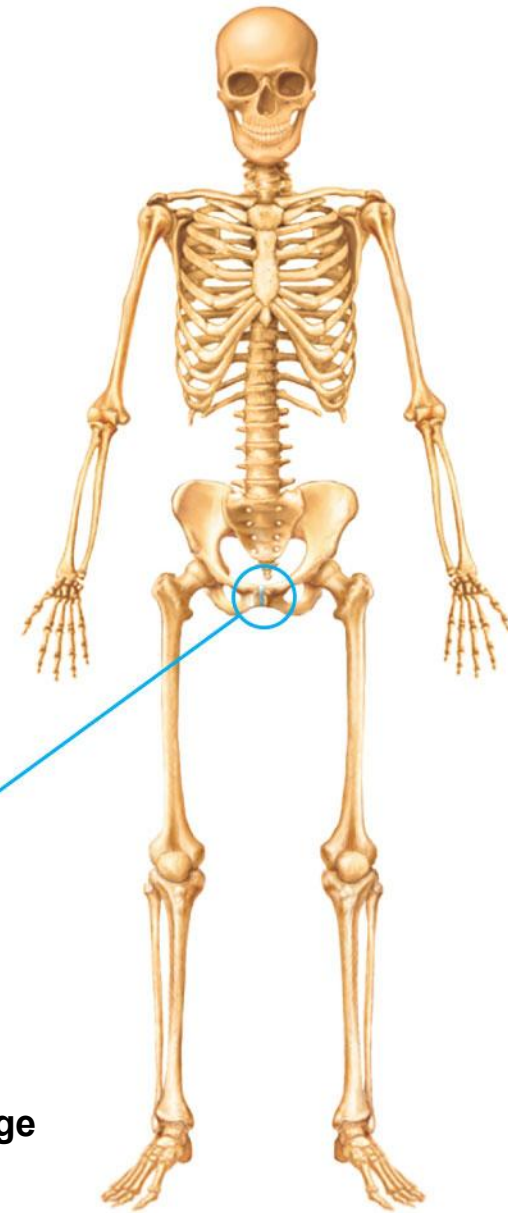
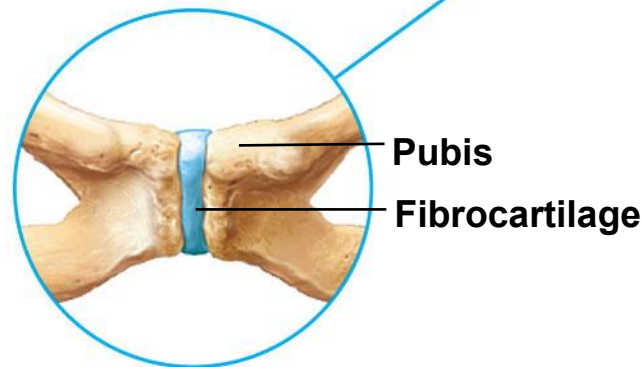
**(c) Synchondrosis**

- Bones are connected by **cartilage**
- 2 Types depending on cartilage type:
  - **Synchondrosis**
    - Bones are separated by hyaline cartilage
    - Immobile (synarthrotic)
    - Found in epiphyseal plates of growing long bones and between the ribs and sternum



# Cartilaginous Joints

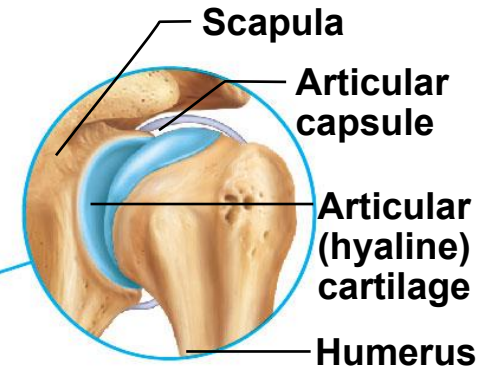
- Bones are connected by **cartilage**
- 2 Types depending on cartilage type:
  - **Symphysis**
    - Bones are separated by **fibrocartilage**
    - **Slightly movable**
    - Found in the **pubic symphysis, intervertebral joints**





# Synovial Joints

- Articulating bones are separated by a **joint cavity**
- **Synovial fluid** is found in the joint cavity
- Four distinguishing features of synovial joints:
  1. **Articular cartilage**
  2. **Articular capsule**
  3. **Joint cavity**
  4. **Reinforcing ligaments**



**(f) Multiaxial joint**  
(shoulder joint)

# Synovial Joints

- 6 Types of synovial joints based on **shape**:
  - **Plane joint**
  - **Hinge joint**
  - **Pivot joint**
  - **Condylar joint**
  - **Saddle joint**
  - **Ball-and-socket joint**



# EXIT SLIP: CLASSIFICATION OF JOINTS

DIRECTIONS: Complete the Classification of Joints Concept Map below using the following terms: amphiarthroses, ball-and-socket, cartilaginous, condylar, diarthroses, fibrous, functional, gomphoses, hinge, pivot, plane, saddle, structural, sutures, symphysis, synarthroses, syndesmoses, synchondrosis, synovial

