
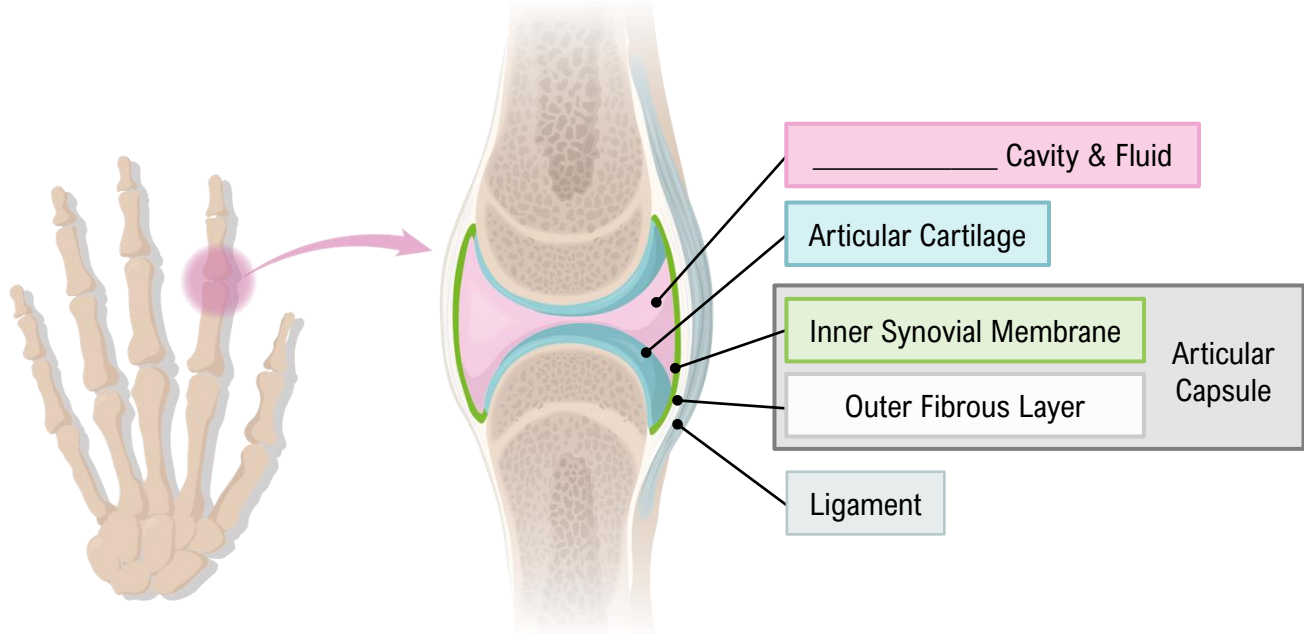


**TOPIC: STRUCTURAL CLASS: SYNOVIAL JOINTS**

- Most joints in body are classified as \_\_\_\_\_ joints.
- **Synovial Joints:** have \_\_\_\_\_/free movement (always ) with the following unique characteristics:
  - **Synovial Cavity:** a \_\_\_\_\_ between bones that stores *synovial fluid*.
    - **Synovial Fluid:** viscous liquid serving as a lubricant & \_\_\_\_\_ absorber.
  - **Articular \_\_\_\_\_:** hyaline cartilage covering *ends* of synovial joint bones (reduces friction).
  - **Articular Capsule:** surrounds entire joint as \_\_\_\_\_-layers:
    - **Inner Layer (Synovial Membrane):** lines synovial cavity & \_\_\_\_\_ synovial fluid.
    - **Outer Fibrous Layer:** dense \_\_\_\_\_ connective tissue.



**EXAMPLE:** Which of the following is not a unique characteristic of synovial joints?

- a) Dynamic movement.
- b) Ligaments.
- c) Articular capsule.
- d) Synovial fluid.

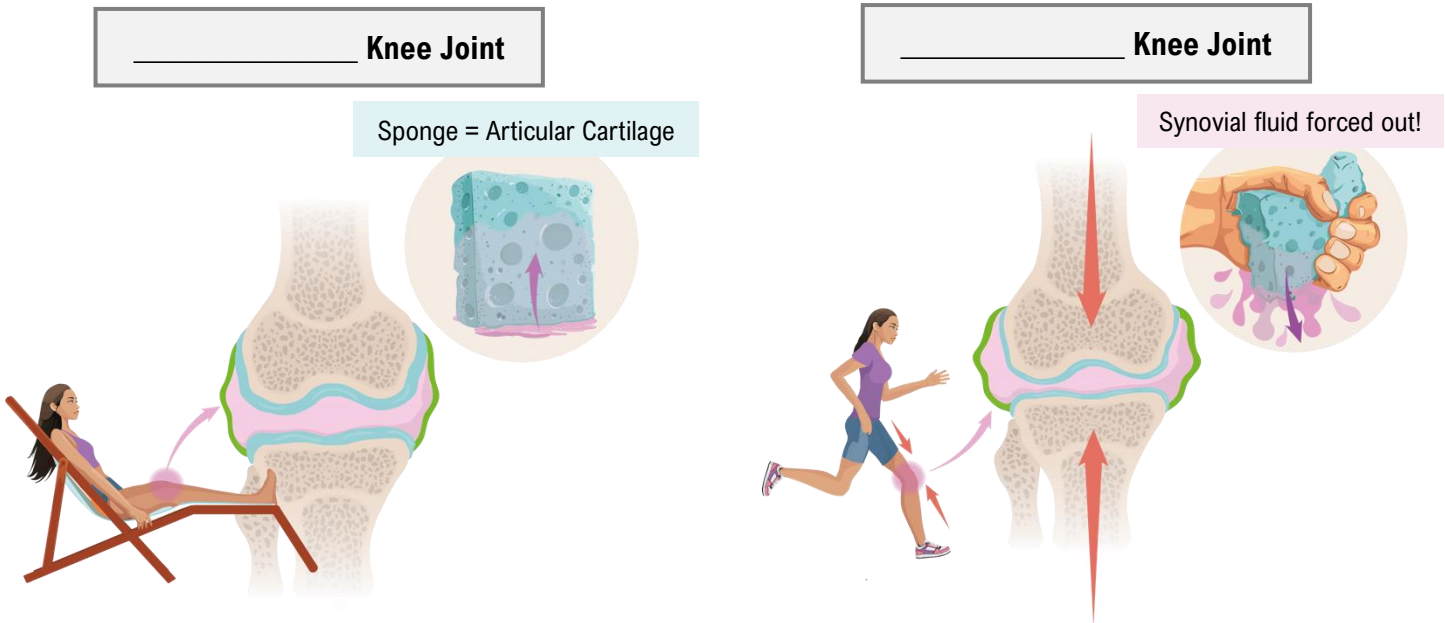
**PRACTICE:** Which of the following is a unique feature of synovial joints?

- a) Presence of ligaments.
- b) Joint movement.
- c) Presence of a joint cavity.
- d) Presence of hyaline cartilage.

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**Weeping Lubrication of Synovial Joints**

- **Weeping Lubrication:** process where *synovial fluid* in articular cartilages is forced \_\_\_\_\_ upon *compression*.
  - When pressure on joint is relieved, synovial fluid soaks back in (like water into a \_\_\_\_\_).



**EXAMPLE:** Use the words in the word-bank to fill in the blanks and complete the sentences:

**Word-Bank:** Fluid Cartilage Friction Compresses

As a synovial joint \_\_\_\_\_, the pressure from the bones coming together squeezes the articular \_\_\_\_\_. As this happens, synovial \_\_\_\_\_ is squeezed out into the synovial cavity, lubricating the joint and reducing \_\_\_\_\_.

**PRACTICE:** Which of the following statements accurately describes weeping lubrication in synovial joints?

- It involves the secretion of tears from the lacrimal glands into the synovial cavity.
- It relies on the release of mucus from the goblet cells within the synovial membrane.
- Synovial fluid is squeezed out of articular cartilage during compression & reabsorbed during decompression.
- It occurs when blood vessels within the joint capsule deliver nutrients to the articular cartilage.

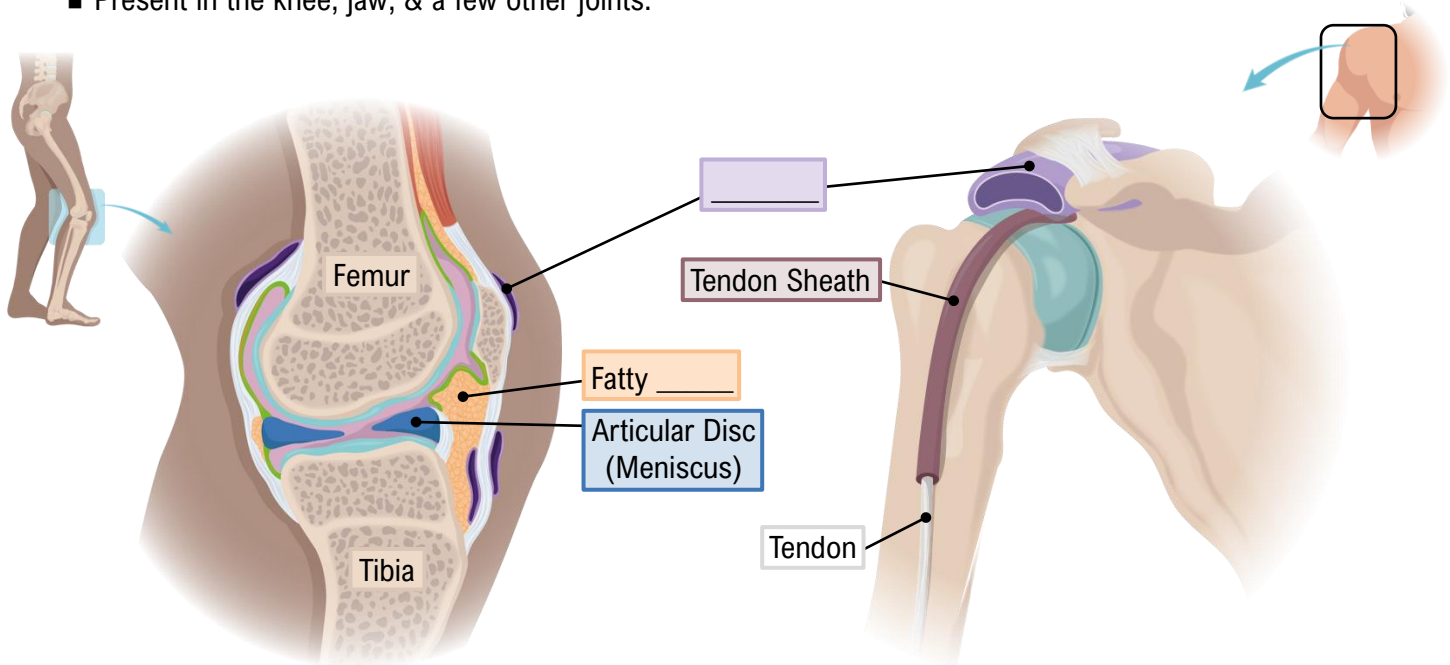
**PRACTICE:** What role does articular cartilage play in synovial joints?

- It reduces stress on the joint.
- It stores synovial fluid, allowing for weeping lubrication.
- It lines bone ends, preventing them from coming into direct contact with each other.
- All three answers above are correct.

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**Additional Features in *Some* Synovial Joints**

- **Bursae:** synovial fluid-filled \_\_\_\_\_ that *reduce friction* between ligaments/tendons & other tissues.
  - **Tendon Sheath:** *elongated bursa* that wraps around & protects a \_\_\_\_\_, reducing friction.
- **Fatty Pads:** present in knee & hip joints; provide \_\_\_\_\_ between fibrous layer & synovial membrane.
- **Articular Discs (Menisci):** discs of fibrocartilage or fat that divide the synovial cavity in two (shock absorbers).
  - Present in the knee, jaw, & a few other joints.



**EXAMPLE:** Which of these statements about bursae and tendon sheaths is false?

- a) The primary function of both bursae and tendon sheaths is to reduce friction at synovial joints.
- b) They are found in all synovial joints.
- c) They can be found associated with some (but not all) synovial joints in the body.
- d) They are both fibrous sacs filled with synovial fluid.

**PRACTICE:** Imagine you're a doctor and a patient comes to you because of pain in their knee joint. You find that there is not enough synovial fluid present in their knee's synovial cavity, leading to friction when the knee moves. Which of the following structures in the knee joint is not functioning correctly?

- a) Bursae.
- b) Articular cartilage.
- c) Articular capsule.
- d) Synovial membrane.