What is Joint Anatomy and Classification?

Worksheet

Joints are classified structurally as fibrous, cartilaginous, or synovial (by connective tissue type), and functionally as synarthroses (immobile), amphiarthroses (slightly mobile), or diarthroses (freely mobile).

Questions

1. What structural class is a skull suture?

A) Synovial
B) Cartilaginous
C) Fibrous
D) Symphysis

2. Which functional class describes a freely mobile joint like the shoulder?

A) Synarthrosis
B) Amphiarthrosis
C) Diarthrosis
D) Symphysis

3. The pubic symphysis is an example of which structural joint type?

A) Fibrous
B) Cartilaginous
C) Synovial
D) Diarthrosis

4. What distinguishes synovial joints from fibrous and cartilaginous joints?

A) They have no connective tissue
B) They contain a fluid-filled joint cavity
C) They are always immobile
D) They only occur in the skull

5. Classify the knee joint both structurally and functionally.

6. Classify a skull suture both structurally and functionally.

7. Classify the pubic symphysis both structurally and functionally.

8. Define: What are the three structural joint classes?

9. Define: What are the three functional joint classes?

10. Define: Are all synovial joints diarthroses?

Answer Key

1. C) Fibrous - Skull sutures are fibrous joints, joined by dense connective tissue.

2. C) Diarthrosis - Diarthroses are freely mobile joints; all synovial joints fall in this category.

3. B) Cartilaginous - It's joined by fibrocartilage, making it a cartilaginous joint.

4. B) They contain a fluid-filled joint cavity - Synovial joints have a synovial cavity filled with lubricating fluid, enabling free movement.

5. Structurally: the knee has a joint cavity filled with synovial fluid, so it is a synovial joint Functionally: it allows extensive movement (flexion, extension, slight rotation), so it is a diarthrosis Conclusion: the knee is a synovial diarthrosis, specifically a hinge-type synovial joint

6. Structurally: adjacent skull bones are joined by dense fibrous connective tissue, making it a fibrous joint Functionally: it permits essentially no movement in the adult skull, making it a synarthrosis Conclusion: a skull suture is a fibrous synarthrosis

7. Structurally: the two pubic bones are joined by fibrocartilage, making it a cartilaginous joint Functionally: it allows slight movement, especially during childbirth, making it an amphiarthrosis Conclusion: the pubic symphysis is a cartilaginous amphiarthrosis

8. Fibrous, cartilaginous, and synovial - based on the connecting tissue.

9. Synarthrosis (immobile), amphiarthrosis (slightly mobile), diarthrosis (freely mobile).

10. Yes - every synovial joint is functionally a diarthrosis (freely mobile).