

LECTURES 7-8: INTRODUCTION TO SKELETAL JOINTS AND ARTICULATIONS

(2 lectures)

A. Be able to compare different joint types based on their relative degree of movement, explaining what structures contribute to this movement

STRUCTURE

- 1) Define *joint (articulation)*
- 2) Explain and diagram the following basic structural features of synovial joints: articular cartilage, joint cavity, articular capsule, synovial membrane, synovial fluid, reinforcing ligaments, nerves, vessels, and articular disc or meniscus
- 3) Explain the function of synovial fluid
- 4) Compare bursae and tendon sheaths; explain the structure and function of these associated synovial joint structures

CLASSIFICATIONS OF JOINTS & SKELETON

- 5) Distinguish between axial skeleton and appendicular skeleton
- 6) Differentiate between the three general categories of joints; fibrous, synovial and cartilagenous
- 7) Differentiate between the movement types of joints: synarthrotic, amphiarthrotic, and diarthrotic.

STRUCTURE/FUNCTION RELATIONSHIPS

- 8) Describe the general structure of fibrous joints; identify the three main types of fibrous joints (sutures, syndesmoses, and gomphoses) and give examples of each, indicating the degree of movement for each type
- 9) Describe the general structure and function of cartilaginous joints; identify the two main subtypes of cartilaginous joints (synchondroses and symphyses) and give examples of each, indicating the degree of movement for each
- 10) Explain how synovial joints are classified by shape. Name the six classes (plane, hinge, pivot, condyloid, saddle, and ball-and-socket joints), describe permitted movements of each class, and give specific examples of these joints. Explain how the shape of the joint influences the movement permitted by the joint.

FUNCTION: MOVEMENTS

- 11) Demonstrate all movements allowed by synovial joints including one type of gliding, 5 types of angular movements (flexion, extension, abduction, adduction, circumduction), 2 types of rotation (medial, lateral rotation), and 11 special movements (pronation, supination, dorsiflexion, plantar flexion, inversion, eversion, protraction, retraction, elevation, depression, opposition) that do not fit into the previous categories.
- 12) Differentiate between the movements of circumduction and rotation

APPLICATION OF STRUCTURE/FUNCTION RELATIONSHIPS

- 13) Identify the bones associated with the shoulder, hip, elbow, and knee joints
- 14) List the joint types, joint movements and supporting structures of the shoulder, hip, elbow, and knee
- 15) Compare and contrast the movement type, stability, supporting structures, and shapes of articular surfaces between joints in the following pairs: shoulder/hip and elbow/knee
- 16) Discuss disorders of joints and compare physical injuries, such as sprains, with inflammatory and degenerative conditions, such as arthritis
- 17) Explain the etiology and symptoms of each type of arthritis

OPTIONAL:

- 18) Based on the structure of the synovial joints, predict why they are capable of certain types of movement (e.g., hinge joint can only do extension/flexion)
- 19) Identify several important synovial joints. Describe the type of joint based on shape, explain movements allowed, describe location, structure, and function, and any other significant features.