Laboratory Exercise 4: Articulations and Body Movements

Introduction

We will not cover this topic in lecture, so in this lab you’ll identify features of a number of select articulations, and also study the basic aspects of joint anatomy, classification, and function.

To prepare yourself use the following tools:

- Required preparation
  - Chapter 8 in Human Anatomy, Martini
  - Below is an outline of material from Chapter 8 that you are responsible for

- Optional preparation
  - Martini companion website, Advanced Review – labeling quiz is especially helpful for self-testing

Outline – specific objectives

1. Structural classification of joints – features and examples
   A. fibrous joints
   B. cartilaginous joints
   C. synovial joints

2. Functional classification of joints – basis for classification, correlate with above structural classification
   A. synarthroses
   B. amphiarthroses
   C. diarthroses

3. Fibrous joints – structural features, examples
   A. sutures
   B. syndesmoses

4. Cartilaginous joints – structural features, examples
   A. symphyses
   B. synchondroses
5. Synovial joints (see Chapter 8, text)
   A. General structure
      a. Articular cartilages
      b. Joint cavity
      c. Articular capsule
      d. Synovial membrane
      e. Synovial fluid
      f. Strengthening ligaments
         i. Intrinsic or capsular ligaments
         ii. Extrinsic ligaments
            - Extracapsular ligaments
            - Intracapsular ligaments
   
   B. Movements allowed by synovial joints
      a. Gliding movements
      b. Angular movements
         i. flexion
         ii. extension
         iii. dorsiflexion and plantar flexion of foot
         iv. abduction
         v. adduction
         vi. circumduction
      c. Rotation
      d. Supination and pronation
      e. Inversion and eversion
      f. Protraction and retraction
      g. Elevation and depression
      h. Opposition
   
   C. Types of synovial joints – general description, examples
      a. Plane joints
      b. Hinge joints
      c. Pivot joints
      d. Condyloid joints
      e. Saddle joints
      f. Ball-in-socket joints