

## Unit 4:

# Bones and joints of the upper limb: forearm and hand

### GENERAL OBJECTIVES:

- recognize, name and correctly orient forearm and hand bones
- understand movements in elbow, wrist and hand joints

### SPECIFIC OBJECTIVES:

#### **Bones of the forearm and hand**

Identify the bony features on each part of the following bones:

RADIUS - Upper End

- Shaft

- Lower End

ULNA - Upper End

- Shaft

- Lower End

Deduce (from the shape of the articular surfaces) the movements at (i) the elbow joint and (ii) the radioulnar joints.

Indicate the bony attachments of the major ligaments which help to maintain the stability of these joints (while allowing their mobility).

Identify the following bones

CARPALS - Proximal Row

- Distal Row

METACARPALS

PHALANGES

Identify the attachments of the Flexor Retinaculum and define the "Carpal Tunnel".

Deduce (from the shape of the articular surfaces) the movements at

- the wrist joint
- the carpometacarpal joint of the thumb
- metacarpophalangeal joints
- interphalangeal joints

Indicate the bony attachments of the major ligaments which help to maintain the stability of these joints (while allowing their mobility).

#### **Joints of the forearm and hand**

Elbow Joint

*Articular Surfaces (Humeroulnar & Humeroradial)*

*Fibrous Capsule & Joint Cavity*

*Synovial Membrane*

*Collateral Ligaments ( Medial & Lateral)*

*Special Structures:*

*Olecranon Bursa*

*Other Bursae, Pads of Fat*

*Movements at the Elbow Joint:*

*Flexion/Extension*

*Stability*

Carrying Angle

Radioulnar Joints

**Proximal Radioulnar Joint**

*Annular Ligament*

**Distal Radioulnar Joint**

*Articular Disc*

Movements at the Radioulnar Joints:

*Pronation/Supination*

Wrist Joint

*Articular Surfaces*

*Capsule & Ligaments*

Synovial membrane

Movements at the Wrist Joint:

*Flexion/Extension*

*Adduction/Abduction*

*Stability*

Joints of Hand

Intercarpal Joints (+ “Midcarpal” Joint)

Carpometacarpal & Intermetacarpal Joints

Carpometacarpal Joint of the Thumb

Metacarpophalangeal (M.P.) Joints

Palmar Ligaments (Plates)

Interphalangeal (I.P.) Joints

Collateral Ligaments, Palmar Plates

Movements of the Thumb:

*Flexion/Extension*

*Abduction/Adduction/Opposition*

Movements of the Fingers:

*Flexion/Extension*

*Abduction/Adduction*