MEDICAL EDUCATION RESOURCE

Bones of the Upper Limb – Introduction

General Features

- The **skeleton of the upper limb** consists of **32 bones**.
- Arranged into 4 main groups:
    1. **Shoulder Girdle** ? clavicle, scapula.
    2. **Arm (Brachium)** ? humerus.
    3. **Forearm (Antebrachium)** ? radius, ulna.
    4. **Hand (Manus)** ? 27 bones (carpals, metacarpals, phalanges).

Classification of Bones of Upper Limb

1. **Clavicle**
    - Long bone but placed horizontally.
    - Only long bone ossifying in membrane.
    - Connects axial skeleton (sternum) to appendicular skeleton (scapula).
2. **Scapula**
    - Flat bone, triangular in shape.
    - Forms the posterior part of the shoulder girdle.

3. **Humerus**
    - Long bone of the arm.
    - Articulates proximally with scapula, distally with radius & ulna.
4. **Radius and Ulna**
    - Long bones of the forearm.
    - Radius: lateral, participates in wrist joint.
    - Ulna: medial, mainly stabilizing bone of forearm.
5. **Carpal Bones**
    - 8 short bones arranged in 2 rows (proximal & distal).
    - Provide flexibility and mobility to wrist.
6. **Metacarpals**
    - 5 miniature long bones, numbered I to V (thumb to little finger).
7. **Phalanges**
    - 14 in number (2 in thumb, 3 in each of the other fingers).

Clinical Importance

- **Clavicle fracture** ? most common bone fracture in upper limb.
- **Scaphoid fracture** ? risk of avascular necrosis.
- **Surgical neck of humerus fracture** ? axillary nerve injury.

- **Supracondylar fracture of humerus (children)** ? brachial artery injury.
- **Colles' fracture (radius)** ? common wrist fracture in elderly.

Key Exam Points

- Number of bones in upper limb: **32**.
- Type of bones: long bones (clavicle, humerus, radius, ulna, metacarpals, phalanges), flat bone (scapula), short bones (carpals).
- Hand bones = **27 (8 carpals + 5 metacarpals + 14 phalanges)**.
- Uniqueness: **Clavicle ossifies in membrane**; others ossify in cartilage