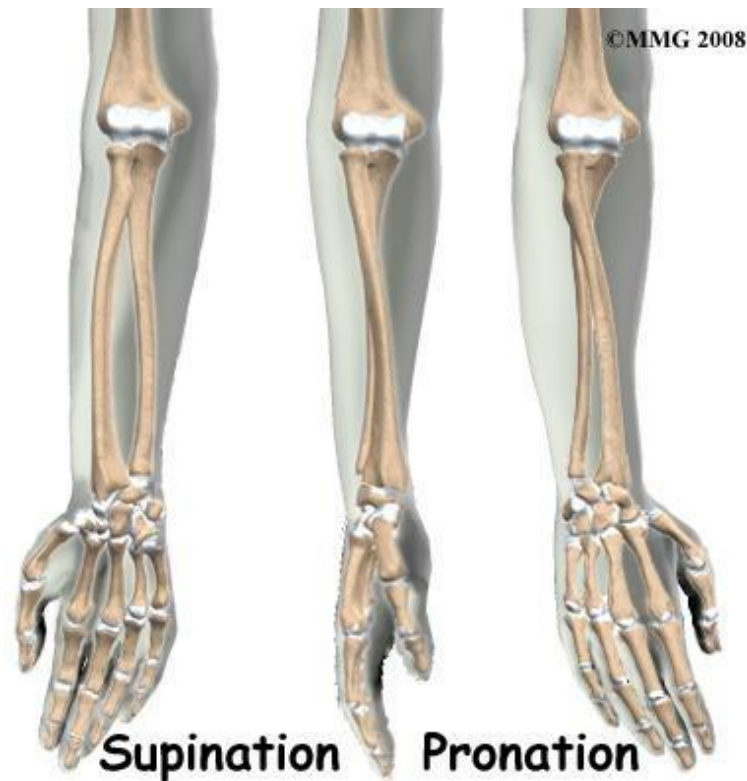


RU RMT 02
Skeletal Lecture 14
Forearm, Wrist and Hand

The FOREARM

- Made up of two bones that are connected with each other via 3 different joints
- In anatomical position, the bones remain parallel to each other (but that can change)



Ulna – Medial Forearm Bone

- Stabilizing and longer of the two forearm bones
- Proximal end articulates with the distal humerus and has three prominent projections
 - Olecranon / Coronoid Process / Ulnar Tuberosity
- **Trochlear Notch:** Formed by the walls of the olecranon and coronoid process
- **Radial Notch:** Lateral side of the coronoid process, receives the radial head (proximal radioulnar joint)
- The shaft of the ulna is thick and cylindrical
- The medial border of the ulna is sharp (the **ulnar 'ridge'**)
- The **Head Of The Ulna** and the **Ulnar Styloid Process** are at the distal end of the bone (note: will be one landmark away for each other in palp).

Ulna

Anterior View



Lateral View

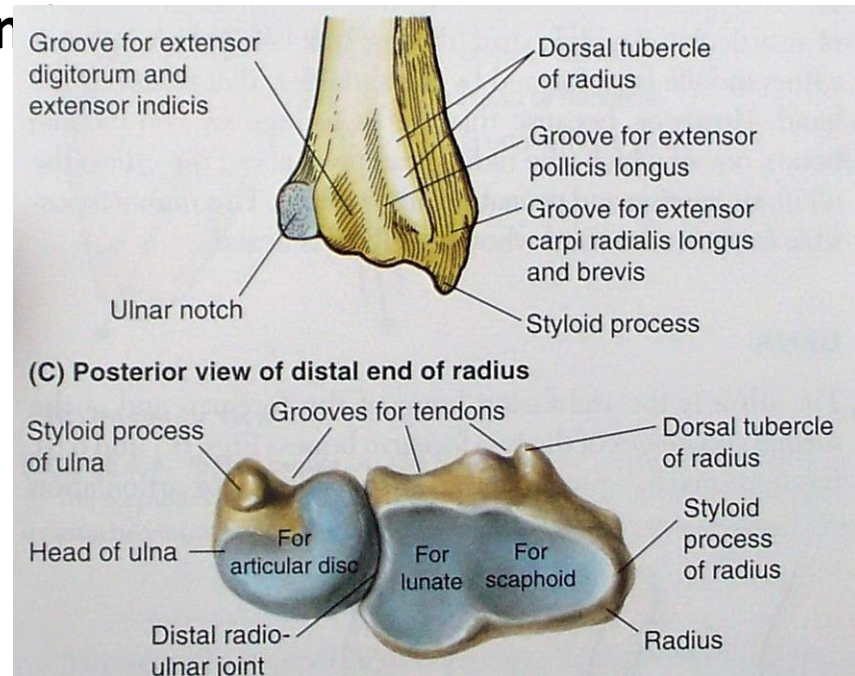


Radius – Lateral Forearm Bone

- Mobile and shorter of the two forearm bones.
- Proximal end has a short rounded **head, a neck and tuberosity**
- **Radial Head:** Is concave to fit into the capitulum, for movements associated with the elbow.
 - The head also articulates with the radial notch of the ulna and creates the proximal radio-ulnar joint, a **pivot synovial joint**.
- At the distal end of the radius, is the **base** with the **radial styloid process** at the most distal tip of the base, adjacent to the distal radio-ulnar joint.

Radius - Lateral Forearm Bone

- **Radial Styloid Process:** Is larger than the ulnar styloid process
- **Dorsal Tubercle:** Is found on the posterior surface of the distal end of the radius and is a raised ridge of bone
- Between the bones of the forearm, there is a tight connective tissue band that anchors the bones medially. This is called the **interosseous mer**



Carpal Bones of the Hand

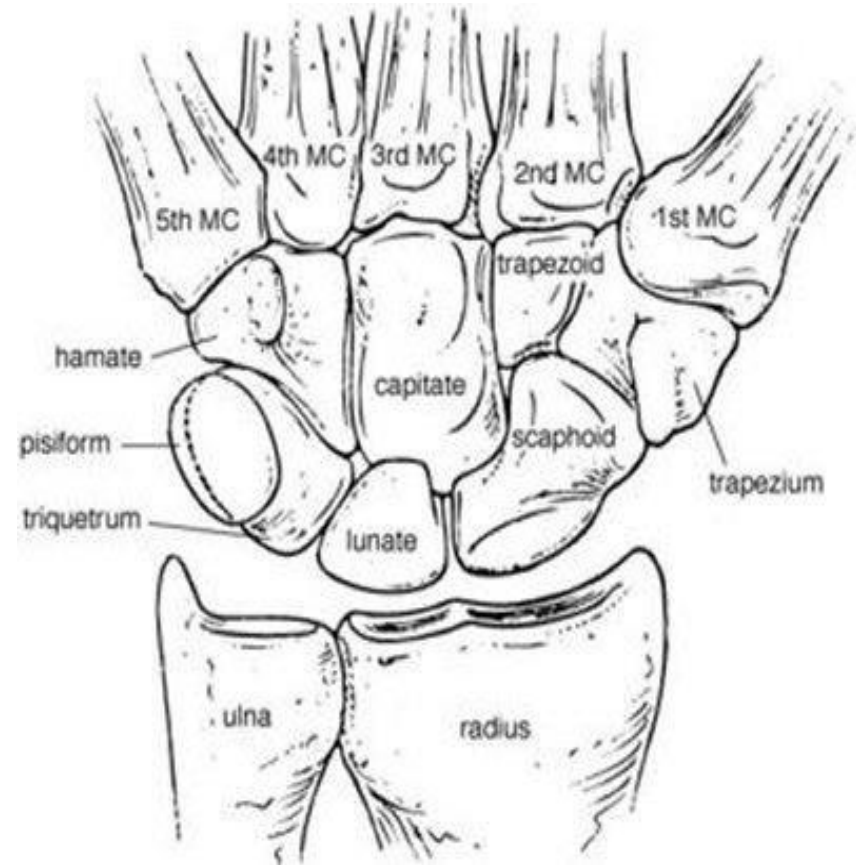
- The wrist or carpus is composed of eight bones arranged in proximal and distal rows of four.
- This allows for flexibility of the wrist.
- The two rows of carpals glide on each other and the individual bones also glide on adjacent bones.

•Proximal Row

- Scaphoid, Lunate, Triquetrum, Pisiform

•Distal Row

- Trapezium, Trapezoid, Capitate, Hamate



Carpal Bones

Proximal Row

Scaphoid

- Boat shaped bone that articulates proximally with the radius Largest bone of the proximal row

Lunate

- Moon shaped bone between the scaphoid and triquetral bones Articulates proximally with the radius.

Triquetrum

- Pyramidal bone on the medial side of the carpus
Articulates proximally with the articular disc of the distal radio-ulnar joint.

Pisiform

- Small, pea-shaped bone that lies on the palmar surface of the triquetrum

Carpal Bones

Distal Row

- **Trapezium**

- Four sided bone on the lateral side of the carpus
- Articulates with the 1st metacarpal, scaphoid and trapezoid bones

- **Trapezoid**

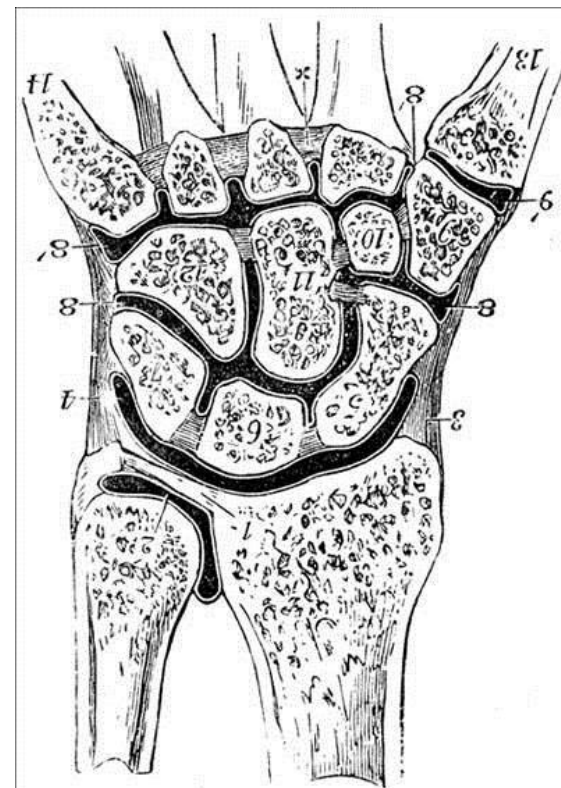
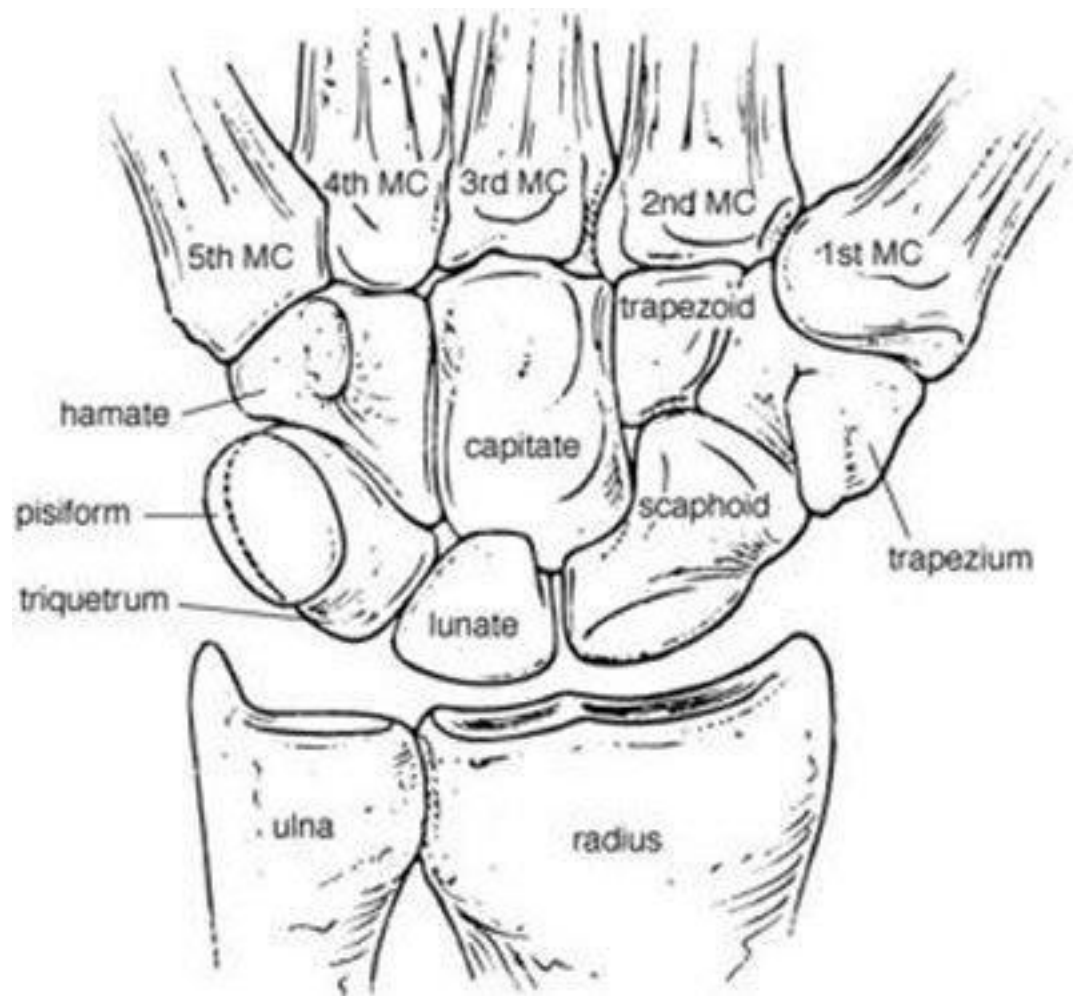
- Wedge –shaped bone that resembles the trapezium
- Articulates with the 2nd metacarpal, trapezium, capitate and scaphoid bones

- **Capitate**

- Head-shaped bone with a rounded extremity and the largest bone in the carpus
Articulates with primarily with the 3rd metacarpal and trapezoid, scaphoid, lunate and hamate

- **Hamate**

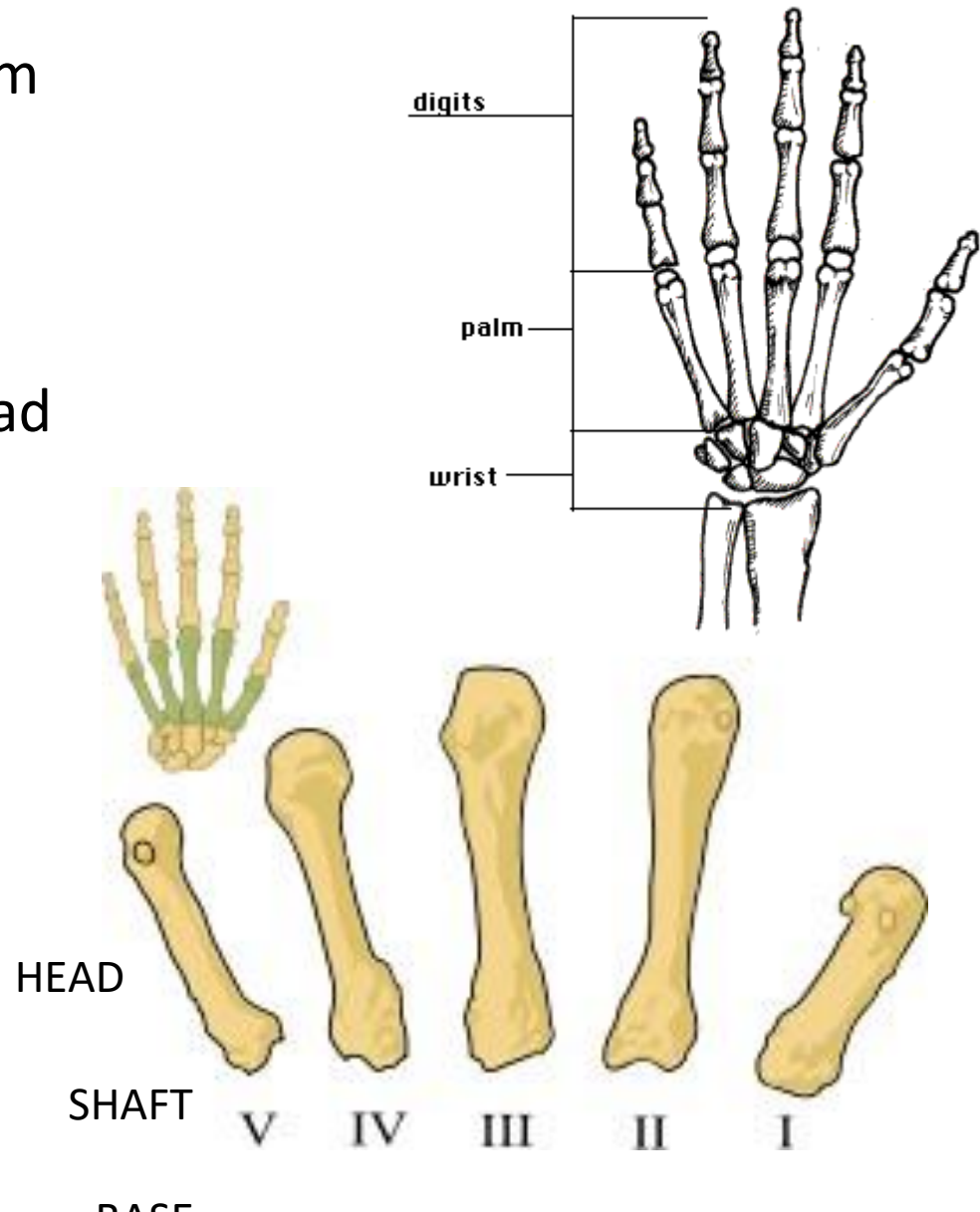
- Wedge-shaped bone on the medial side of the hand, has an anterior hook.
Articulates with the 4th and 5th metacarpals, capitate and triquetral bones





Metacarpal Bones

- Forms the skeleton of the palm of the hand
- Composed of five metacarpal bones
- Each has a base, shaft and head
- The bases are more proximal (articulate with carpals)
- The heads are more distal (articulate with phalanges)



Phalanges

- Each digit has three phalanges except the first
- Each phalanx has a base proximally, shaft and head distally.
- Proximal phalanges are the largest and distal ones are the smallest.
- The distal phalanx tapers distally and has the nail bed over it.

