skull shoulder & arm spine elbow & forearm wrist & hand pelvis & hip knee & leg ankle & foot

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Pectoral girdle •pectoral girdle = 2 clavicles + 2 scapulae

•clavicle: collar bone;

keeps shoulders apart; vestigial or absent in quadrupeds; synovial jts with acromion process of scapula, and manubrium (sternum)

scapula: shoulder blade;

- flat bone; coracoid process/spine: sites for muscle attachments to arm/thorax;
- extension of quadr limb (scapula glide);
- glenoid fossa forms synovial jt (shoulder) with humerus





<u>Joints</u>

•Gleno humeral-humerus articulating with glenoid fossa of scapula

•Sternoclavicular(SC)-proximal clavicle articulating with manubrium and cartilage of rib 1

•Acromio-clavicular(AC)-acromianprocess of scapula articulating with distal clavicle

•Coraco-clavicular-coracoid process of scapula articulating with inferior clavicle

•Scapulo-thoracic-anterior scapula articulating with thoracic wall











These muscles attach to the surface of the scapula and are responsible for the internal and external rotation of the shoulder joint, along with humeral abduction.



Scapula, lateral view, right side

Scapula, medial view, right side





clavicle-acromial end-is flat and has a small facet for articulation with the acromion;
•sternal end-has a large facet for articulation with the manubrium, and first costal cartilage;
•conoid tubercle-conoid ligament of the coraco-clavicular ligament attaches here;

Clavicle, anterior view, right side





The clavicle also keeps the arms away from the body.

Along with the scapula, the two bones extend the arm laterally from the body, allowing more Range of Motion.



Latin: clavicula ("little key") because the bone rotates along its axis like a key when the shoulder is abducted.



Right Clavicle - Features







The clavicle is the most commonly fractured bone.

It can easily be fractured due to impacts to the shoulder from the force of falling on outstretched arms or by a direct hit



Humerus, anterior view, right side











Humerus, posterior view, right side



Humerus, medial view, right side





<u>1.Head</u> <u>2.2. Anatomical Neck</u> <u>3.3. Lesser Tubercle</u> <u>4.4.Intertubercular Groove</u> <u>5.5. Greater Tubercle</u> <u>6.6. Surgical Neck</u> <u>7.7.DeltoidTuberosity</u>

<u>1.Radial Fossa</u>
<u>2.2. Lateral Epicondyle</u>
<u>3.3.Capitulum</u>
<u>4.4.Trochlea</u>
<u>5.5. MedialEpicondyle</u>
<u>6.6.Coronoid Fossa</u>
<u>7.7.Olecranon Fossa</u>





Joints

•*Humeroulnar Joint* - hinge joint (between trochlea and trochlear notch of ulna = "*elbow joint*")

•*Humeroradial Joint* - gliding joint (between capitulum and proximal head of radius)

•**Proximal Radioulnar Joint** pivot joint (annular ligament binds radial head of radius to radial notch of ulna)









Ulna - Proximal & Distal End (Anterior Aspect)



- 1. <u>Olecranon Process</u>
- 2. <u>2. Semilunar Notch</u>
- 3. <u>3. Coronoid Process</u>
- 4. <u>4. Tuberosity</u>
- 5. 5. Radial Notch
- 6. <u>6. Ulna (Shaft)</u>
- 7. <u>7. Head of Ulna</u>
- 8. <u>8. Styloid Process</u>



RADIUS

- 1. <u>Head of Radius</u>
- 2. <u>2. Neck of Radius</u>
- 3. <u>3. Radial Tuberosity</u>
- 4. <u>4. Radius (Shaft)</u>
- 5. <u>5. Styloid Process</u>
- 6. <u>6. Ulnar Notch</u>

Ulna, anterior view, right side



Ulna, lateral view, right side



Ulna, posterior view, right side



Ulna, medial view, right side







Radius, posterior view, right side



Radius, medial view, right side









Want an easy way to remember the carpal bones?!? <u>Remember this...</u> Naughty (Navicular) Lovers (Lunate) Try (Triquetral) Positions (Pisiform) That (Trapezium) They (Trapezoid) Can't (Capitate) Handle (Hamate)

<u>A). carpals</u> proximal (articulate radius and ulna) a). scaphoid b). luna c). triquetral d). pisiform Distal distal (articulate with metacarpals) 2) Middle <u>trapezium</u> a) Phalanges b). trapezoid (fingers) c). capitate **Proximal** <u>d). hamate</u> 3 2 **B).** metacarpals Metacarpais numbered 1 to 5 starting with the thumb side (palm) Hamate <u>phalanges</u> **C**). numbered 1 to 5 starting with the thumb side Pisiform Carpais -• proximal phalanx (wrist) Triquetral • medial phalanx Lunate •distal phalanx Uina (a)

Trapezoid

Trapezium

Scaphoid

Capitate

Radius



Bones of the hand, anterior view, right side



Bones of the hand, posterior view, right side





Bones of the Right Hand (Dorsal Surface)

- 1. Styloid Process of Radius
- 2. <u>2. Navicular (Scaphoid)</u>
- 3. <u>3. Lunate</u>
- 4. <u>4. Triquetral</u>
- 5. <u>5. Pisiform</u>
- 6. <u>6. Trapezium</u>
- 7. <u>7. Trapezoid</u>
- 8. <u>8. Capitate</u>
- 9. <u>9. Hamate</u>
- 10. <u>10. Metacarpal</u>
- 11. <u>11. Proximal Phalange</u>
- 12. <u>12. Middle Phalange</u>
- 13. <u>13. Distal Phalange</u>
- 14. 14. Styloid Process of Ulna



Bones of the Right Hand (Palmar Surface)

- 1. Navicular (Scaphoid)
- 2. <u>2. Lunate</u>
- 3. <u>3. Triquetral</u>
- 4. <u>4. Pisiform</u>
- 5. <u>5. Trapezium</u>
- 6. <u>6. Trapezoid</u>
- 7. <u>7. Capitate</u>
- 8. <u>8. Hamate</u>
- 9. <u>9. Metacarpal</u>
- 10. 10. Proximal Phalange
- 11. <u>11. Middle Phalange</u>
- 12. <u>12. Distal Phalange</u>