



RADIOLOGY

TEAM 435



LECTURE 2

UPPER LIMB

Objectives:

- To know the correlation between anatomy of the upper limb and clinical radiology.
- To be familiar with normal findings in x-ray.

Extra information

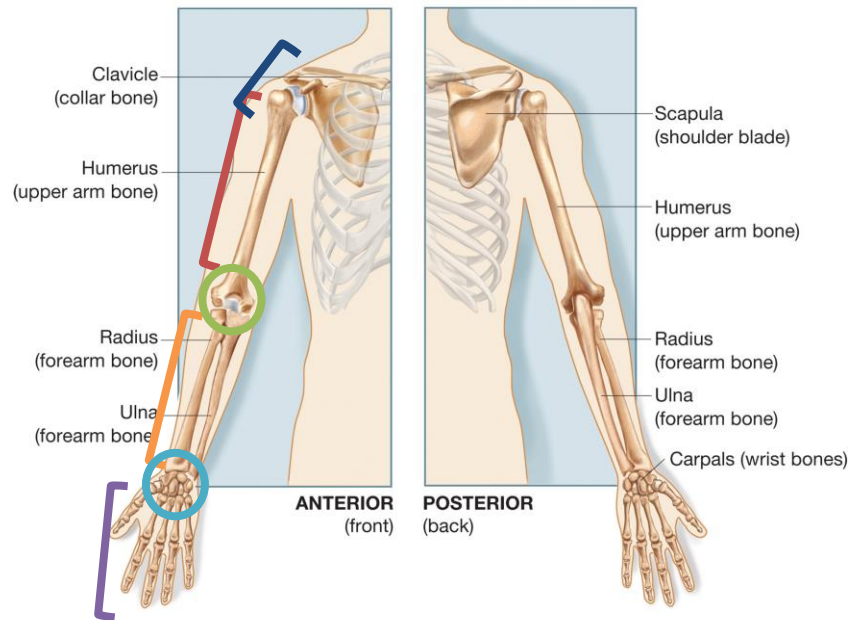
Imaging Techniques

Modality	Bone	Soft tissue
X-ray	++++	-
CT	+++++	++
MRI	++	+++++

- *CT result is very rapid to get, so its useful in accident and other sever damage.*
- *X-ray doesn't detect soft tissue*

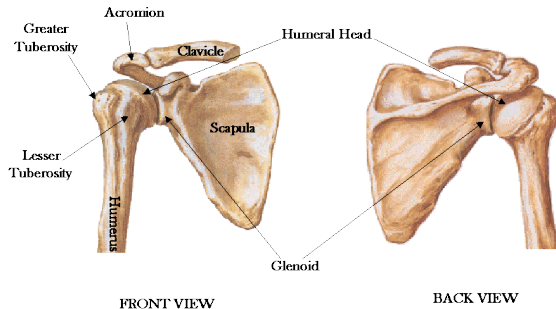
Upper limb parts

- **Shoulder (clavicle + scapula)**
- **Arm (humerus)**
- **Elbow**
- **Forearm (radius + ulna)**
- **Wrist (carpals)**
- **Hand (metacarpals + phalanges)**

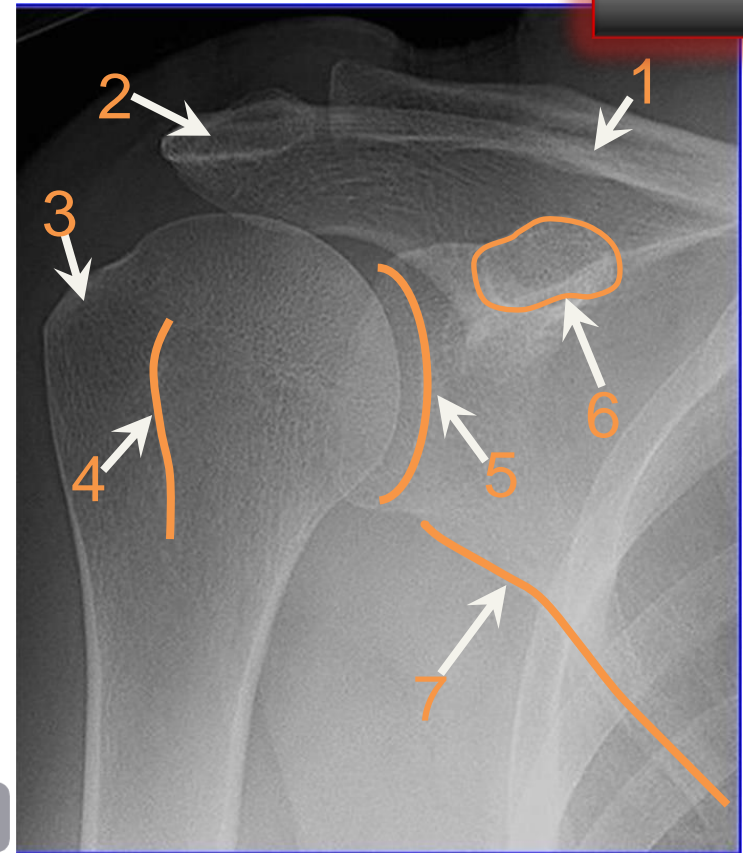


Shoulder region

- 1- Clavicle
- 2- Acromion
- 3- Greater Tuberosity
- 4- Lesser Tuberosity
- 5- Glenoid Cavity
- 6- Coracoid Process
- 7- Scapula



X-ray



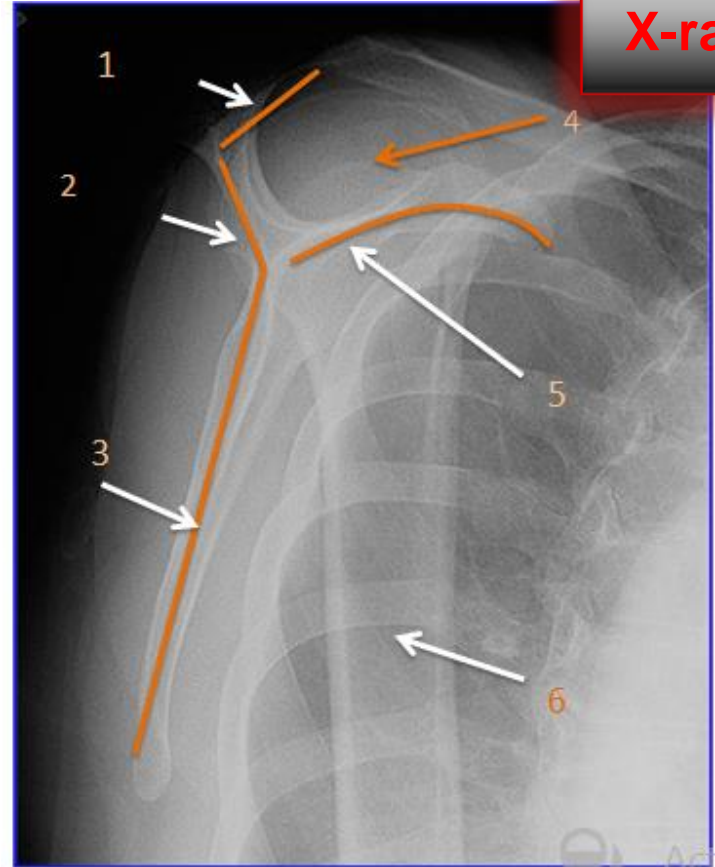
Shoulder region

- 1- Acromion
- 2- Spine
- 3- Scapula
- 4- Humeral head
- 5- Coracoid Process
- 6- Humerus shaft

Y view

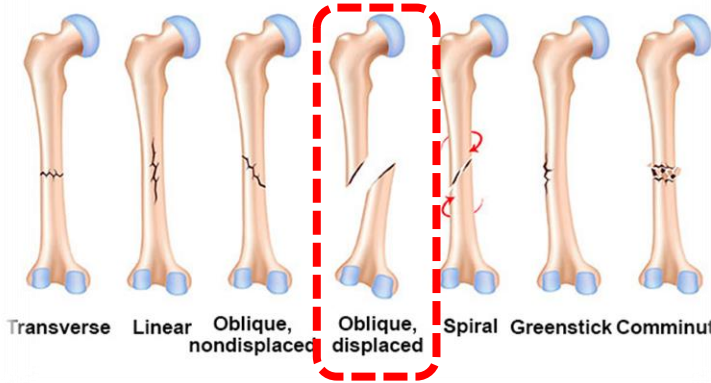


X-ray



Humerus Fracture

Types of Bone Fractures



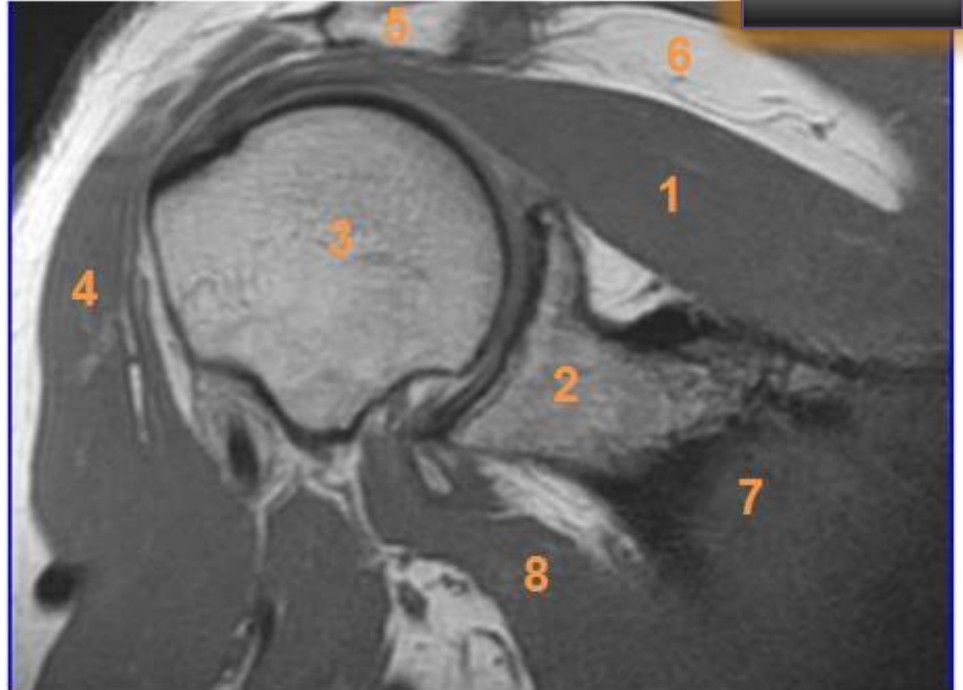
- **Humerus - Shaft fracture**
- **Oblique fracture of the humerus shaft.**
- **As with many long-bone fractures the distal component is markedly displaced.**



Shoulder region

MRI

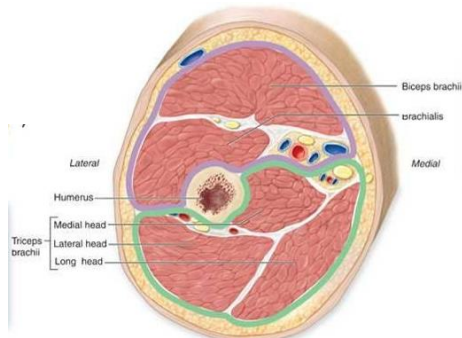
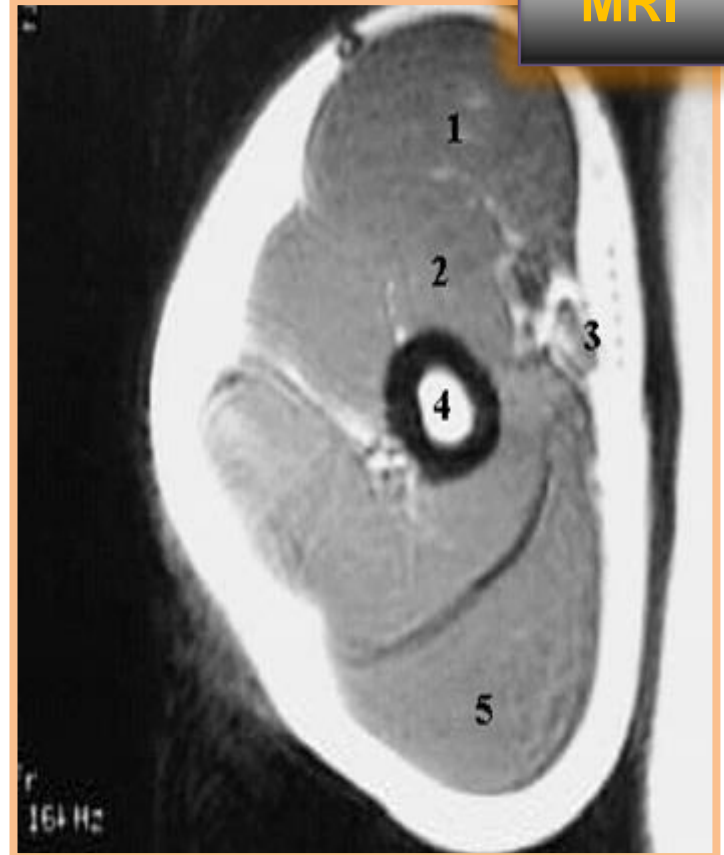
- 1-supraspinatus muscle
- 2- glenoid cavity
- 3-humeral head
- 4-deltoid muscle
- 5-acromion
- 6-clavicle
- 7-subscapularis muscle
- 8-teres minor



Arm

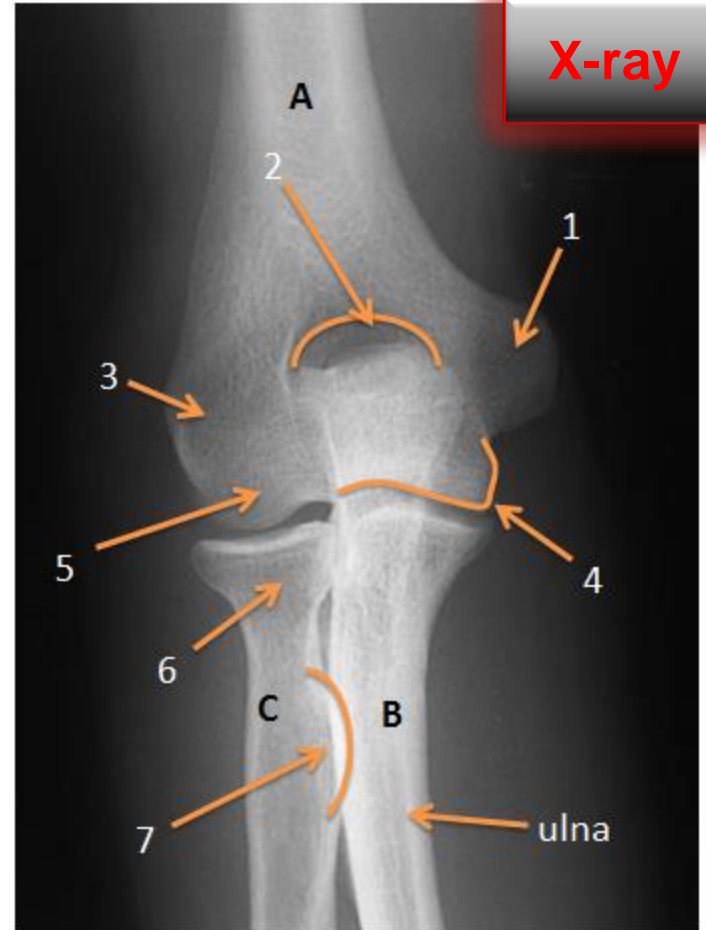
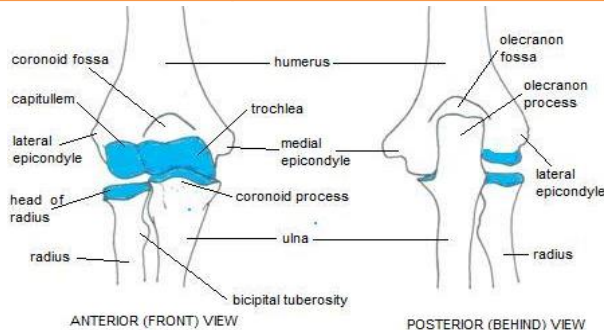
- 1 Biceps brachii muscle
- 2-Brachialis muscle
- 3-Brachial artery
- 4 Humerus
- 5-Triceps muscle

MRI



Elbow joint

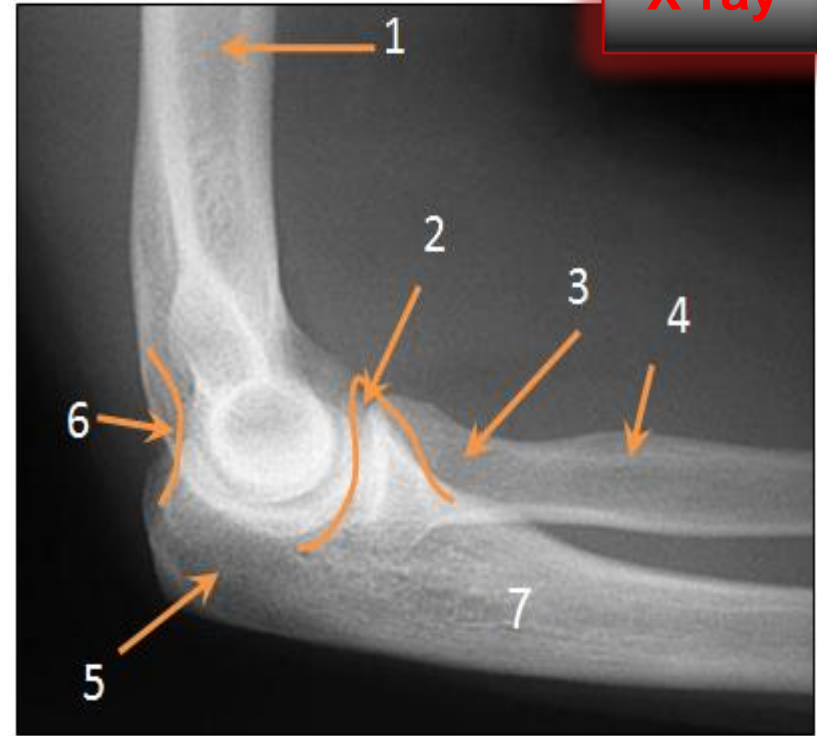
<p>A- Humerus.</p>	<p>1-Medial epicondyle. 2-Olecranon fossa. 3-Lateral epicondyle. 4-Trochlea. 5-Capitulum.</p>
<p>B- Ulna.</p>	<p>-----</p>
<p>C- Radius.</p>	<p>6-Radial. 7-Radial tuberosity.</p>



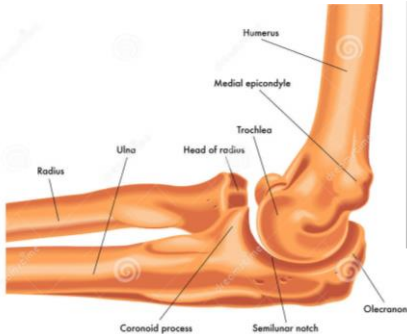
Elbow joint

X-ray

- 1- Humerus
- 2- Coronoid Process
- 3- Radial Head
- 4- Radial Tuberosity
- 5- Olecranon
- 6- Olecranon Fossa
- 7- Ulna



At the proximal end of the forearm the ulna is bigger than the radius, on the other hand at the distal end the radius is bigger than the ulna.



Child Elbow Joint



In a child scan you can find more cartilage than in adults.

Adult Elbow Joint



Hand

We have 8 carpal bones

(from lateral to medial & proximal to distal)

- Scapoid
- Trapezium
- Lunate
- Trapezoid
- Triquetral
- Capitate
- Pisiform
- Hamate

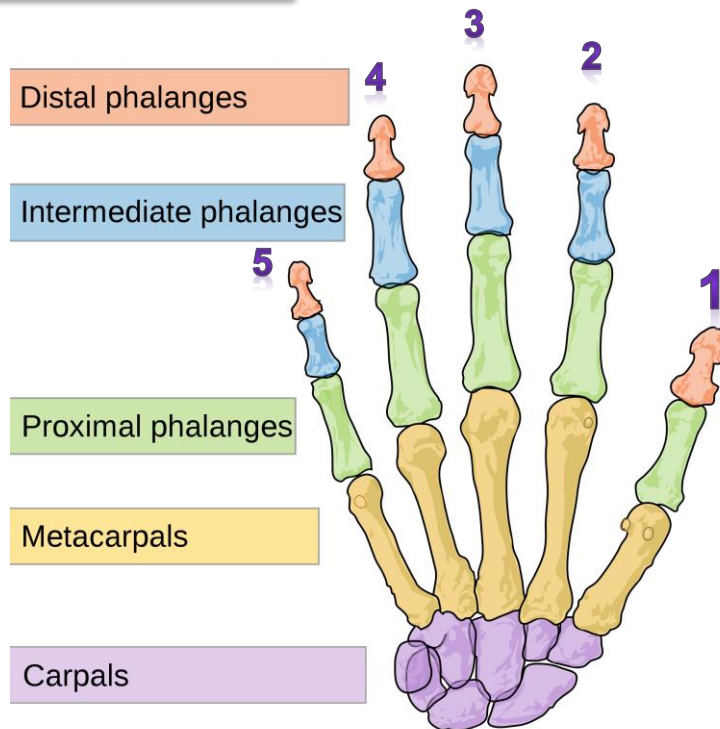
To help u memorize them :

“She Looks Too Pretty Try To Catch Her”

For naming & counting the **metacarpal** and **phalanges**:

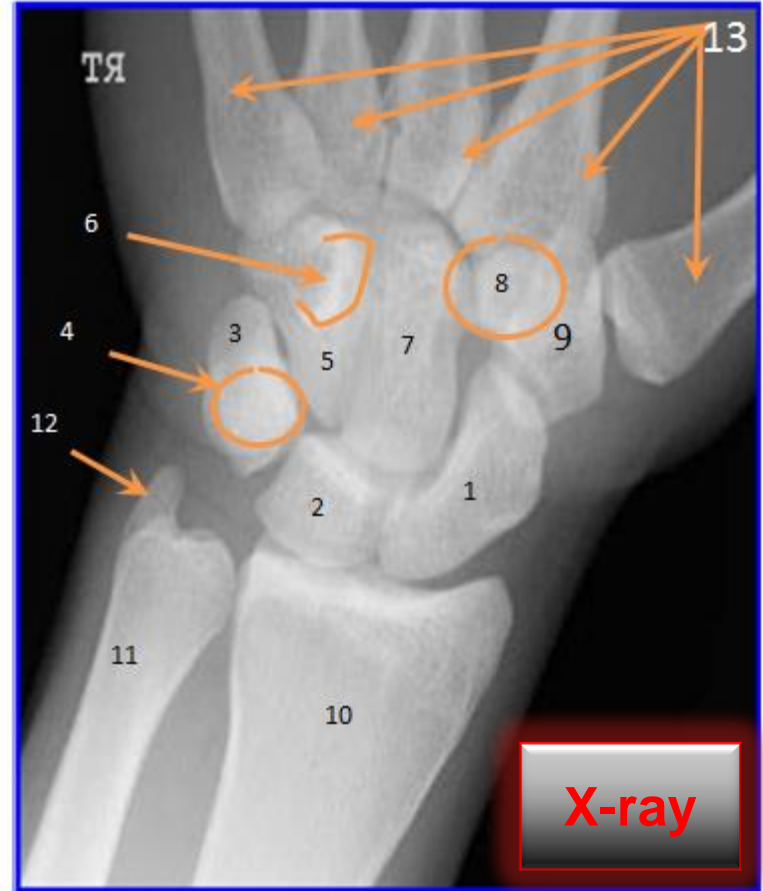
1st through 5th goes from “thumb” to “pinkie”

(from lateral to medial)



Hand

- 1- Scaphoid. (navicular)
 - 2- Lunate.
 - 3- Triquetrum.
 - 4- Pisiform.
 - 5- Hamate.
 - 6- Hook of Hamate.
 - 7- Capitate.
 - 8- Trapezoid.
 - 9- Trapezium.
 - 10- Radius.
 - 11- Ulna.
 - 12- Ulnar styloid process.
 - 13- 1st metacarpal.
- 2nd metacarpal (and so on from lateral to medial)



X-ray



Hand

1. Distal phalanx
2. Middle phalanx
3. Proximal phalanx
4. Distal interphalangeal joint
5. Proximal interphalangeal joint
6. Metacarpophalangeal joint



X-ray



Child hand



*as you can see
there is no
carpal bones
they're still
cartilage*

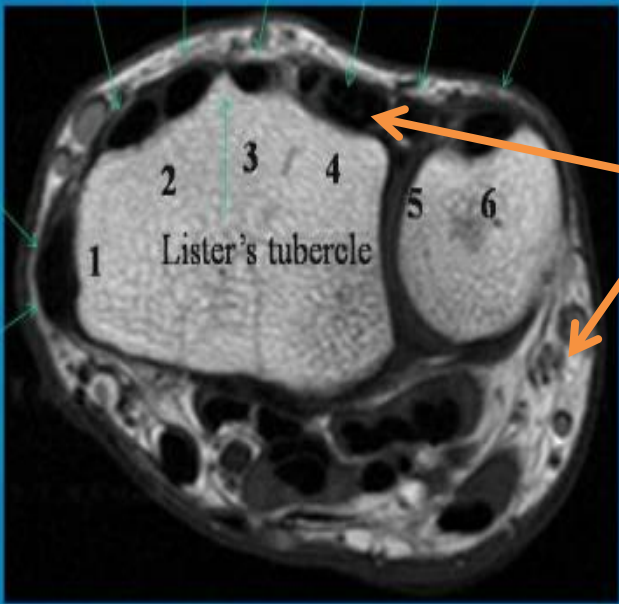
Adult hand



ECRL ECRB EPL ED EDM EU

EPB

APL



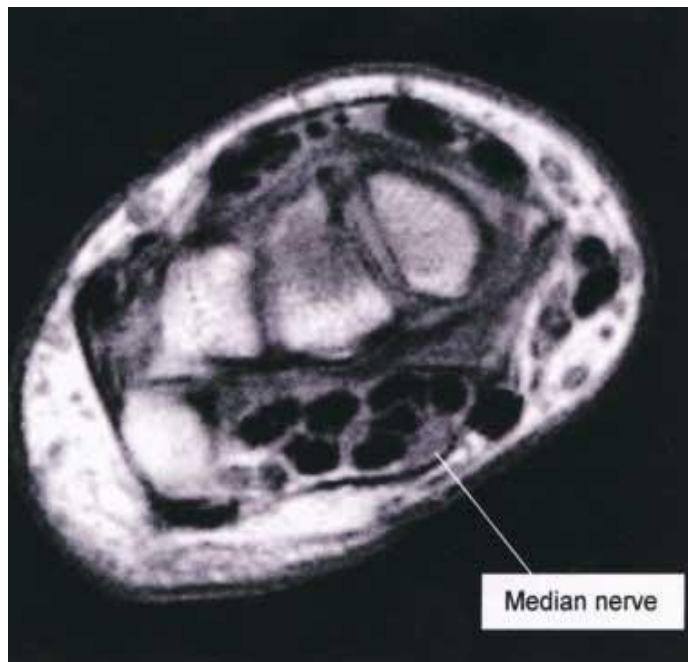
*In MRI imaging
tendons are
black & fats are
white*

MRI



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MRI



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You Useful videos

- [2 View Standard Shoulder Radiographic](#)
- [Y-view shoulder](#)
- [3 View Standard Elbow Radiology](#)
- [3 View Standard Hand Radiology](#)



test your self

[1- For more images & information of Shoulder.](#)

[2- Humerus Fracture.](#)



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