

ANATOMY TEAM

GOOD LUCK ;)

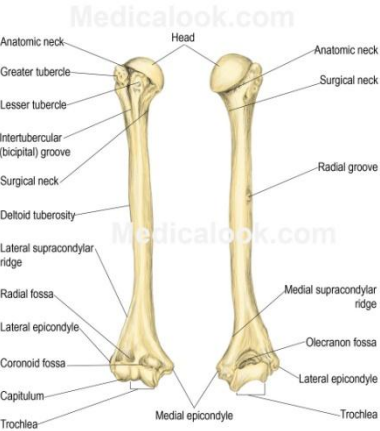
Bones of the upper limb

Anatomy team 432

تنويه : هذه العمل لا يعتبر مرجع أساسي للمذاكرة وإنما هو للمراجعة فقط ، السلايد هو المرجع الاساسي وتم التأكد بأن سلايد الأولاد والبنات موحد باستثناء هالسلايد غير موجود عند البنات :

Bone	Surface	Feature	Function	Articulation	Fractures
<p>Clavicle</p> <p>(b) Right clavicle, superior view</p> <p>(c) Right clavicle, inferior view</p> <p>Copyright © 2001 Benjamin Cummings, an imprint of Addison Wesley Longman, Inc.</p>	<p>Superior: Smooth</p> <p>Inferior: Rough "ligaments bind to the 1st rib"</p>	<p>-Long bone -No bone marrow</p> <p>Media(sternal): 2/3 convex, ends in a triangle and enlarged shape</p> <p>Lateral(Acromial): 1/3 concave, ends in flat shape</p>	<p>- Keeping the UL and scapula away from the trunk -Transmit forces from UL to axial -Protect the neurovascular by forming a boundary</p>	<p>-Medially: with manubrium "Sternoclavicular joint"</p> <p>-Lateral: with scapula "Acromioclavicular joint"</p> <p>-Inferiorly: with the 1st rib "Costoclavicular joint"</p>	<p>Junction of middle and lateral third. Most common in children</p>
<p>Scapula</p>	<p>-Convex posterior: Suprascapular Fossa, Infraspinous fossa</p> <p>-Concave Anterior: Subcapular fossa</p> <p>-Starts from the 2nd to the 7th rib</p>	<p>Triangular, flat 3 processes:</p> <p>-Spine(thick ridge, continue laterally)</p> <p>-Acromion (Subcutaneous point of shoulder)</p> <p>-Coracoid(Like a bent finger pointing to the shoulder)</p> <p>3 borders:</p> <p>-Superior -Medial -Lateral (thickest)</p> <p>3 angles:</p> <p>-Superior -Lateral(glenoid cavity) -Inferior</p>	<p>-Attachment to muscles -Glenoid cavity forms the socket of the shoulder joint. - Has a suprascapular notch: nerve passage, medial to coracoid</p>	<p>—</p>	<p>The scapula is well protected by the muscles and by its association with the thoracic wall. Most fracture happens in Acromion</p>

Humerus



Proximal, shaft, Distal

Long bone, largest in the UL

-Proximal end:
Head
Neck: (Anatomical, Surgical)
Greater tubercle: Lateral
Lesser tubercle: anteriorly. Both are separated by intertubercular groove.

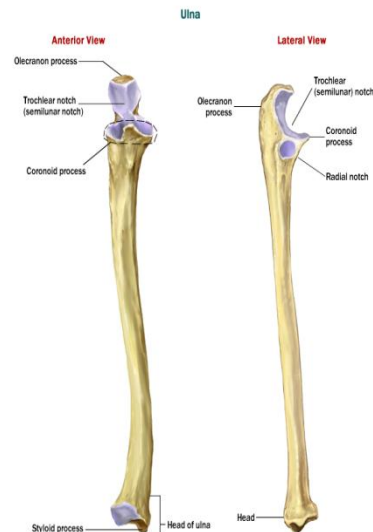
-Shaft: Deltoid tuberosity, Spiral groove.
-Distal end:
 Medial "كوع",
 Lateral epicondyle
 Trochlea
 Capitulum
 Coronoid fossa
 Radial fossa
 Olecranon fossa

Head:
 articulates with glenoid cavity
Trochlea:
 articulates with Ulna
Capitulum:
 Articulates with radius

In surgical Neck, especially in the elderly people with osteoporosis: Affects the Axillary Nerve
 In young people fracture happens in the Greater tubercle.

-Fracture positions that affect certain nerves:
 Radial groove: Radial nerve
 Distal end: Medial nerve
 Medial epicondyle: Ulna nerve "اللي يعطي الاحساس بالكهرباء عند الخبط"

Ulna



3 Surfaces: Anterior, Medial, And Posterior.

Proximal, Shaft, distal

Stabilizing bone of the forearm.
 Medial, longer than radius.

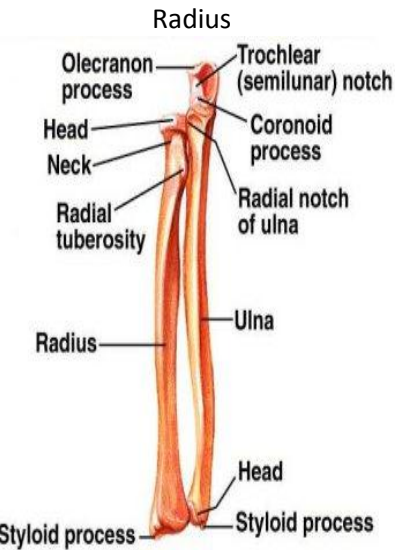
Proximal end:
Olecranon process: Projects posterior
Coronoid process: Projects anteriorly
Tuberosity of ulna: inferior to coronoid process.
Trochlear, Radial notch "lateral to coronoid process".

Shaft: thick, cylindrical.
 Diminishes inferiorly

Distal end: Styloid process "Medial"
 شكلو زي الكعب

Trochlear notch:
 Articulate with trochlea of Humerus

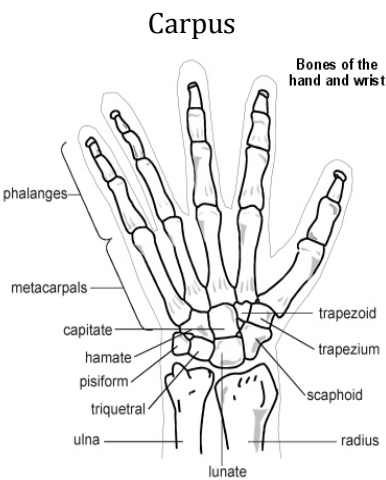
Head of Styloid:
 Articulation between Ulna and Humerus at the elbow joint



Anterior, Posterior, Lateral Surface. Upper surface of the head is concave

Shorter, lateral.
Proximal end:
 Head
 Neck
 Radial(Bicipital) Tuberosity
 "Medially"
Shaft:
 Lateral convexity, Enlarges distally
Distal end:
 Rectangular Ulnar notch
 Radial styloid process
 Dorsal tubercle.

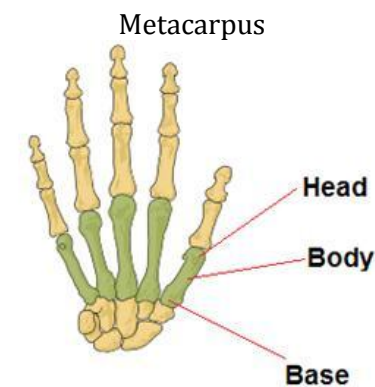
Colle's fracture: fracture of the distal end of radius. More common in Woman after middle age because of osteoporosis. It usual heals fast because of the rich blood supply to the distal end of the radius.



The carpus presents **concavity** on their **anterior** surface and **convex** from side to side posteriorly

8 Carpal bones. Start lateraly Gives flexibility to the wrist

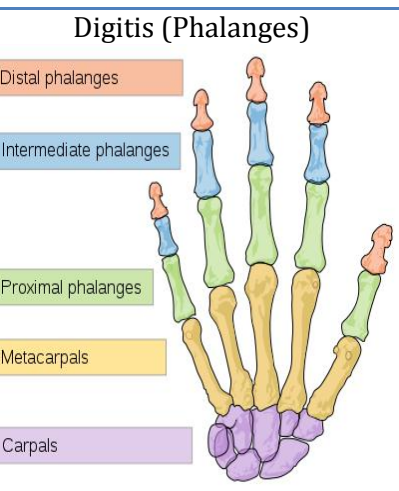
Most common: **Scaphoid**. Healing takes months due to its low blood supply



Has base, shaft and head

5 metacarpal bones. Is numbered laterally; 1 is the thumb
-1st metacarpal: short and most mobile
-3rd metacarpal: has a styloid process laterally to the base

The distal head: articulates with the proximal phalanges to form the knuckles
Base of metacarpal: articulate with the carpal bones



Base "proximally", body head "distally".

Each digit has 3 phalanges except the thumb '2'. Proximal phalanx is the largest, distal are the smallest with flat ends to form nails.

- ❖ Bases of the Metacarpal bones articulate with the distal row of the carpal bones
 - **Carpometacarpal joints**
- ❖ The distal end "Head" articulate with the Proximal Phalanges to form (knuckles)
 - **Metacarpophalangeal joints**
- ❖ The phalanges articulate with each other
 - **Interphalangeal joints**
- ❖ Distal end of Radius with the Proximal Row of Carpal bones
 - **Wrist joint**

Carpal bones:

Scaphoid, Lunate, Triquetral, Pisiform, Trapezium, Trapezoid, Capitate, Hamate

She Looks Too Pretty, Try To Catch Her

سوسو لَمَّا تلعب بوكر ، تكسب تخسر كلي هييسه

In the Proximal end: Triquetral

ثالث حرف هو الـ i

In the distal end: Trapezium, Trapezoid

ثالث حرف في الكلمتين هو a

Before start , you should to know the meaning of these terms:

General	Process	Projection or Prominence on a Bone(نتونات)
Processes that helps to form joints	Condyle Facet Head Ramus	Large, rounded articular process Smooth, flat surface Enlarged portion at an end of a bone Branch or extension of a bone
Processes that provide for the attachment of muscles and ligaments	Crest Epicondyle Linea (line) Spine Trochanter Tubercle Tuberosity	Narrow ridge Process on or above a condyle Narrow ridge (less prominent than a crest) Sharp or pointed process (spinous process) Large, irregularly shaped process (found only on the femur) Small, knoblike process Large, knoblike process
Depressions or openings (may provide passageways for blood vessels and nerves) Please see this link: http://quizlet.com/2804897/surface-markings-of-bones-lab-4-flash-cards/	Fissure Fontanel Foramen Fossa Fovea Meatus Sinus Sulcus"groove"	Narrow opening Membrane-covered spaces between skull bones Round opening Shallow depression Pit-like depression Tube-like passage Interior cavity Long, narrow depression

Important notes :-

- Clavicle doesn't have **bone marrow**
- The Acromion in the scapula is the **only subcutaneous** part in **scapula**
- The surgical neck in humerus is a narrow part distal to the tubercles → يكون مكان و ضيق وسميت كذا عشان أكثر مكان ينكسر عند الكبار أما الصغار فأكثر مكان ينكسر عندهم هو greater tubercle
- Most of the fractures of the scapula involve the protruding subcutaneous **Acromion**
- The upper surface of the **radius head is concave** for articulation with the **capitulum**
- The typical history of the fracture in radius & ulna includes **slipping**

مجموعه من المواقع المفيده في هذا البلوك :

<http://www.lifehugger.com/musculoskeletal-system>

<http://www.funtrivia.com/playquiz/quiz117847d7fdd0.htm>

<http://www.funtrivia.com/newflash/trivia.cfm?qid=164065>

<http://www.medicalmnemonics.com/cgi-bin/browse.cfm>

<http://www.getbodysmart.com/ap/muscularsystem/menu/menu.html>

<http://www.getbodysmart.com/ap/muscle/tissue/menu/menu.html>

REVIEW:

-What is the function of the pectoral girdle?

Gives the upper limb free movement + rigid support to keep scapula and upper limb away from trunk + provide attachment for muscles

-Which part of the scapula bone articulates with humerus?

Head of the humerus articulates with the **glenoid cavity** of the scapula form the *Shoulder joint*.

What we called the groove that separated the Greater & Lesser tubercles of Arm (Humerus) ?

Intertubercular Groove.

-Which bone in the upper limb lying horizontally?

Clavicle and it is the only horizontal bone.

-How many surfaces does the shaft of Clavicle has? Mention them?

It has two surfaces Superior "smooth" and Inferior "rough" , The Inferior surface shows Conoid tubercle and Trapezoid line.

What is the weakest part in the clavicle?

It is the junction of the medial and lateral thirds

What is the thickest border in scapula?

The axillary border or "lateral border" is the thickest part.

How many Fossa does scapula has?

Three (Supraspinous Fossa, Infraspinous Fossa and Subscapular Fossa)

What do we call the Fossae in the anterior concave surface of Scapula?

Subscapular Fossa

What is the function of Anatomical neck in humerus?

Separate the head from the tubercles.

Why the Spiral groove is also called the Radial groove?

Because of the radial nerve and vessels that passes through it

What is the name of the membrane which ties the shafts of the radius and ulna together?

Interosseous membrane

- How many arrangement do we have in the carpal bones?

Two, Proximal and distal.

What are the prominent features of the shaft in humerus?

Deltoid tuberosity (visible in the posterior and anterior side), and Spiral (Radial) groove(only visible in the posterior side)

Which Nerve is affected in fractures of surgical neck of humerus?

Axillary nerve

Where is the head of ulna located?

In the distal end while the head of radius in the proximal end.

Where is the Ulnar Notch?

In the distal end of radius.

What is the most common fracture of forearm?

Colle's Fracture

How many parts in the hand?

Three, wrist (carpal), Palm (metacarpal) and fingers (phalanges)

What is the largest carpal and what is the part is most commonly fractured?

*The largest carpal is **Capitate** and the most commonly part fractured is **Scaphoid***

QUIZ:

1- Transmits forces from the upper limb to the axial skeleton:

- A- Humerus
- B- Clavicle
- C- Ulna
- D- Radius

2- Which surface of clavicle show Conoid tubercle and Trapezoid line:

- A- Inferior
- B- Anterior
- C- Posterior
- D- Superior

3- The clavicle articulate.....at the sternoclavicular joint:

- A- Medially, with the Acromial end of the scapula
- B- Laterally, with the Acromial end of the scapula
- C- Laterally, with the Manubrium of sternum
- D- Medially, with the Manubrium of sternum

4- After Fractures of the Clavicle:

- A- medial elevated, lateral elevated
- B- medial dropped, lateral elevated
- C- medial elevated, lateral dropped
- D- medial dropped, lateral dropped

5- Forms the subcutaneous point of the shoulder:

- A- Spine
- B- Coracoid
- C- Acromion
- D- Glenoid

6- Scapula is :

- A- Irregular bone
- B- Flat bone
- C- Long bone
- D- Short bone

7- Three borders of scapula are:

- A- *Superior, Medial (Vertebral) & Lateral (Axillary)*
- B- *Inferior, Medial (Vertebral) & Lateral (Axillary)*
- C- *Superior, Medial (Axillary) & Lateral (Vertebral)*
- D- *inferior, Medial (Vertebral) & Lateral (Vertebral)*

8- Forms the Glenoid cavity:

- A- *Acromion processes*
- B- *Lateral angle*
- C- *Superior part*
- D- *Inferior part*

9- forms the large Subscapular Foss:

- A- *Concave posterior (Costal)*
- B- *convex Anterior (Costal)*
- C- *convex Posterior (Costal)*
- D- *Concave Anterior (Costal)*

10-Nerve passageway, medial to coracoid process:

- A- *Infraspinous Fossa*
- B- *Supraspinous Fossa*
- C- *Suprascapular Notch*
- D- *Subscapular Fossa*

11-most fracture of scapula involves the protruding subcutaneous:

- A- Spine
- B- Acromion
- C- Coracoid
- D- Sternomastoid

12-It lodges the important radial nerve and vessels:

- A- Spiral (radial) groove
- B- Deltoid tuberosity
- C- Intertubercular Groove
- D- Epicondyles

13- Trochlea:

- A- (lateral) for articulation with the radius
- B- (lateral) for articulation with the ulna
- C- (medial) for articulation with the radius
- D- (medial) for articulation with the ulna

14- Surgical Neck :

- A- Narrow part distal to the tubercles.
- B- Narrow part proximal to the tubercles.
- C- Wide part proximal to the tubercles.
- D- Wide part distal to the tubercles.

15- Olecranon fossa:

- A- Anterior, above the radius
- B- Anterior, above the ulna
- C- Posterior, above the trochlea
- D- Posterior, above the Capitulum

16- Fracture of Medial epicondyle of humerus affect:

- A- Axillary nerve
- B- Radial nerve.
- C- Median nerve.
- D- Ulnar nerve.

17- Sharp Lateral Interosseous border in:

- A- Distal end of radius
- B- Shaft of ulna
- C- Distal end of ulna
- D- Proximal end of ulna

18- Radial Notch are found in:

- A- Ulna
- B- Radius
- C- Humerus
- D- Extend from humerus to radius

19- Proximal and distal row of carpal are named :

- A- From medial to lateral
- B- From lateral to medial
- C- From Anterior to posterior
- D- From Posterior to anterior

20- The distal ends of metacarpal articulate with the proximal phalanges to form:

- A- Wrist joint
- B- 1st metacarpal
- C- styloid process
- D- Knuckles

N.Q	ANSWER
1	B
2	A
3	D
4	C
5	C
6	B
7	A
8	B
9	D
10	C
11	B
12	A
13	D
14	A
15	C
16	D
17	B
18	A
19	B
20	D

Good luck ;)