

# Upper limb summary

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Sobotta



## Introduction, ie. What is this good for?!

Dear students, colleagues,

This presentation summarizes the content of the lecture. It also contains a list of required knowledge and allows its practice with regard to clinical use.

The following pictograms will accompany you:



to recall or remember



clinical notes



to be completed



### How much do you remember?



- Name the marked bony structures hidden under the soft tissues in the figures below.
- Try to abduct / adduct in the radiocarpal joint. Is there any difference in the range of the movemets? If yes, why?

Do not know for sure? See the key on the next slide.





• Try to abduct / adduct in the radiocarpal joint. Is there any difference in the range of the movemets? If yes, why?

The styloid process of the radius extends further distally than that of the ulna, limiting radial deviation of the hand.





Fig. Upper limb. A. Anterior view of the upper limb. B. Superior view of the shoulder.

The same matter in different views...

subcutis – superficial (spf.) structures

Surface anatomy

- Cubital region, *rg. cubiti ant et post.*
- Antebrachium, **rg. antebrachii ant et post.**
- Carpal region, *rg. carpalis ant. et post.*
- Hand *palma manus, dorsum manus*





Give examples of medical procedures in which it is possible to apply the systemic, topographic, or sectional anatomy.



## **Surface anatomy**





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General arthrology, myology, osteology, neuroanatomy Angiology, neuroanatomy

## Systemic anatomy



General arthrology



#### 1. Name of the joint

PRACTICALS (PRACTICS)

- 2. Type of the joint (simple/compound, geometry)
- Description of articular surfaces, event. of the auxiliary structures
- Description of the joint capsule, joint ligaments (extra-/intraarticular)
- 5. Movements



## **Muscle tables**

Muscle	Origin	Insertion	Innervation	Function
Biceps brachii	Long head— supraglenoid tubercle of scapula; short head—apex of coracoid process	Tuberosity of radius	Musculocutaneous nerve (C5, C6)	Powerful flexor of the forearm at the elbow joint and supinator of the forearm; accessory flexor of the arm at the glenohumeral joint
Coracobrachialis	Apex of coracoid process	Linear roughening on midshaft of humerus on medial side	Musculocutaneous nerve (C5, C6, C7)	Flexor of the arm at the glenohumeral joint; adducts arm

The upper limb is directly related to the neck. Lying on each side of the superior thoracic aperture at the base of the neck is an **axillary inlet** laterally the first rib (Fig.).





Fig.: Upper limb, axilla

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## Nerve plexuses originate from the anterior branches of the spinal nerves.

## **Mixed peripheral nerves**

- Musculocutaneous nerve
- Median nerve
- Ulnar nerve ٠
- Radial nerve ٠
- Axillary nerve •

## **Spinal Nerves Posterior View**





## **Arteries**







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## Axilla





## **Superficial structures**





Anatomy

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### Osteofascial compartments



## Arm

#### Axillary artery and vein Cords of the brachial plexus Lymph nodes



Fig.: Sectional anatomy – axilla and arm (A, B)

Brachial artery and vein

### Anterior cubital region, cubital fossa



## Forearm

#### Radial and ulnar artery and vein Radial, ulnar and median nerves Cephalic and basilic vein



## Extrinsic muscles of the hand





## Muscles and fascias, hand





### Intrinsic muscles of the hand: mm. of the thumb, little finger and mid-compartment



Anatomy of the Hand; L. Eberlova, 2023 Flexores digitorum

superficialis

## Hand synovial and fibrous digital sheaths



Hand synovial and fibrous digital sheaths of the right hand.



Phlegmona of the 3<sup>rd</sup> finger

## Arteries of the hand





Which tendons border the snuff box?



### Nerves of the hand



#### The radial nerve innervates the skin on the dorsum, extrinsic mm: extensors, abductors

#### **Clinical Note**

All the extensors of the wrist are innervated by the posterior interosseous nerve, which is a terminal branch of the radial nerve. Thus, a midhumeral fracture that lacerates the radial nerve as it traverses the posterior surface of the humerus will result in an inability to extend the wrist, which is referred to as "wrist drop."

### **Carpal tunnel**

The ulnar nerve and artery cross the wrist in a compartment that is separate from the carpal tunnel. Within the hand, the ulnar nerve divides into superficial and deep branches, which supply most of the intrinsic muscles of the hand.



#### Nerves of the hand and carpal tunnel revision **Clinical Note** Nine tendons pass through the carpal tunnel, surrounded by synovial sheaths. The inflammation (tendosynovitis) can cause carpal tunnel syndrome. **Carpal Tunnel Syndrome** Palmar branch of median nerve from forearm Palmar view Concerning the carpal syndrome, Lateral two choose the nerve, that can be lumbrical muscles affected: **Digital nerves** The radial n. i. Flexor pollicis brevis Palmar branch Abductor pollicis brevis ii. The ulnar n. (of median nerve) The median nn. iii. **Recurrent branch** (of median nerve) Median nerve Regarding the nerve area and the muscles it innervates, Dorsal view try to assume the possible symptoms of its palsy.





One more time?

Download the presentation!

