

## Unit 27: Topographic anatomy: Forearm and hand

### Guide for the practical class using Anatomedia online

#### Topography of the posterior compartment of the forearm

1. Go to An@tomedica, **upper limb** module-regions-frame: **24** (Posterior compartment of forearm)

- Click on underlined text to review layers of muscles, vessels, nerves of the posterior forearm compartment in addition to its clinical importance
- Activate 'can you identify' to visualize bones of the forearm, antebrachial fascia and extensor retinaculum, some muscles of the posterior compartment and neurovascular structures

#### Forearm muscles (posterior compartment)

2. Go to An@tomedica, **upper limb** module-systems-frames: **26 and 27** (Forearm superficial and deep extensor layers)

- Click on underlined text to identify names, positions, attachments, function and supply of individual muscles in the forearm superficial and deep extensor layers
- Activate 'can you identify' to see positions and attachments of these muscles

#### Topography of the posterior regions of the hand

3. Go to An@tomedica, **upper limb** module-regions-frames: **25 and 26** (Anatomical snuffbox roof, borders and floor)

- Click on underlined text to review the borders and contents of the roof/floor of the anatomical snuffbox
- Activate 'can you identify' to visualize tendons, fascial thickening, contents and structures traversing the snuffbox

4. Go to An@tomedica, **upper limb** module-regions-frames: **27 and 28** (Dorsum of hand, Vessels and nerves of dorsum)

- Click on underlined text to review the arrangement of tendons under the extensor retinaculum, vessels and nerves passing superficial and deep to retinaculum
- Activate 'can you identify' to visualize tendons and extensor retinaculum compartments, vessels and nerves of dorsum of hand

#### Topography of the anterior compartment of the forearm and hand

5. Go to An@tomedica, **upper limb** module-regions-frame: **16** (Anterior compartment of forearm)

-Click on underlined text for a brief review of layers of muscles, vessels, nerves of the anterior forearm compartment

-Activate 'can you identify' to visualize bones of the forearm, the deep fascia, some muscles of the anterior compartment and neurovascular structures

6. Go to An@tomedica, **upper limb** module-systems-frames: **24 and 25** (Forearm superficial and deep flexor layers)

-Click on underlined text to repeat names, positions, attachments, function and supply of individual muscles in forearm superficial and deep layers

-Activate 'can you identify' to see positions and attachments of these muscles

7. Go to An@tomedica, **upper limb** module-regions-frames: **17 and 18** (Carpal tunnel roof & ulnar canal, Carpal tunnel contents & palm)

-Click on underlined text to review the boundaries of carpal tunnel, structures passing over and under its roof, boundaries and contents of ulnar canal, arrangement of tendons and median nerve under the flexor retinaculum and intrinsic muscle layers in the palm

-Activate 'can you identify' to visualize boundaries and contents of carpal tunnel, extrinsic tendons and intrinsic muscles of the palm

8. Go to An@tomedica, **upper limb** module-regions-frames: **19 and 20** (Arteries & nerves of palm, Palmar aspects of digits)

-Click on underlined text to review arterial arches, terminations of median and ulnar nerves, structures on the palmar aspect of digits including the 'web spaces'

-Activate 'can you identify' to visualize boundaries and contents of carpal tunnel, extrinsic tendons and intrinsic muscles of the palm

## **Hand muscles**

9. Go to An@tomedica, **upper limb** module-systems-frames: **28 and 29** (Hand intrinsic muscles layers 1 and 2)

-Click on underlined text to identify names, positions, attachments, function and supply of individual muscles in the first two layers

-Activate 'can you identify' to see positions and attachments of these muscles

10. Go to An@tomedica, **upper limb** module-systems-frames: **30 and 31** (Hand intrinsic muscles layers 3 and 4)

-Click on underlined text to identify names, positions, attachments, function and supply of individual muscles in the deep two layers

-Activate 'can you identify' to see positions and attachments of these muscles

11. Go to An@tomedica, **upper limb** module-systems-frames: **34 and 35** (Flexor and extensor retinacula & tendons)

- Click on underlined text to review attachments of flexor and extensor retinacula and their relations to flexor and extensor tendons

- Activate 'can you identify' to see positions of retinacula and tendons

## **Nerves and blood vessels of the forearm and hand**

12. Go to An@tomedica, **upper limb** module-systems-frame: **44** (Median nerve)

- Click on underlined text to review branches and distribution of the median nerve, its anatomical variations and clinical manifestation of its lesions

- Activate 'can you identify' to visualize origin and branches of the median nerve

13. Go to An@tomedica, **upper limb** module-systems-frames: **45 and 47** (Ulnar and Radial nerves)

- Click on underlined text to review branches and distribution of ulnar and radial nerves, their anatomical variations and clinical manifestation of their lesions

- Activate 'can you identify' to visualize origin and branches of these two peripheral nerves

14. Go to A@tomedica, **upper limb** module-systems-frame: **49** (Ulnar & radial arteries)

- Click on underlined text to review branches of the ulnar and radial arteries, their variations, anastomoses and specifics of terminations their digital branches

- Activate 'can you identify' to visualize the above arterial branches

15. Go to An@tomedica, **upper limb** module-systems-frame: **50** (Veins of upper limb)

- Click on underlined text to review origins of major superficial and deep veins of the upper limb

- Activate 'can you identify' to visualize the above veins and their tributaries

## **Dissection**

16. Go to An@tomedica, **upper limb** module-dissection-frames: **19 to 24** (Anterior forearm compartment: LAYER-BY-LAYER DISSECTION)

- Turn on the colored buttons to highlight different dissected structures, from surface to deep

- Activate 'can you identify' to see dissected structures

17. Go to An@tomedica, **upper limb** module-dissection-frames: **25 to 36** (Carpal tunnel and palm of hand, palmar aspects of digits: LAYER-BY-LAYER DISSECTION)

- Turn on the colored buttons to highlight different dissected structures, from surface to deep
- Activate 'can you identify' to see dissected structures

18. Go to An@tomedica, **upper limb** module-dissection-frames: **45 to 49** (Posterior forearm compartment: LAYER-BY-LAYER DISSECTION)

- Turn on the colored buttons to highlight different dissected structures, from surface to deep
- Activate 'can you identify' to see dissected structures

19. Go to An@tomedica, **upper limb** module-dissection-frames: **50 to 52** (Dorsal aspects of hand and digits: LAYER-BY-LAYER DISSECTION)

- Turn on the colored buttons to highlight different dissected structures, from surface to deep
- Activate 'can you identify' to see dissected structures

### **Anatomical basis of some clinical procedures**

20. Go to An@tomedica, **upper limb** module-dissection-frame: **56** (Carpal tunnel injection)

- Click on underlined text to review how is carpal tunnel approached when there is a need for an injection of corticosteroids, which layers are traversed and what structures are endangered in process
- Activate 'can you identify' to visualize structures of the carpal tunnel and nerves and vessels endangered in this procedure

21. Go to An@tomedica, **upper limb** module-dissection-frame: **61** (Radial artery puncture)

- Click on underlined text to review the ideal site for radial artery puncture, what should be assessed before the procedure, which layers are traversed and what structures are endangered in process
- Activate 'can you identify' to visualize structures of the anatomical snuffbox and nerves and vessels endangered in this procedure