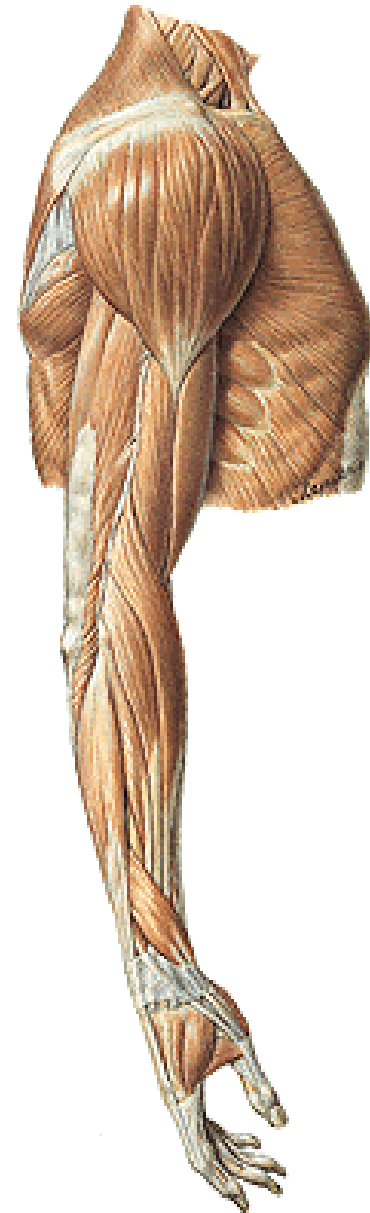
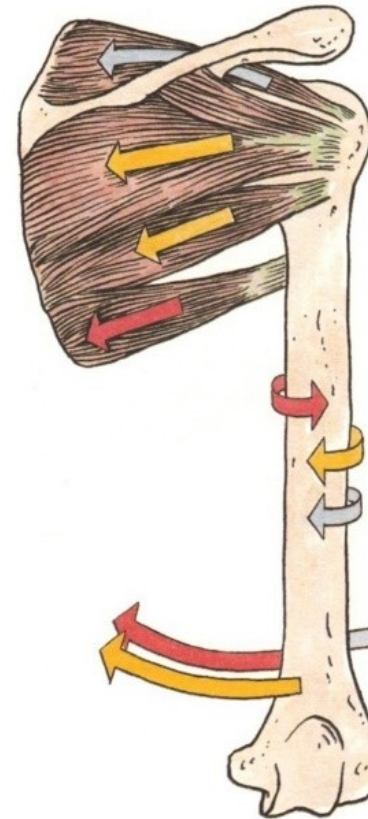
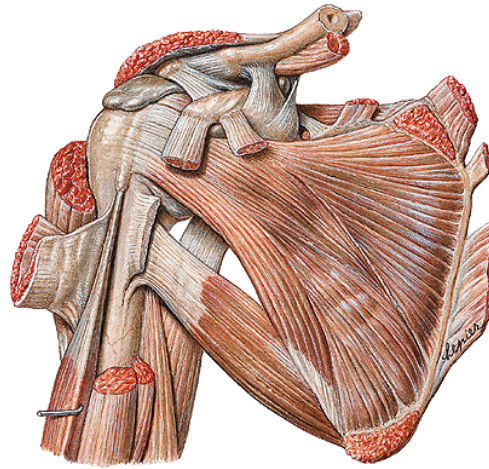
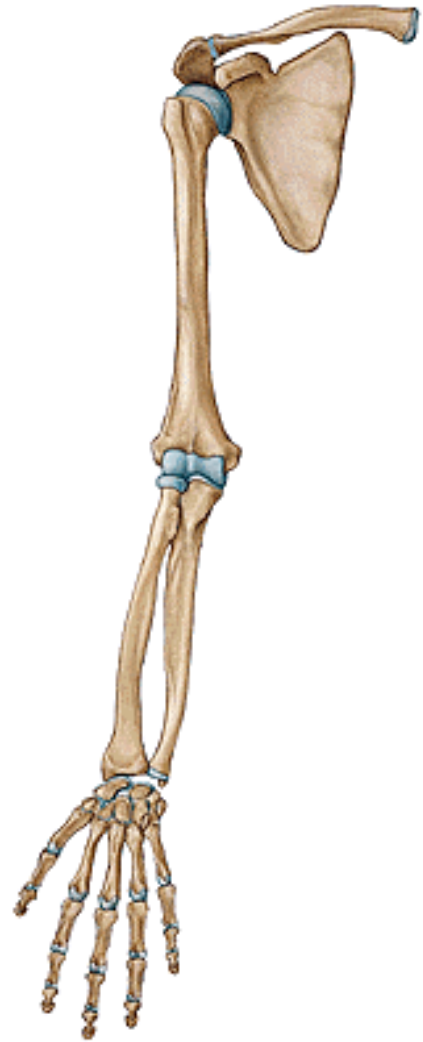


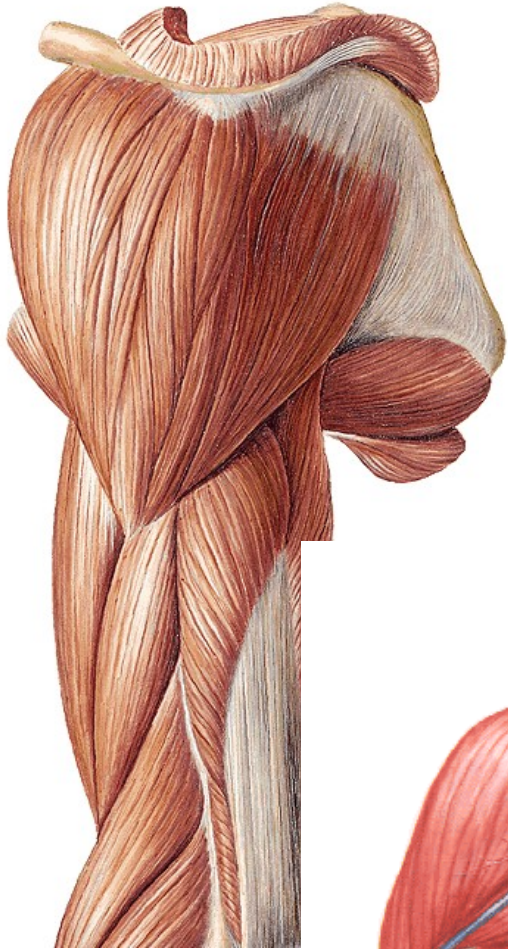
# **Svaly horní končetiny**

*Mm. membri superioris*

# Svaly pletence pažního (*musculi humeri*)

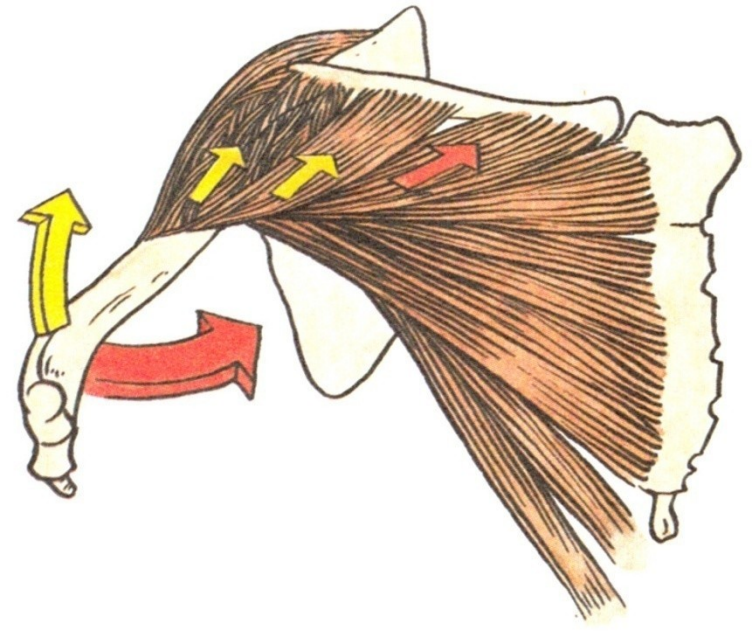
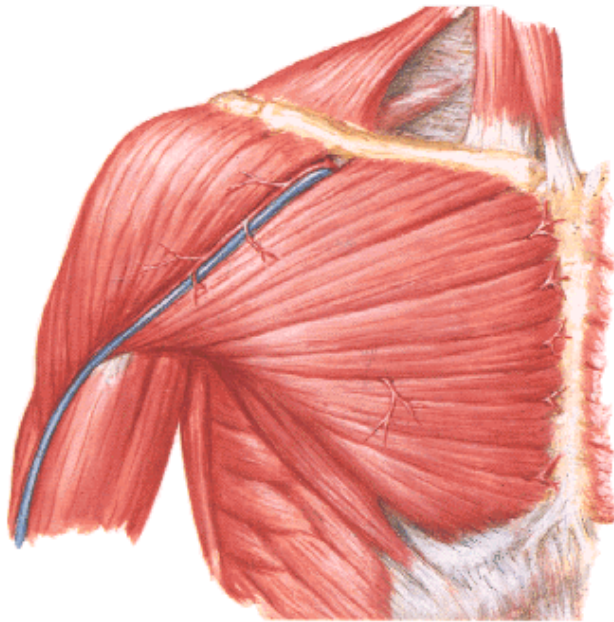
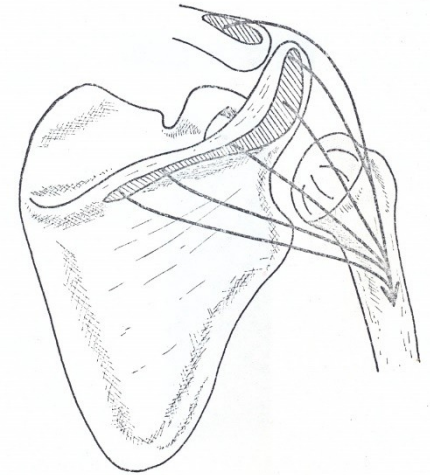
***Musculus deltoideus***  
***Musculus supraspinatus***  
***Musculus infraspinatus***  
***Musculus teres minor***  
***Musculus teres major***  
***Musculus subscapularis***





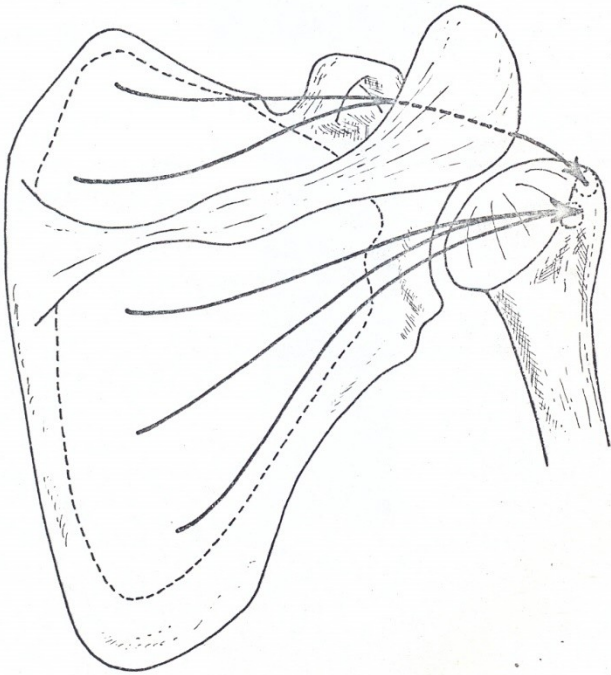
## Musculus deltoideus

**f:** upažení, předpažení, zapažení  
**i:** n. axillaris (plexus brachialis)



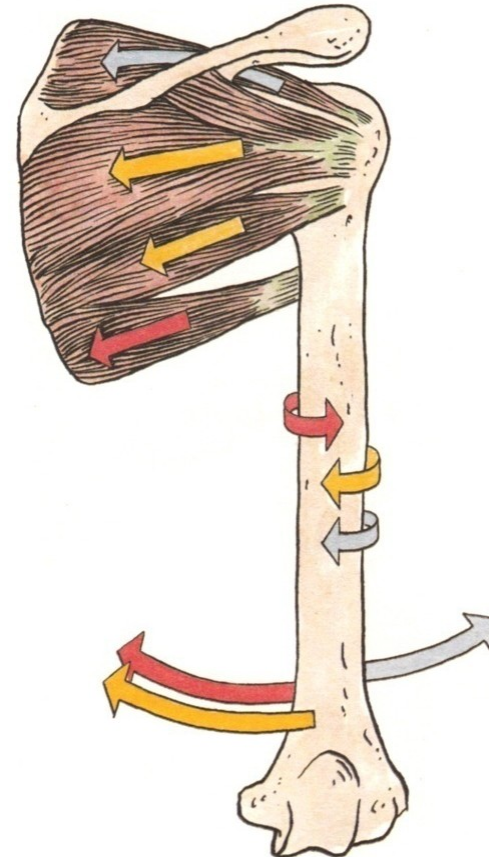
## Musculus supraspinatus

**f:** upažení, humerální supinace  
**i:** n. suprascapularis (plexus brachialis)



## Musculus infraspinatus

**f:** humerální supinace, addukce  
**i:** n. suprascapularis (plexus brachialis)





## Musculus teres major

**f:** addukce, extenze, pronace paže

**i:** n. subscapularis (plexus brachialis)

## Musculus teres minor

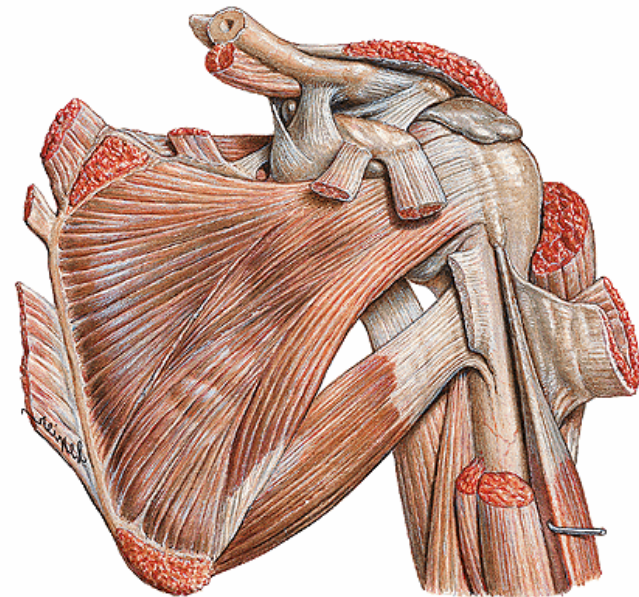
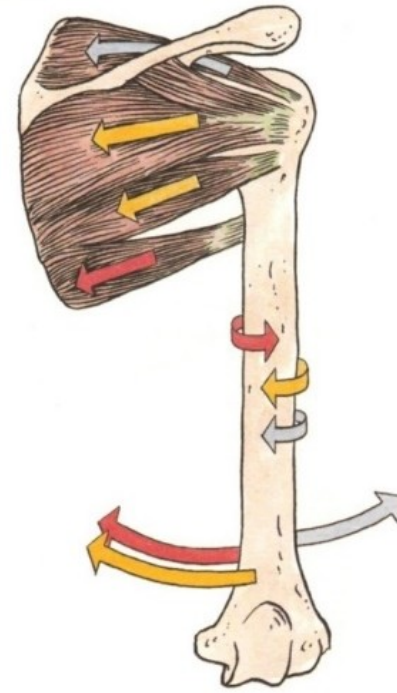
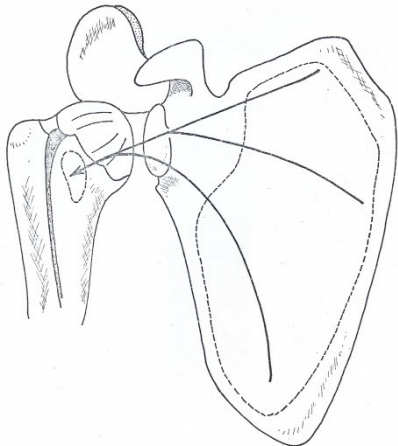
**f:** humerální supinace, addukce

**i:** n. axillaris (plexus brachialis)

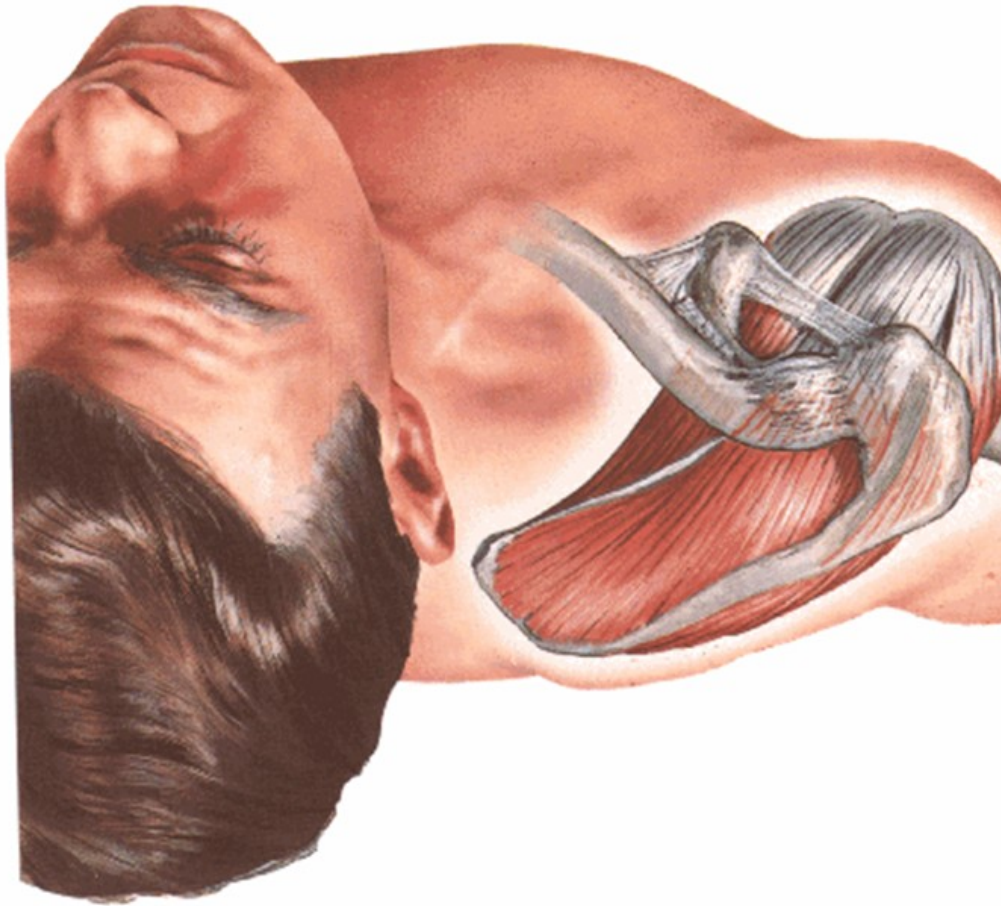
## Musculus subscapularis

**f:** pronace paže, addukce

**i:** n. subscapularis (plexus brachialis)



# Rotátorová manžeta



## Šlachy svalů:

*m. supraspinatus*

*m. infraspinatus*

*m. teres minor*

*m. subscapularis*

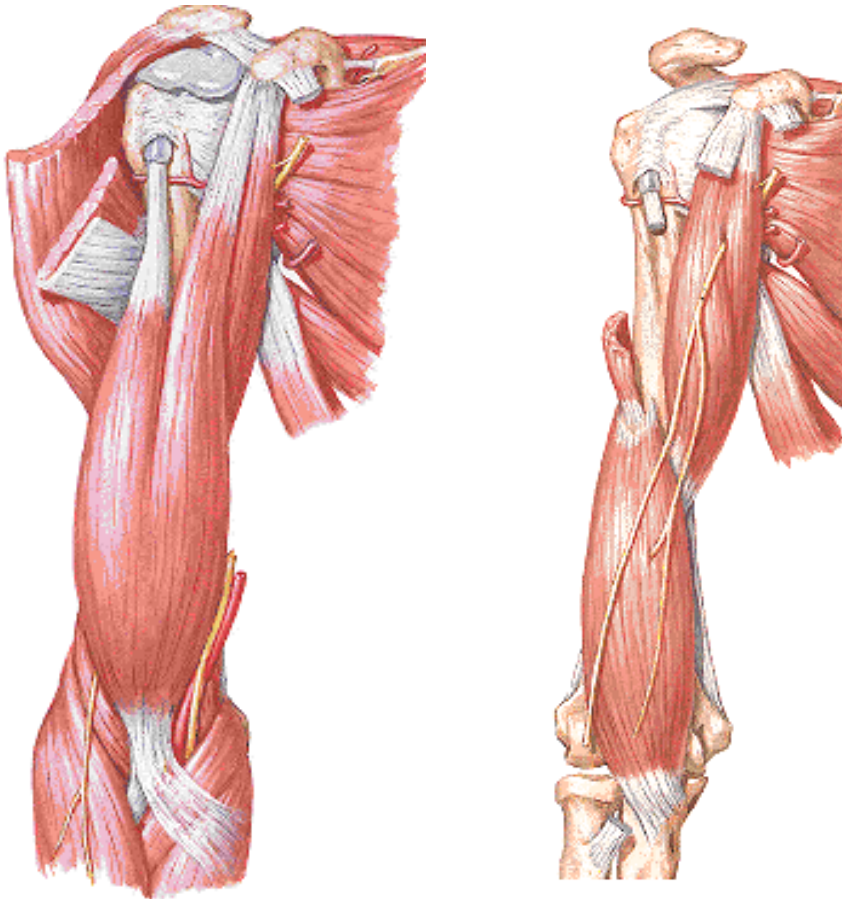
**Fascie svalů pletence pažního**

**Fascia deltoidea**

# Musculi brachii (svaly paže)

## Ventrální skupina

*Musculus biceps brachii*  
*Musculus coracobrachialis*  
*Musculus brachialis*



## Dorsální skupina

*Musculus triceps brachii*  
*Musculus anconeus*



# Ventrální skupina pažních svalů

inervace n. musculocutaneus (plexus brachialis)

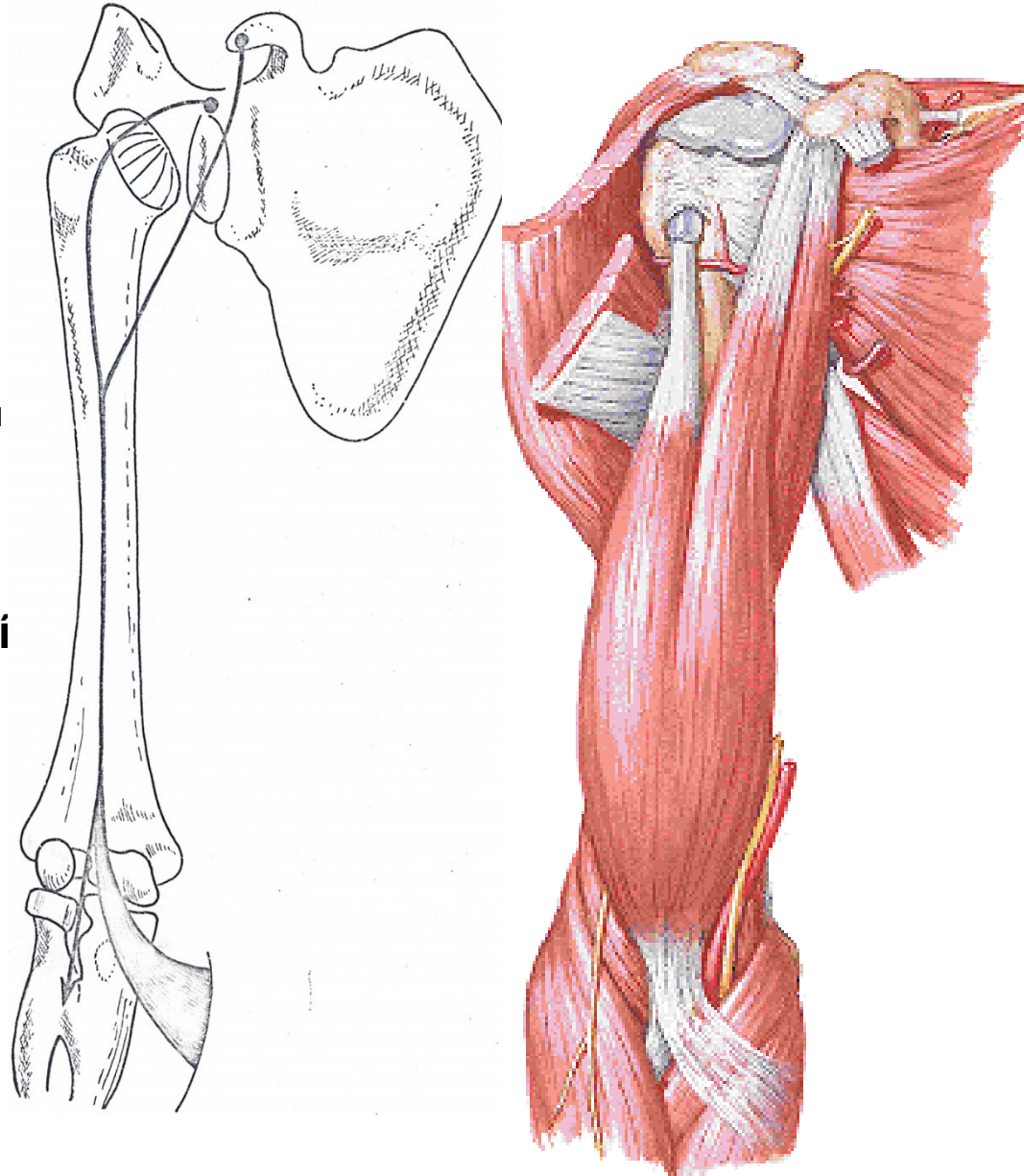
## Musculus biceps brachii

**o:** *caput longum*  
*caput breve*

**f:** za supinace flexe v loketním kloubu

*caput longum* - upažení

*caput breve* - předpažení, připažení





## Musculus coracobrachialis

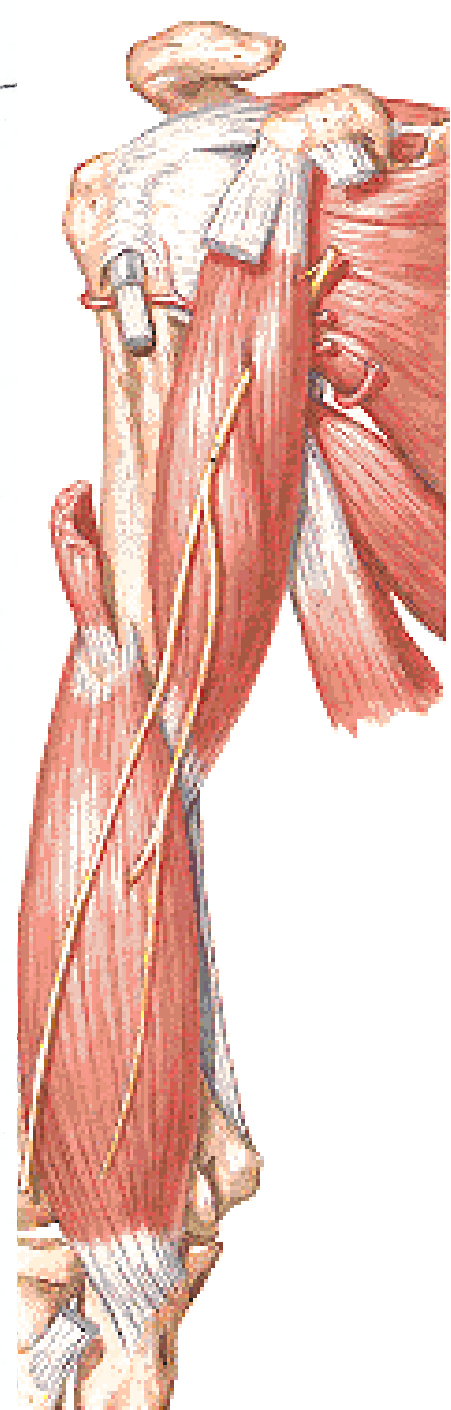
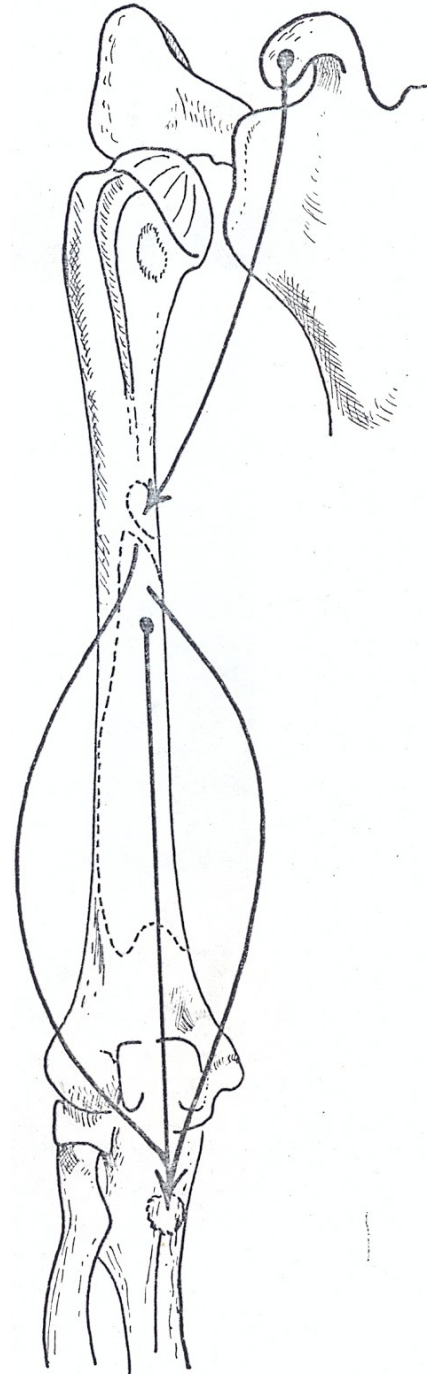
f: připažení, napomáhá předpažení

## Musculus brachialis

f: flexe v lokti

**za pronace – flexe** v loketním kloubu  
**m. brachialis** (hlavně + m. biceps brachii)  
**za supinace – m. brachialis + m. biceps**  
**brachii**

**Podhmat je silnější než nadhmat !!!**



# Musculus triceps brachii

inervace n. radialis (plexus brachialis)

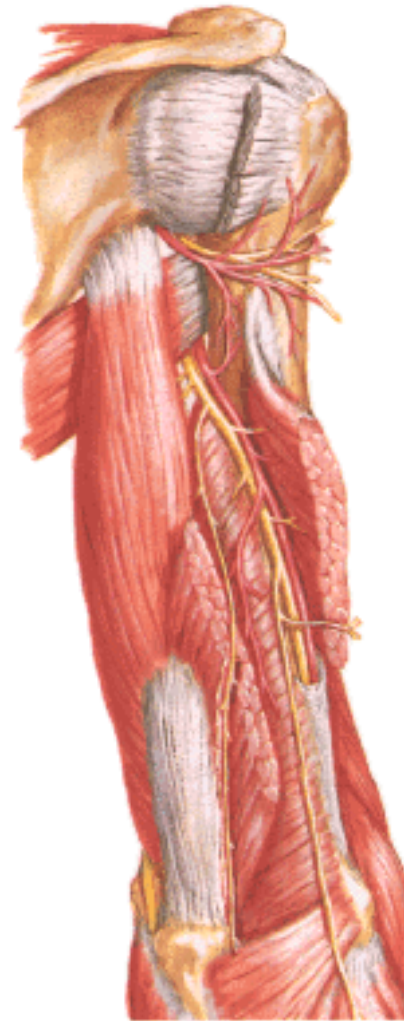
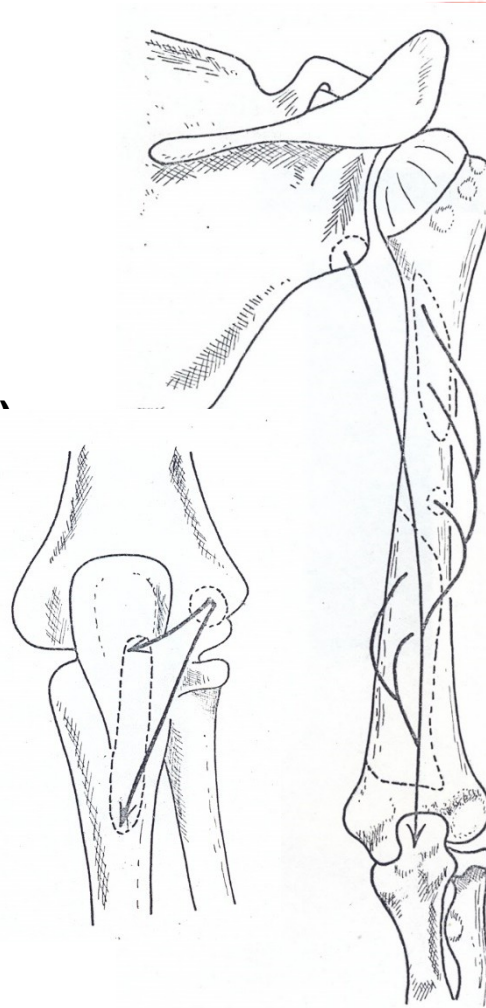
**o:** *caput longum*  
*caput mediale*  
*caput laterale*

**f:** extenze v loketním kloubu  
addukce paže (*caput longum*)

## Musculus anconeus

(„4. hlava tricepsu“)

**f:** extenze předloktí



**Entezopatie** (bolestivé syndromy způsobené záněty úponů šlach svalů na olecranon ulnae)  
tricepsu – košíková, házená, hod diskem, judo

# Foramen humerotricipitale

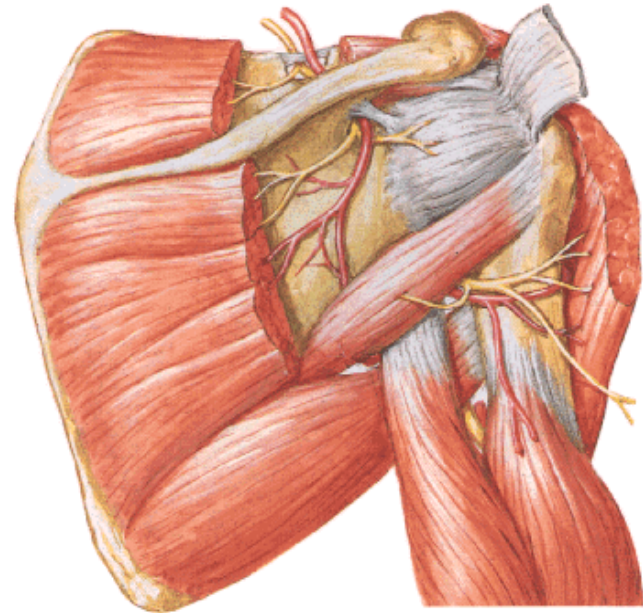
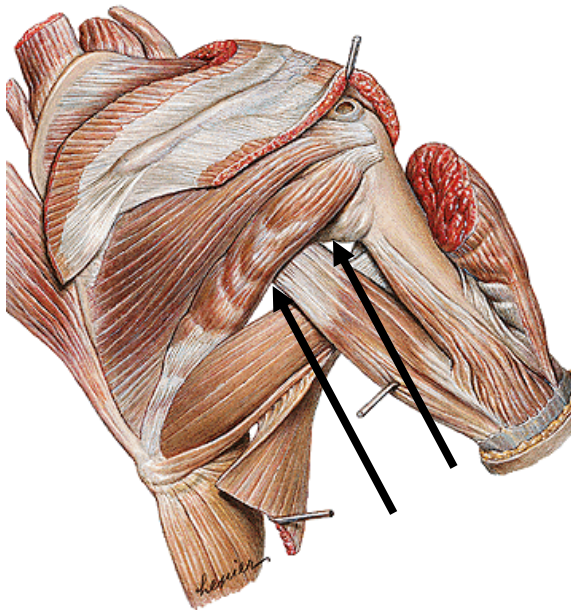
**ohraničení:** *m. teres major et minor, caput longum m. tricipitis brachii, humerus*

**obsah:** *n. axillaris, a. et v. circumflexa humeri posterior (větev a. axillaris)*

## Foramen omotricipitale

**ohraničení:** *m. teres major et minor, caput longum m. tricipitis brachii*

**obsah:** *a. et v. circumflexa scapulae (větev a. axillaris)*



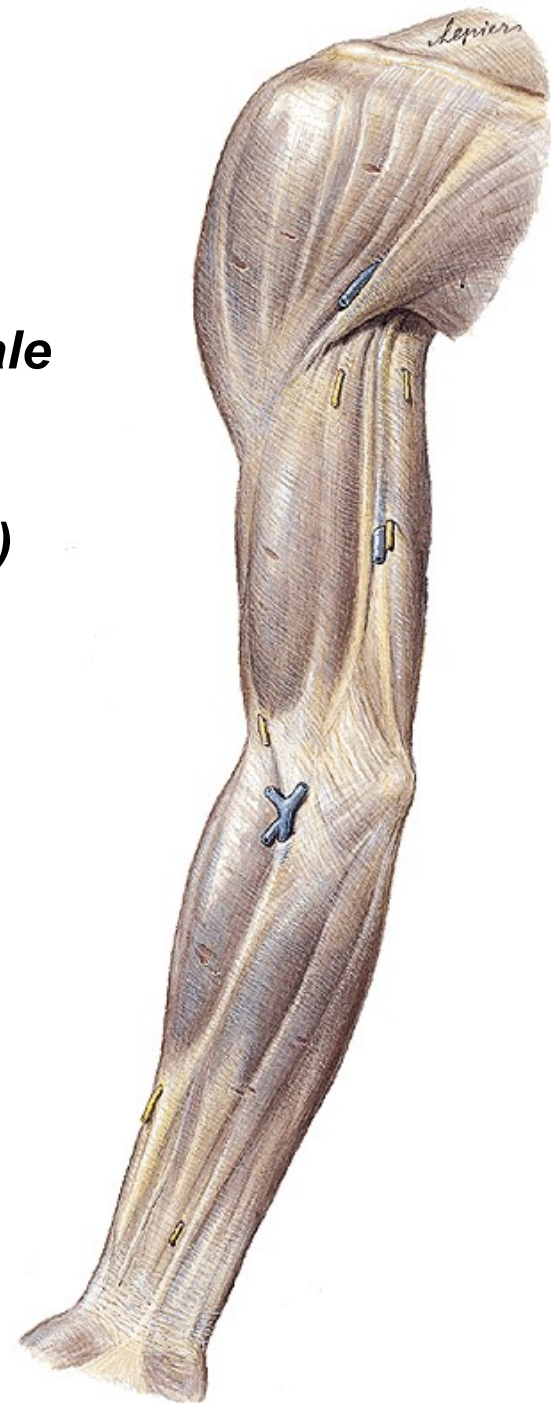
# Fascia brachii

*septum intermusculare mediale et laterale*

*sulcus bicipitalis medialis*  
(*vasa brachialia, n. medianus, n. ulnaris*)

*hiatus basilicus*  
(*vena basilica*)

*sulcus bicipitalis lateralis*  
(*vena cephalica*)





# Podpažní jamka (*fossa axillaris*)

## Ventrální stěna:

šlacha *m. pectoralis major*

## Dorsální stěna:

*m. latissimus dorsi* a *m. teres major*

## Mediální stěna:

část hrudníku s *m. serratus anterior*

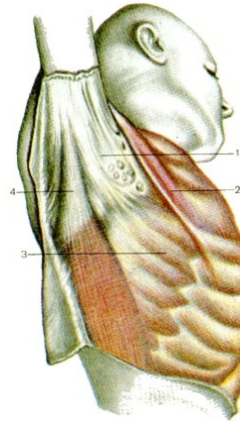
## Laterální stěna:

*humerus*, *caput breve m. bicipitis brachii*, *m. coracobrachialis*

**Báze** - *fascia axillaris*

**Vrchol** - 1. žebro, laterální část klíční kosti a lopatky

**Obsah:** infraklavikulární část *plexus brachialis*, *a. et v. axillaris*,  
mízní uzliny



# PARS INFRACLAVICULARIS

## Plexus brachialis

Rozdělením tří trnků vznik:

### Fasciculus lateralis

Nervus musculocutaneus  
Radix lateralis nervi mediani

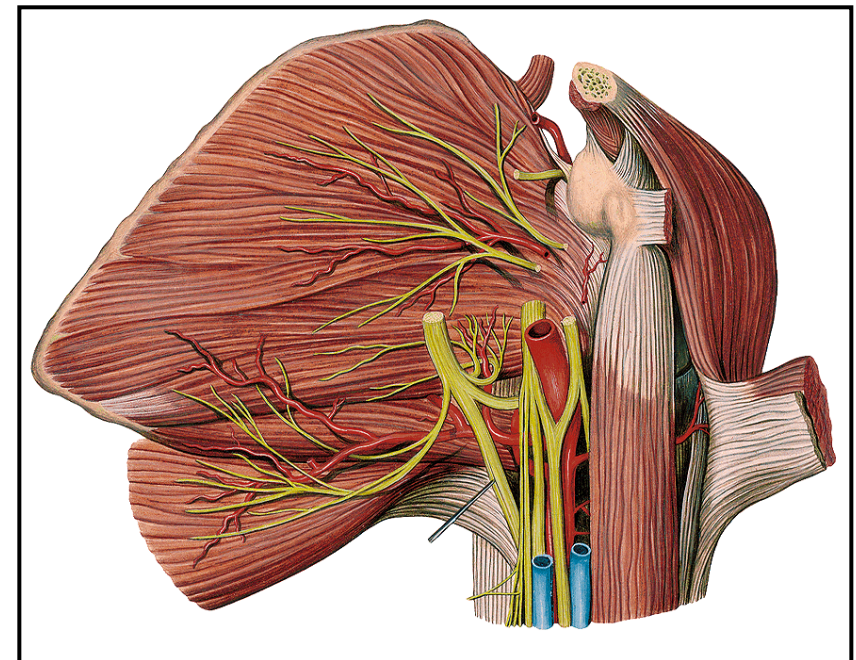
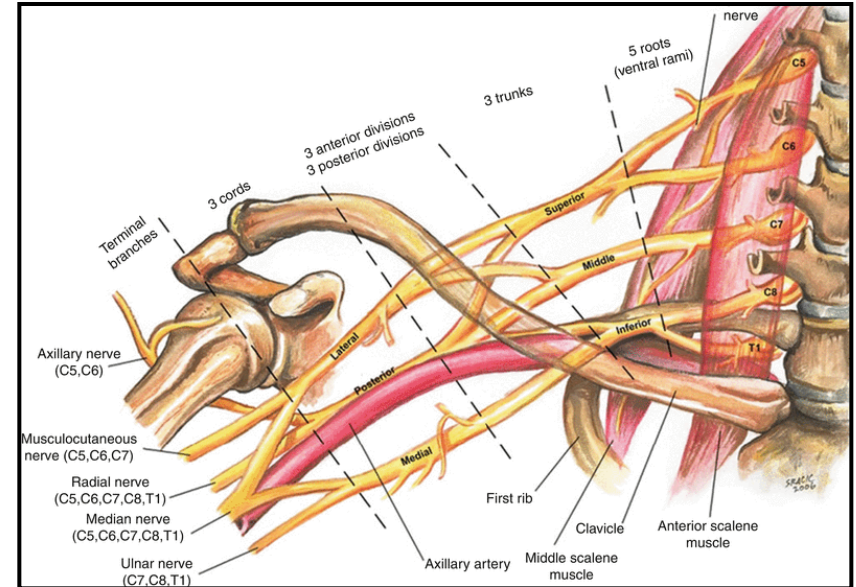
### Fasciculus medialis

Nervus cutaneus brachii med.  
Nervus cutaneus antebrachii med.

Nervus ulnaris  
Radix medialis nervi mediani

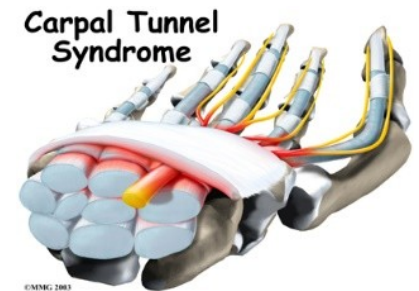
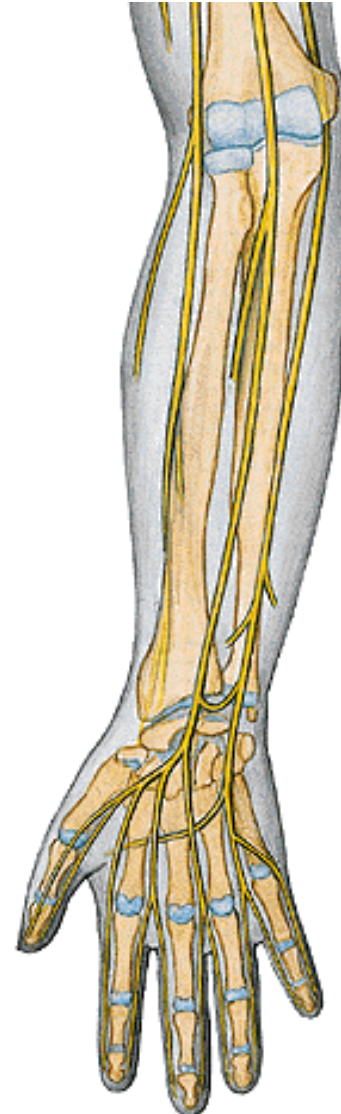
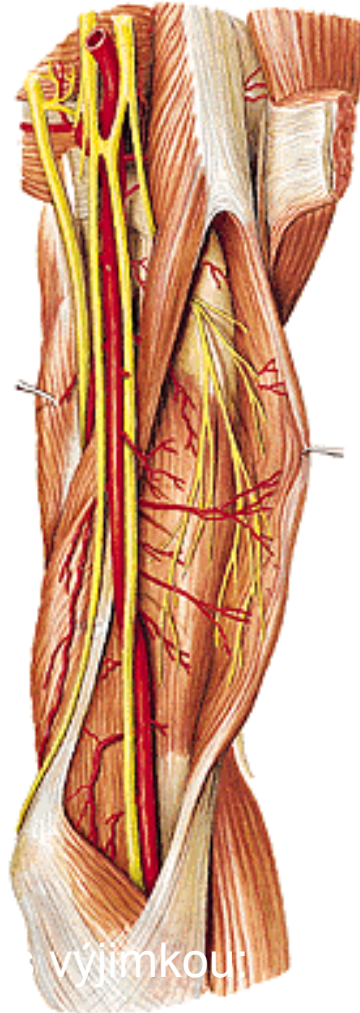
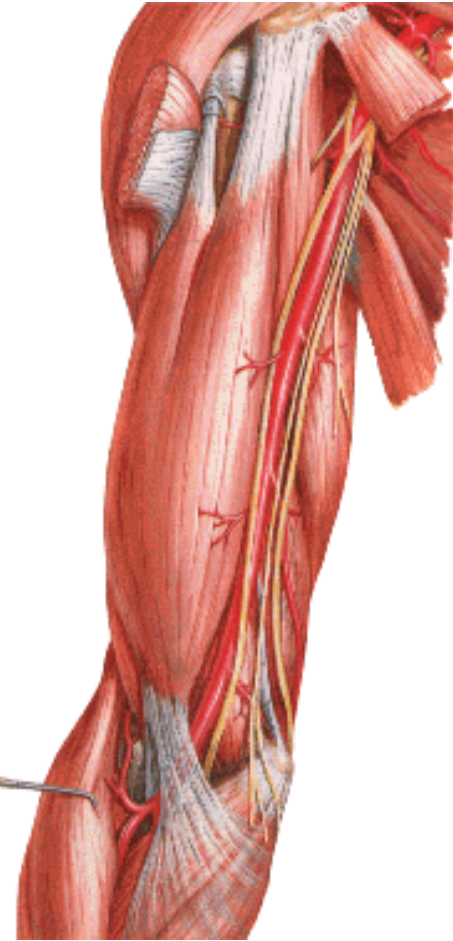
### Fasciculus posterior

Nervus axillaris  
Nervus radialis



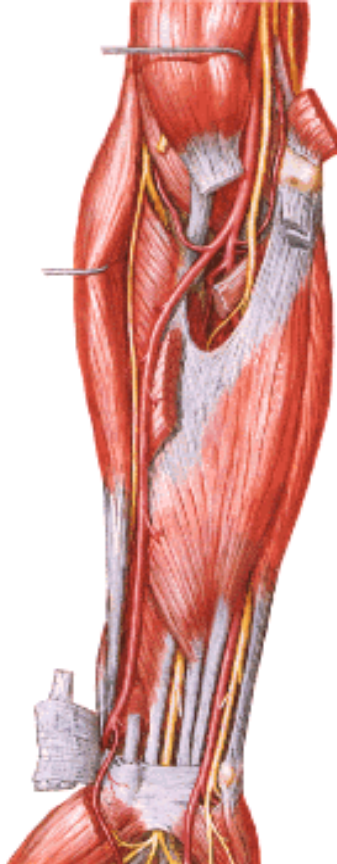
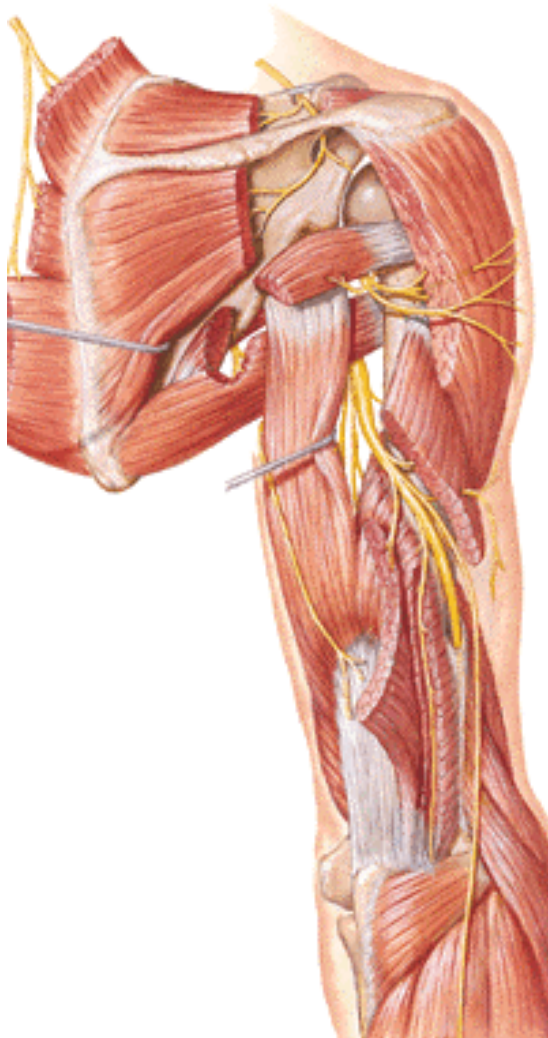
# Fasciculus lateralis a medialis (pars infraclavicularis plexus brachialis)

n. musculocutaneus a radix lat. n. mediani X radix medialis med. n. mediani; n. ulnaris; n. cutaneus  
brachii et antebrachii medialis





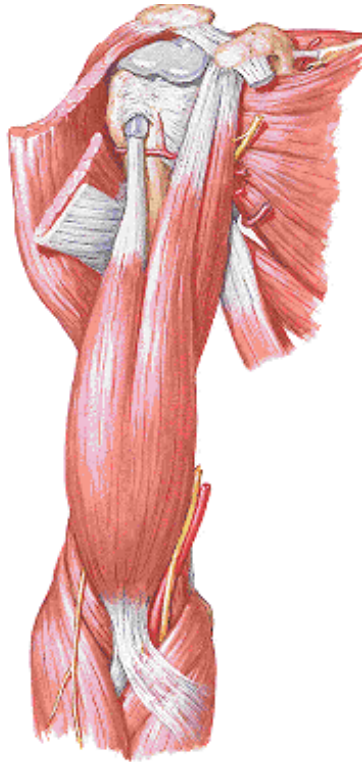
# **FASCICULUS POSTERIOR** (pars infraclavicularis plexus brachialis) (n. axillaris et n. radialis)





# Art. humeri

## Pohyby



### **Abdukce:**

m. deltoideus, m. supraspinatus,  
caput longum m. bicipitis brachii

### **Addukce:**

m. pectoralis major- dolní část  
m. latissimus dorsi  
m. teres major  
m. deltoideus (klavik. a spinální část)  
m. subscapularis  
caput longum m. tricipitis brachii  
caput breve m. bicipitis brachii  
m. coracobrachialis

### **Ventrální flexe (předpažení):**

m. deltoideus (klavik. část)  
m. pectoralis major (klavik. část)  
m. coracobrachialis  
caput breve m. bicipitis brachii

### **Dorzální flexe (zapažení, extenze):**

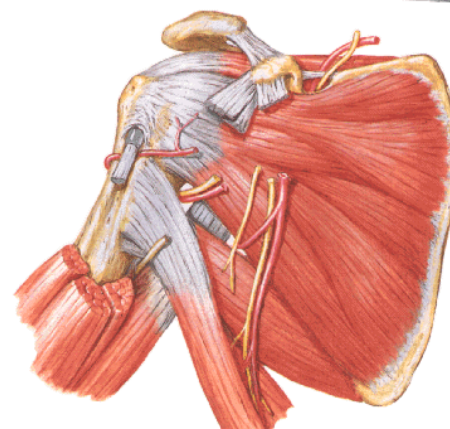
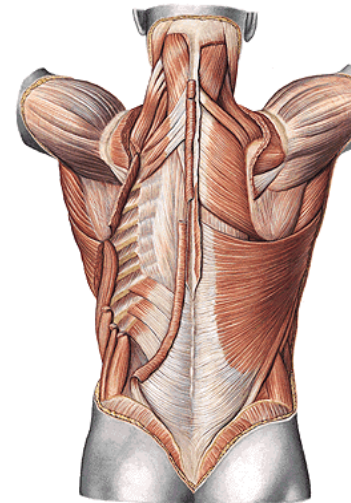
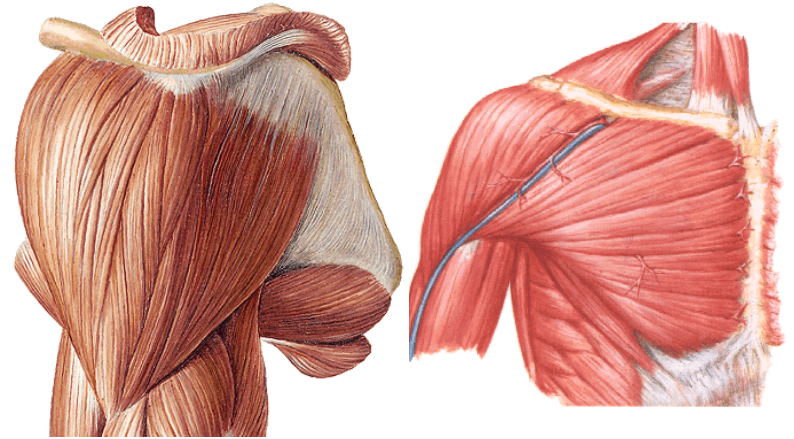
m. deltoideus – spinální část  
m. latissimus dorsi  
m. teres major

### **Supinace:**

m. infraspinatus  
m. supraspinatus  
m. teres minor  
m. deltoideus - spinální část

### **Pronace:**

m. subscapularis  
m. pectoralis major  
m. deltoideus (klavik. část)  
m. teres major  
m. latissimus dorsi



# Svaly předloktí (*musculi antebrachii*)

## Ventrální skupina (inervace n. medianus\* a n. ulnaris\*\*)

**Ventrální skupina - povrchová vrstva**

*Musculus pronator teres\**

*Musculus flexor carpi radialis\**

*Musculus palmaris longus\**

*Musculus flexor carpi ulnaris\*\**

**Ventrální skupina - prostřední vrstva**

*Musculus flexor digitorum superficialis\**

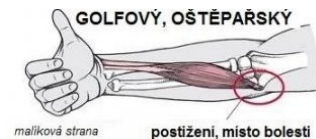
**Ventrální skupina - hluboká vrstva**

*Musculus flexor digitorum profundus* \* a \*\*

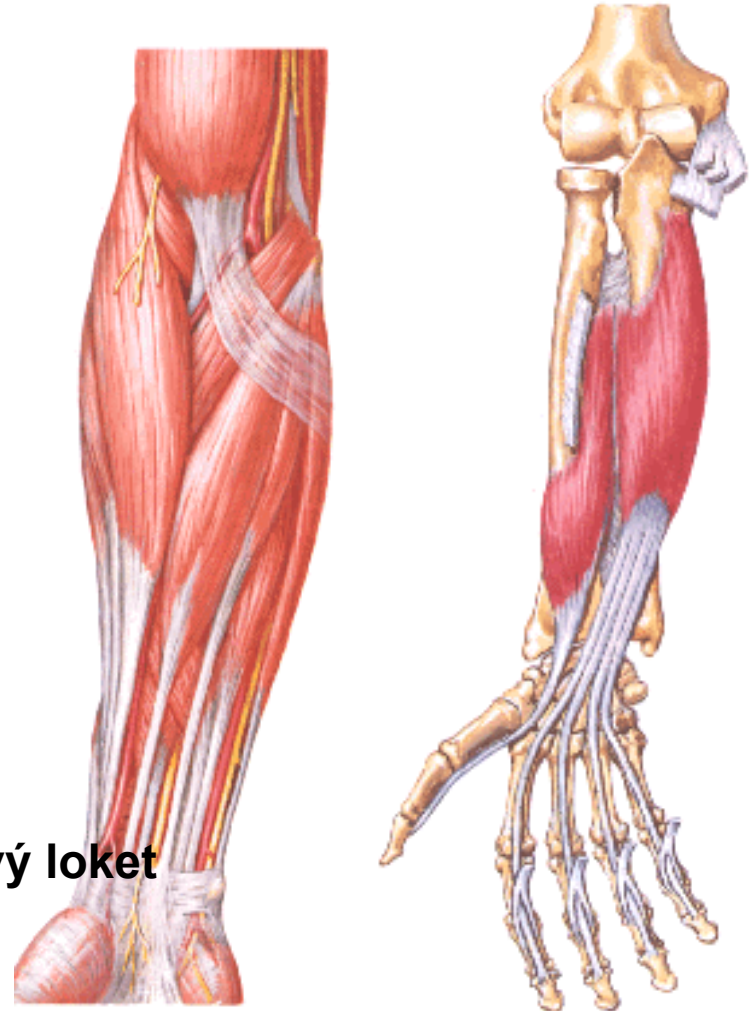
*Musculus flexor pollicis longus\**

*Musculus pronator quadratus\**

**Epicondylitis ulnaris humeri – oštěpaři, golfový loket**



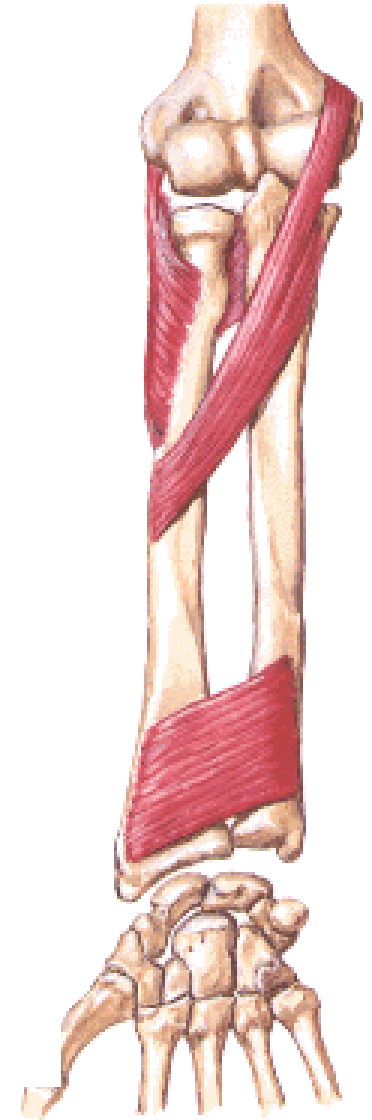
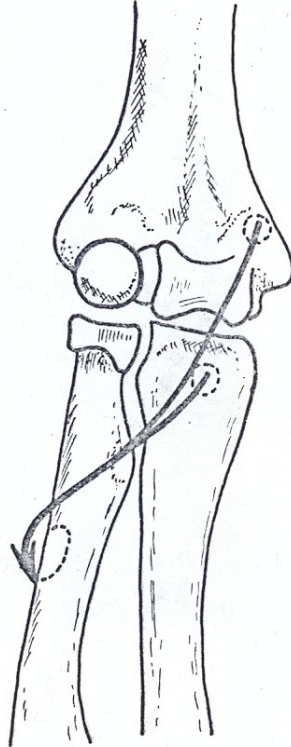
postižení, místo bolesti



# Musculus pronator teres

**o:** *caput commune*  
*caput ulnare*

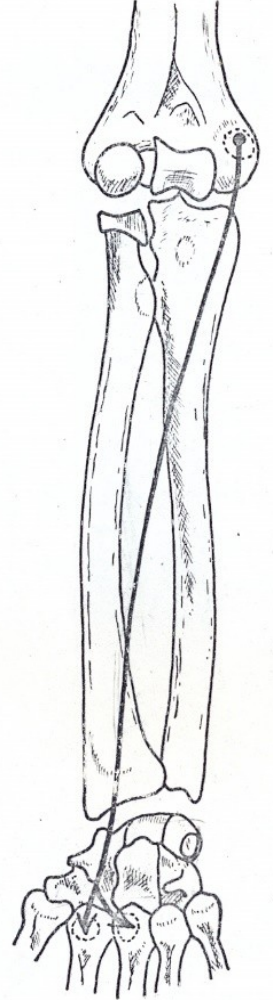
**f:** flexe a pronace předloktí





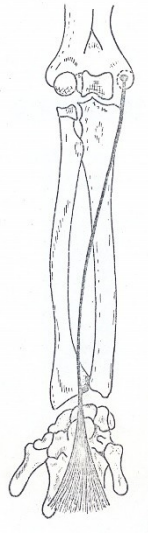
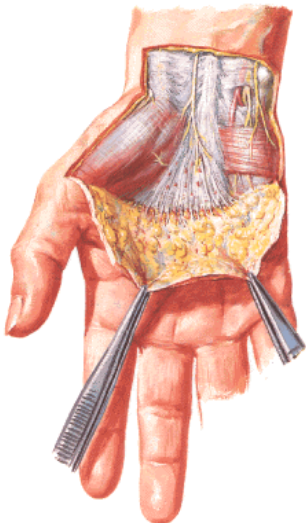
## Musculus flexor carpi radialis

**f:** flexe předloktí a ruky  
radiální dukce



## Musculus palmaris longus

**f:** flexe zápěstí a lokte



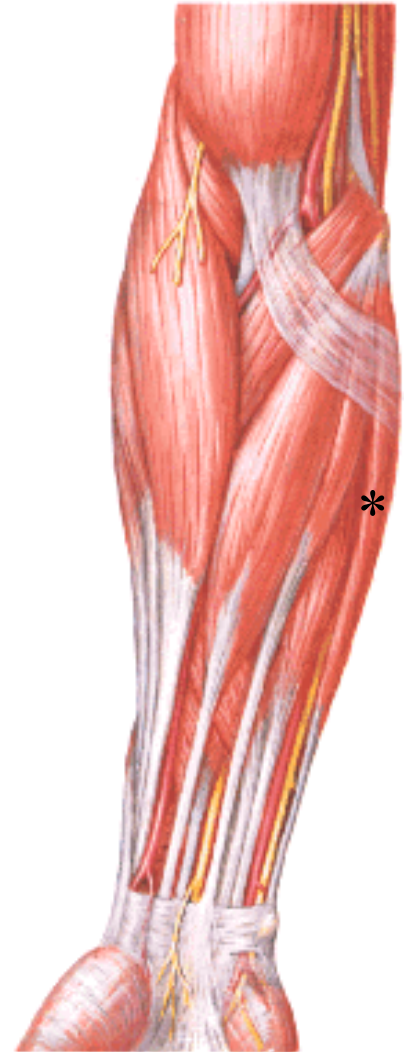
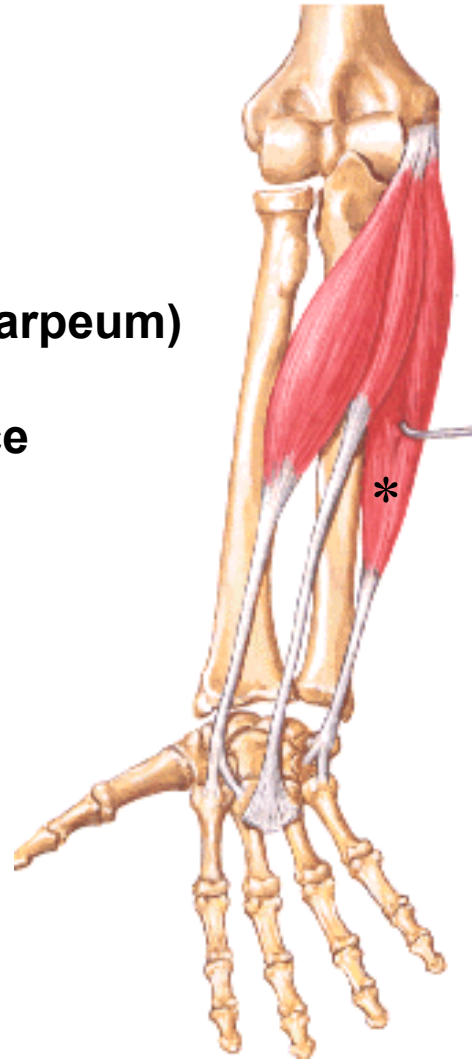


# Musculus flexor carpi ulnaris

**o:** caput commune  
caput ulnare

**i:** os pisiforme  
(lig. pisohamatum a lig. pisometacarpeum)

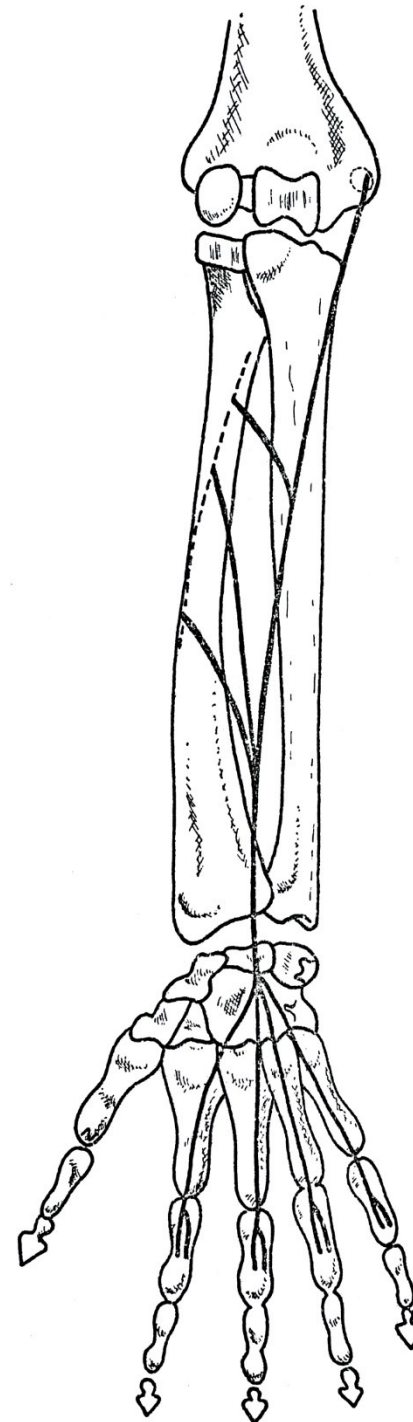
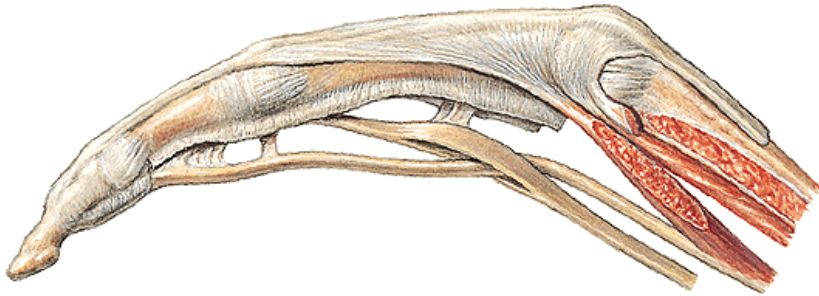
**f:** flexe předloktí a ruky, ulnární dukce



# Musculus flexor digitorum superficialis

**i:** okraje prostředního článku 2.-5. prstu  
(*chiasma tendinum*)

**f:** flexe předloktí, ruky a prstů



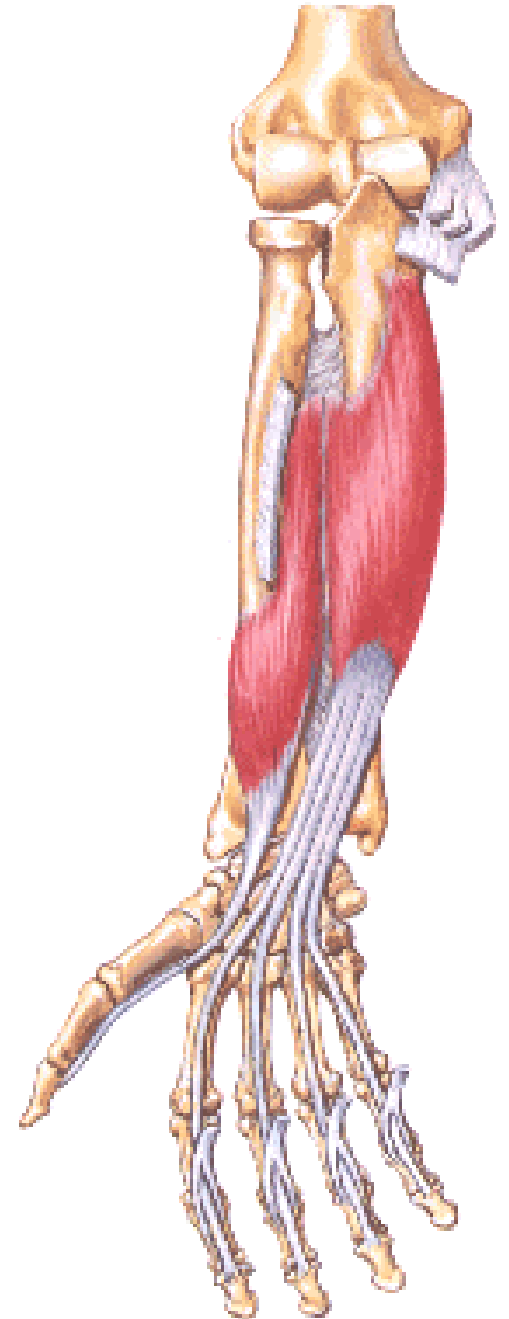
## Musculus flexor digitorum profundus

**f:** flexe ruky a prstů

**i:** 2. a 3. prst - *n. medianus*, 4. – 5. prst – *n. ulnaris*

## Musculus flexor pollicis longus

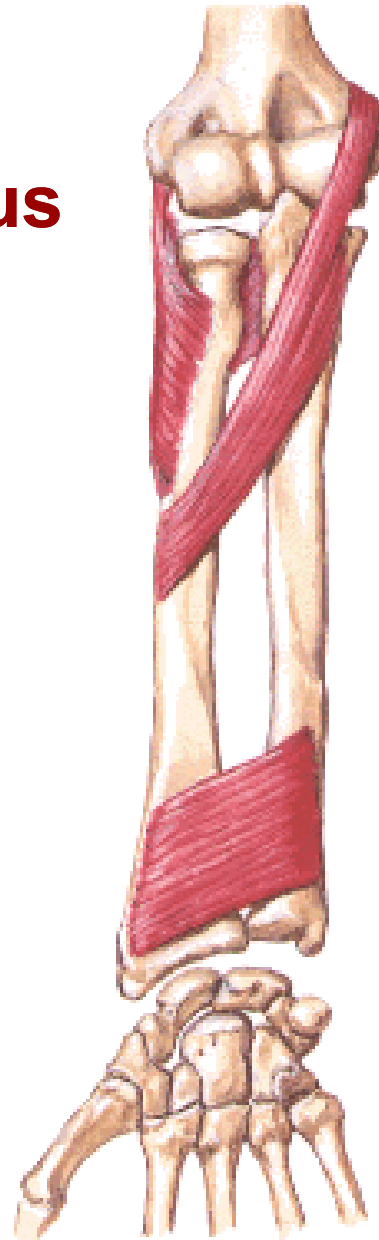
**f:** flexe ruky a palce





# Musculus pronator quadratus

**f:** pronace předloktí



# Šlachové pochvy flexorů

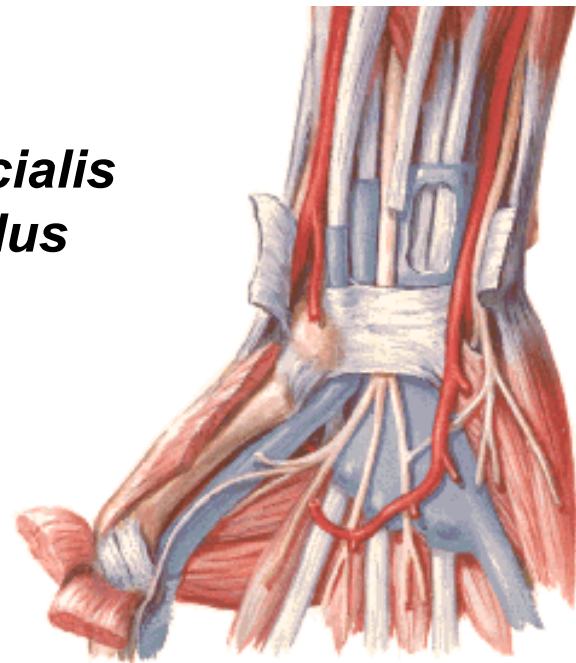
*Eminentia carpi radialis et ulnaris*  
*Retinaculum flexorum (lig. carpi transversum)*

## *Canalis carpi:*

**Radiální část:** *m. flexor carpi radialis*

**Ulnární část:** *m. flexor pollicis longus*  
*m. flexor digitorum superficialis*  
*m. flexor digitorum profundus*

***nervus medianus***



# Vaginae digitorum

Vaginae **fibrosae** digitorum manus  
(pars anularis, pars cruciformis)



Vaginae **synoviales** digitorum manus

Vagina synovialis tendinis m. flexoris carpi radialis

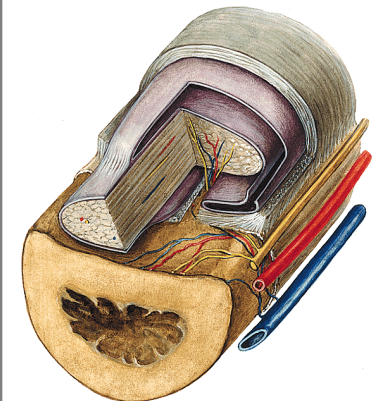
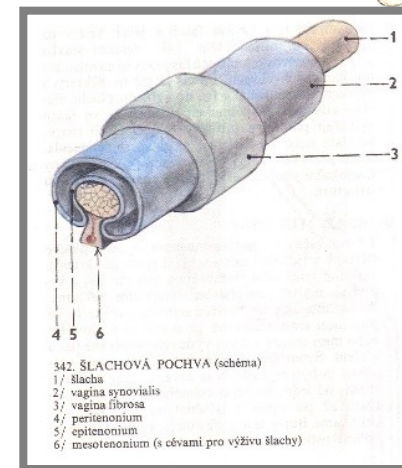
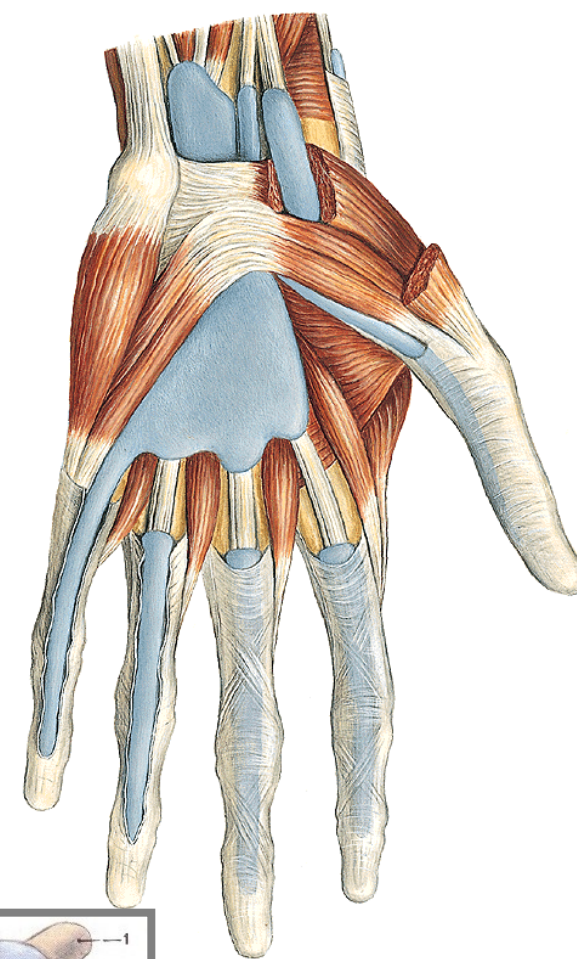
Vagina synovialis tendinis m. flexoris pollicis longi

Vagina synovialis communis musculorum flexorum

Vaginae **synoviales** = prostory podél šlach, uzavřené  
trubice obsahující synovii

Stratum fibrosum – možnost komprese šlach, cév,  
nervů v osteofibrozních kanálcích

Stratum synoviale – dva listy spojeny mesotendineem





# Laterální skupina předloketních svalů

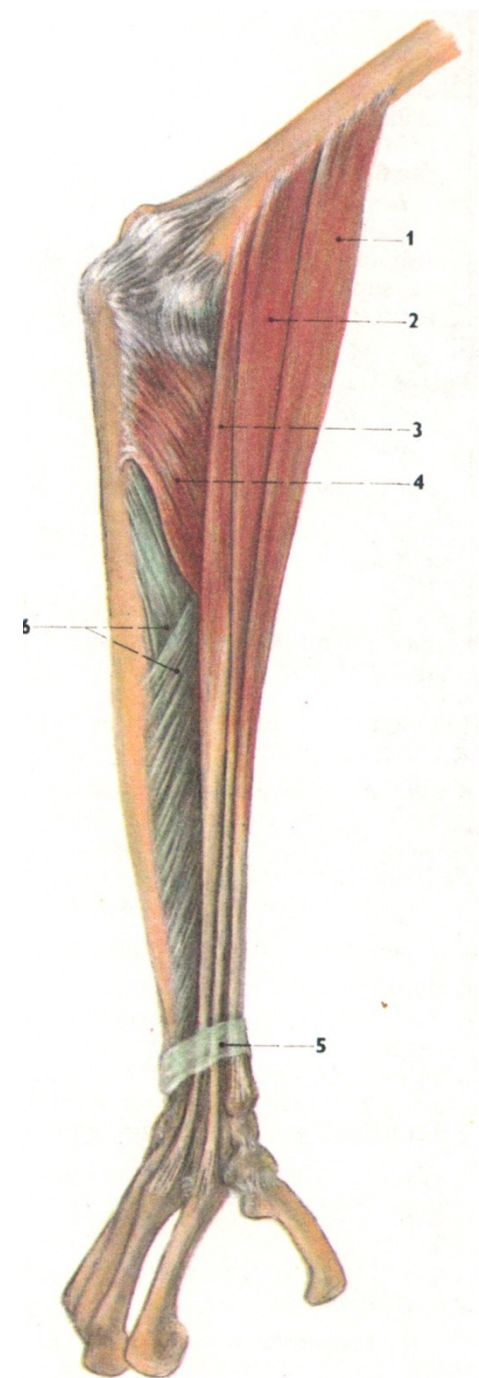
Inervace: *n. radialis*

***Musculus brachioradialis*** (1)

***Musculus extensor carpi radialis longus*** (2)

***Musculus extensor carpi radialis brevis*** (3)

***Musculus supinator*** (4)



# Laterální skupina svalů předloketních

## **Musculus brachioradialis**

**f: flexe**

supinace předloktí (jen při extenzi)

pronace předloktí (jen při flexi)

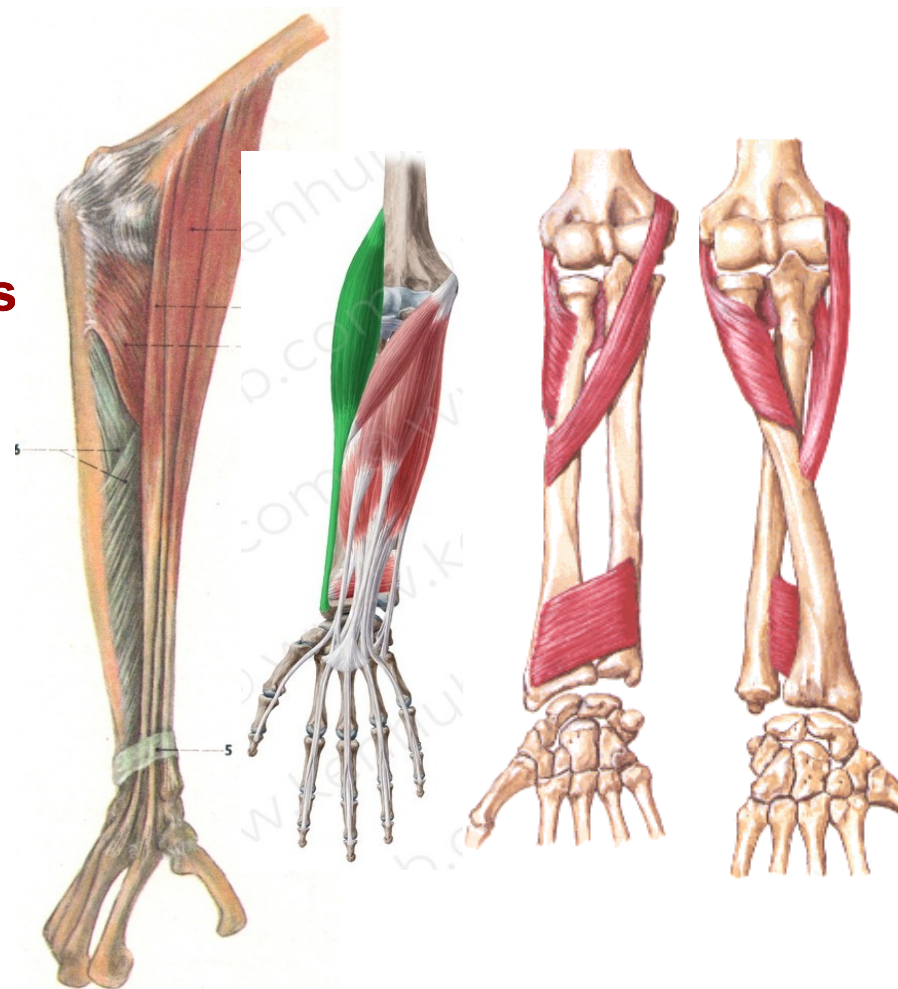
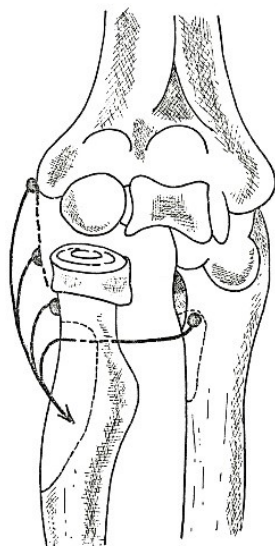
## **Musculus extensor carpi radialis longus**

**f: extenze a radiální dukce ruky**

## **Musculus extensor carpi radialis brevis**

**f: extenze a radiální dukce ruky**

## **Musculus supinator**



# Dorsální skupina předloketních svalů

inervace n. radialis

## Povrchová vrstva:

*Musculus extensor digitorum*

*Musculus extensor digiti minimi*

*Musculus extensor carpi ulnaris*

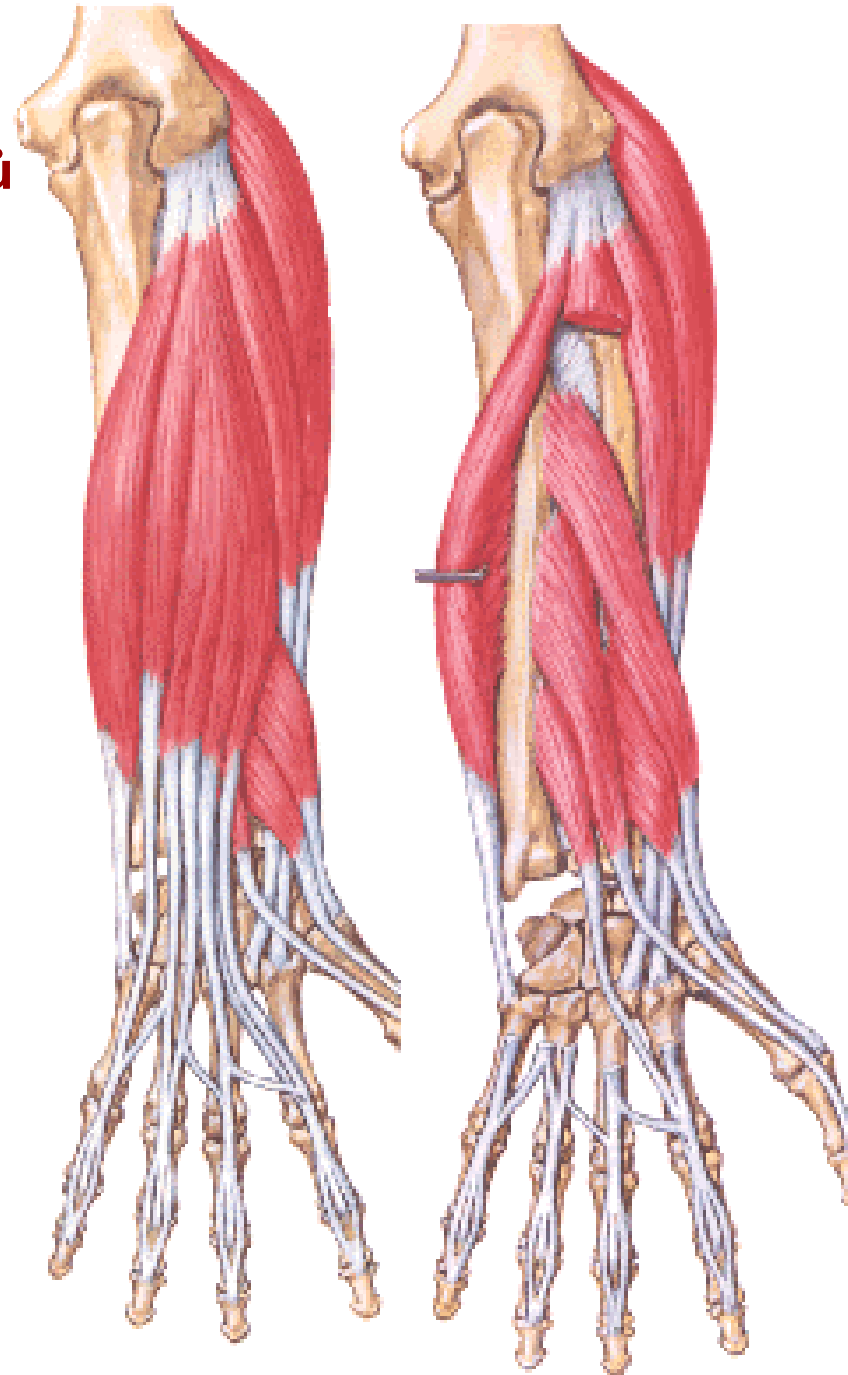
## Hluboká vrstva:

*Musculus abductor pollicis longus*

*Musculus extensor pollicis brevis*

*Musculus extensor pollicis longus*

*Musculus extensor indicis*





# Zadní skupina svalů předloketních - povrchová vrstva

## Musculus extensor digitorum

Epicondylitis radialis – tenis, házená, volejbal, stolní tenis, běh na lyžích

**f:** extenze ruky a prstů



## Musculus extensor digiti minimi

**f:** extenze ruky a 5. prstu

## Musculus extensor carpi ulnaris

**f:** extenze ruky a ulnární dukce



# Zadní skupina svalů předloketních - hluboká vrstva

## **Musculus abductor pollicis longus**

f: abdukce palce

## **Musculus extensor pollicis brevis**

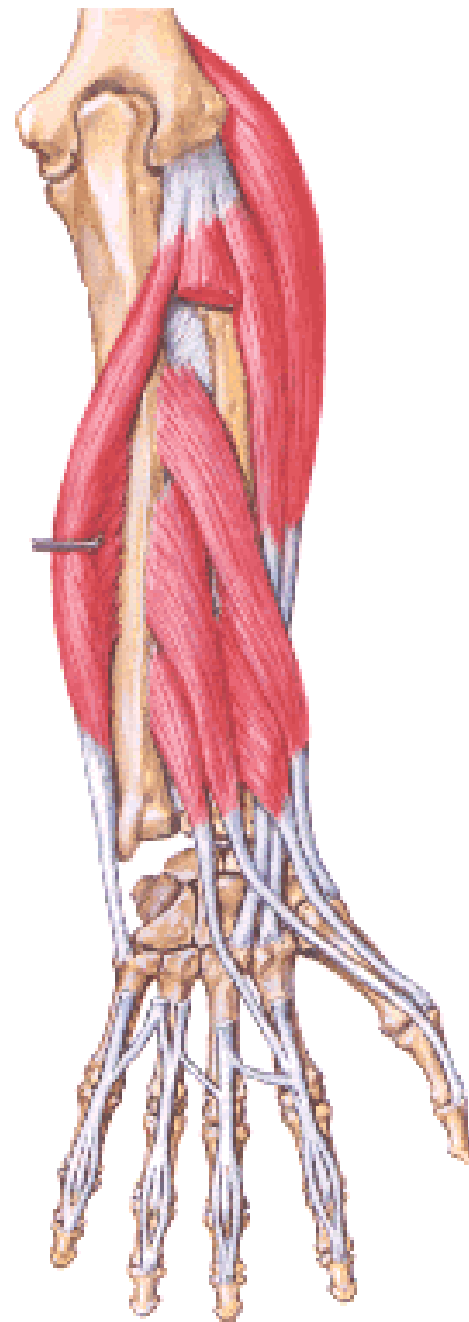
f: extenze a abdukce palce

## **Musculus extensor pollicis longus**

f: extenze palce

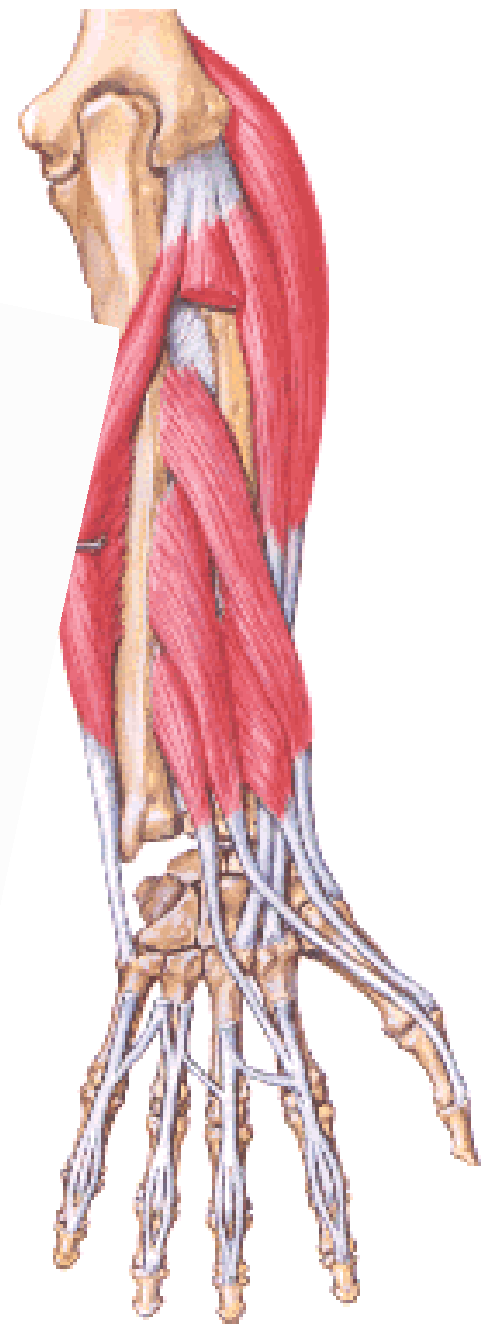
## **Musculus extensor indicis**

f: extenze 2. prstu



# Fossa (foveola) radialis

mezi šlachami *m. extensor pollicis brevis* a *longus*  
(*arteria radialis* obtáčí bázi 1. metakarpu)

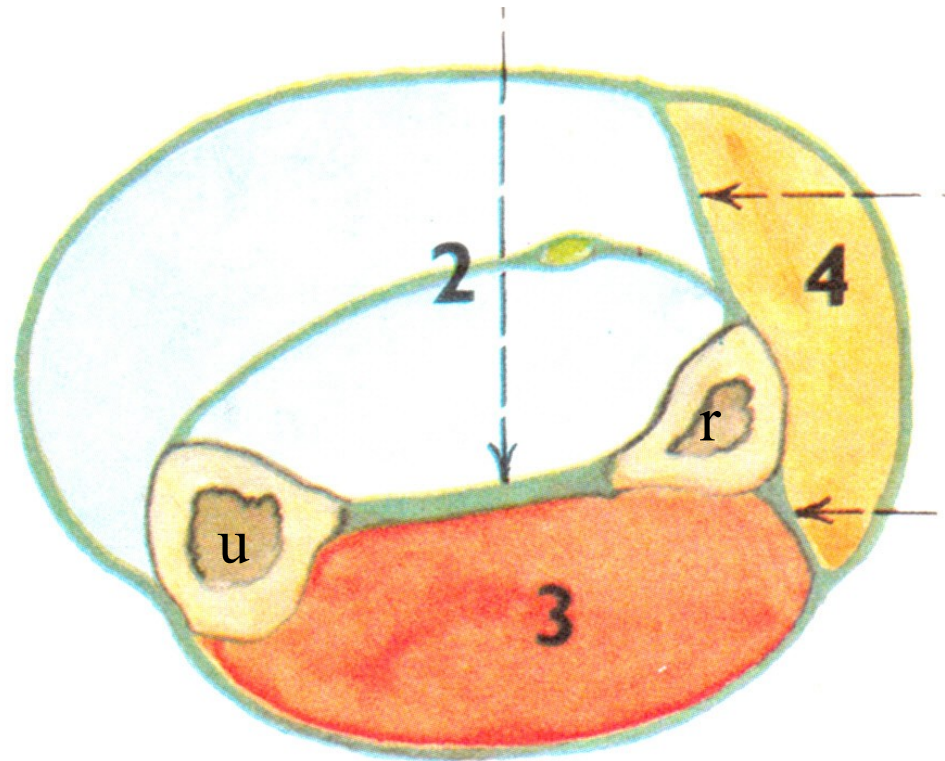




## Fascia antebrachii

*aponeurosis m. bicipitis brachii*

*retinaculum flexorum, retinaculum extensorum*

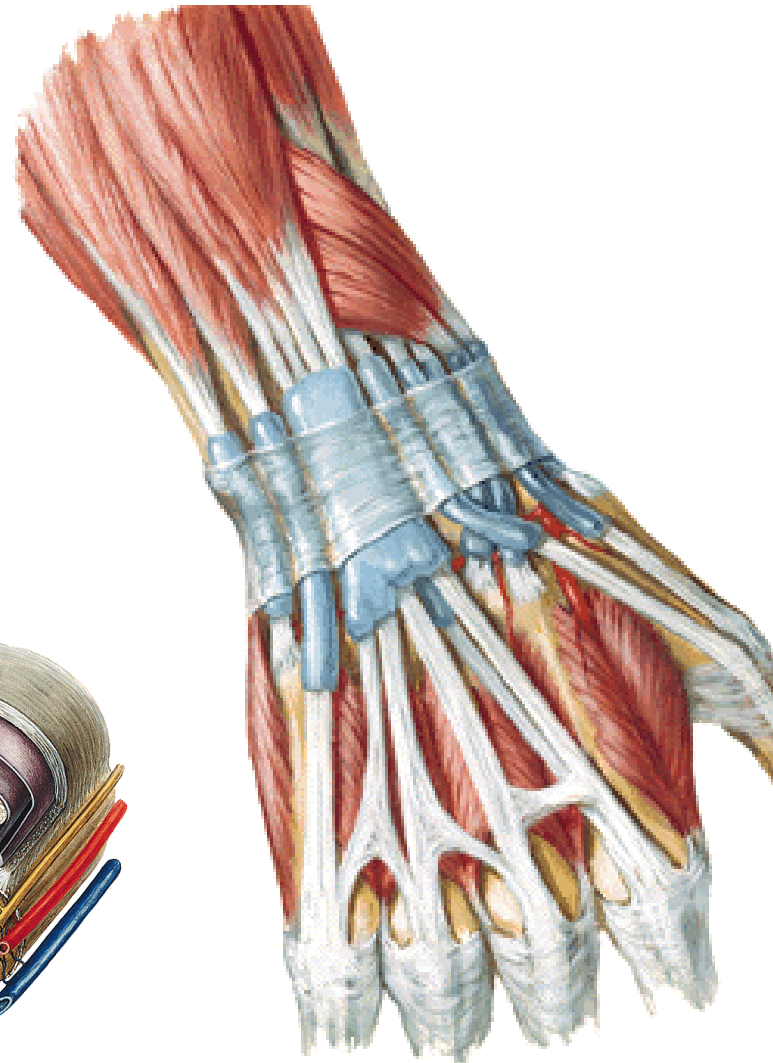
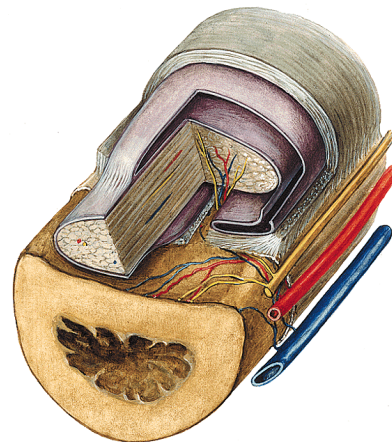


# Šlachové a synoviální pochvy extenzorů (dorsální a laterální skupina předloketních svalů)

***Retinaculum extensorum*** (radius - os triquetrum a os hamatum)

Z radiální strany:

- 1. *m. abductor pollicis longus***  
***m. extensor pollicis brevis***
- 2. *m. extensor carpi radialis longus et brevis***
- 3. *m. extensor pollicis longus***
- 4. *m. extensor indicis***  
***m. extensor digitorum communis***
- 5. *m. extensor digiti minimi***
- 6. *m. extensor carpi ulnaris***



# Articulatio cubiti

## flexe:

m. brachialis  
m. brachioradialis  
m. biceps brachii  
m. pronator teres  
m. flexor carpi radialis  
m. palmaris longus

## extenze:

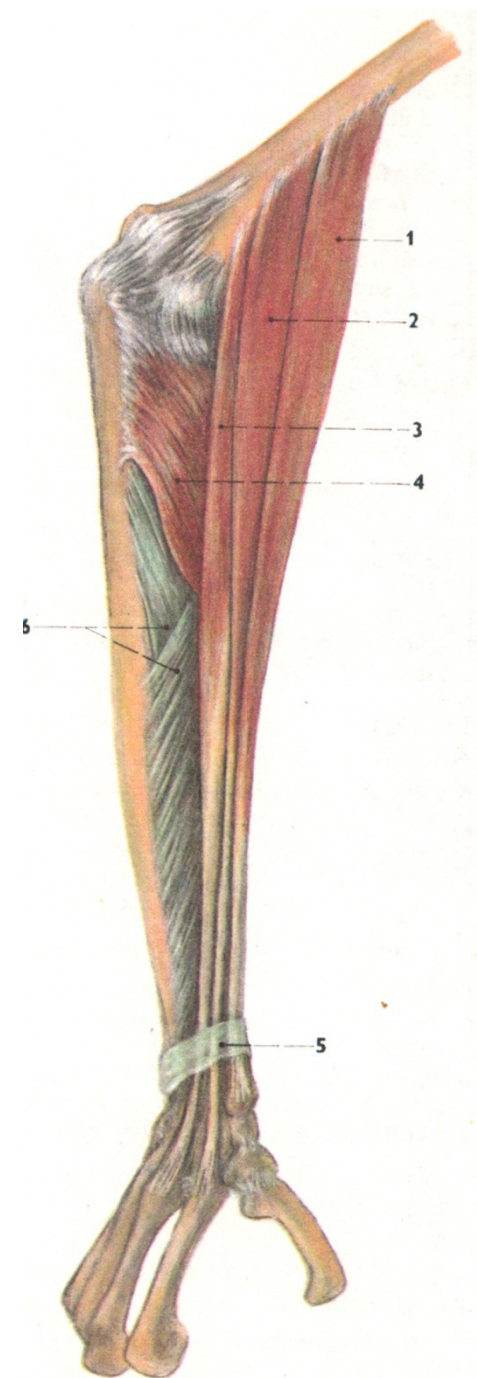
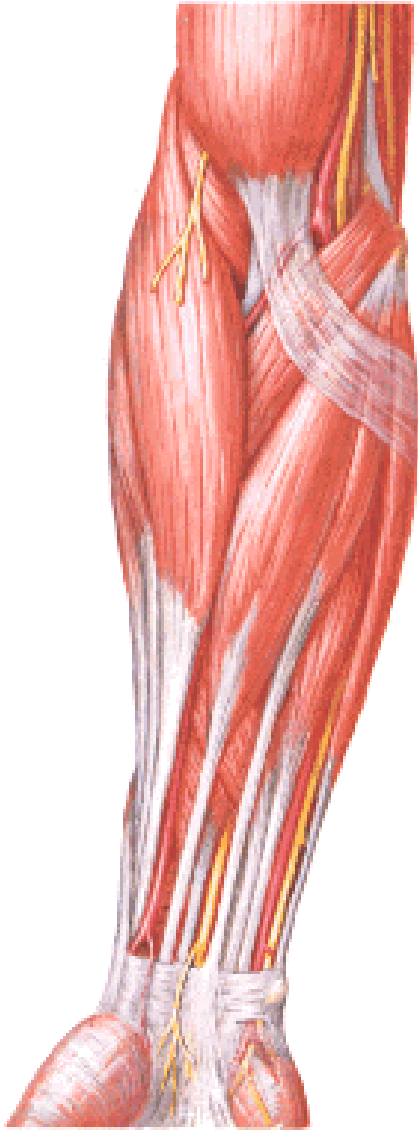
m. triceps brachii  
m. anconeus  
m. extensor carpi radialis longus a brevis

## supinace:

m. supinator  
m. biceps brachii  
m. brachioradialis (jen při extenzi)

## Pronace:

m. pronator teres  
m. pronator quadratus  
m. flexor carpi radialis  
m. brachioradialis (jen při flexi)



# Art. radiocarpea a art. intercarpeae

## Palmární flexe:

- m. flexor carpi radialis a ulnaris
- m. palmaris longus
- m. flexor digitorum superficialis a profundus
- m. flexor pollicis longus

## Dorzální flexe (extenze):

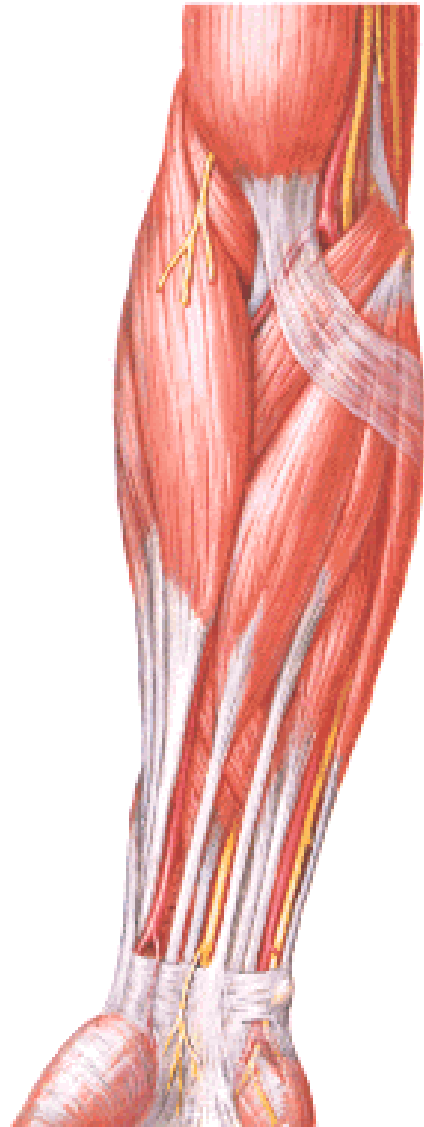
- m. extensor carpi radialis longus a brevis
- m. extensor carpi ulnaris
- m. extensor pollicis longus a brevis
- m. extensor digitorum
- m. extensor indicis
- m. extensor digiti minimi

## Radiální dukce:

- m. extensor carpi radialis longus a brevis
- + m. flexor carpi radialis
- m. abductor pollicis longus
- m. extensor pollicis brevis

## Ulnární dukce:

- m. flexor carpi ulnaris
- m. extensor carpi ulnaris





# Musculi manus (svaly ruky)

## Svaly thenaru:

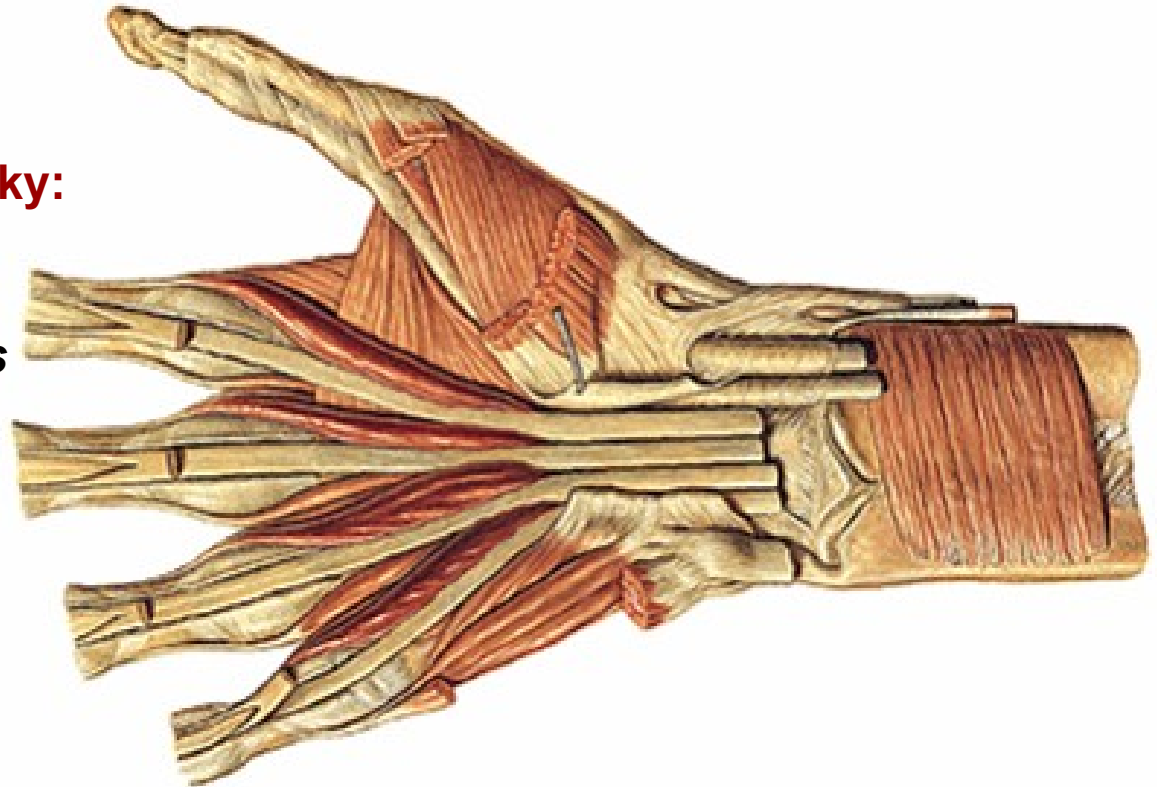
*Musculus abductor pollicis brevis*  
*Musculus flexor pollicis brevis*  
*Musculus opponens pollicis*  
*Musculus adductor pollicis*

## Svaly hypothenaru:

*Musculus palmaris brevis*  
*Musculus abductor digiti minimi*  
*Musculus flexor digiti minimi*  
*Musculus opponens digiti minimi*

## Prostřední skupina svalů ruky:

*Musculi interossei dorsales*  
*Musculi interossei palmares*  
*Musculi lumbricales*



# Svaly thenaru

## **Musculus abductor pollicis brevis**

**f:** abdukce palce

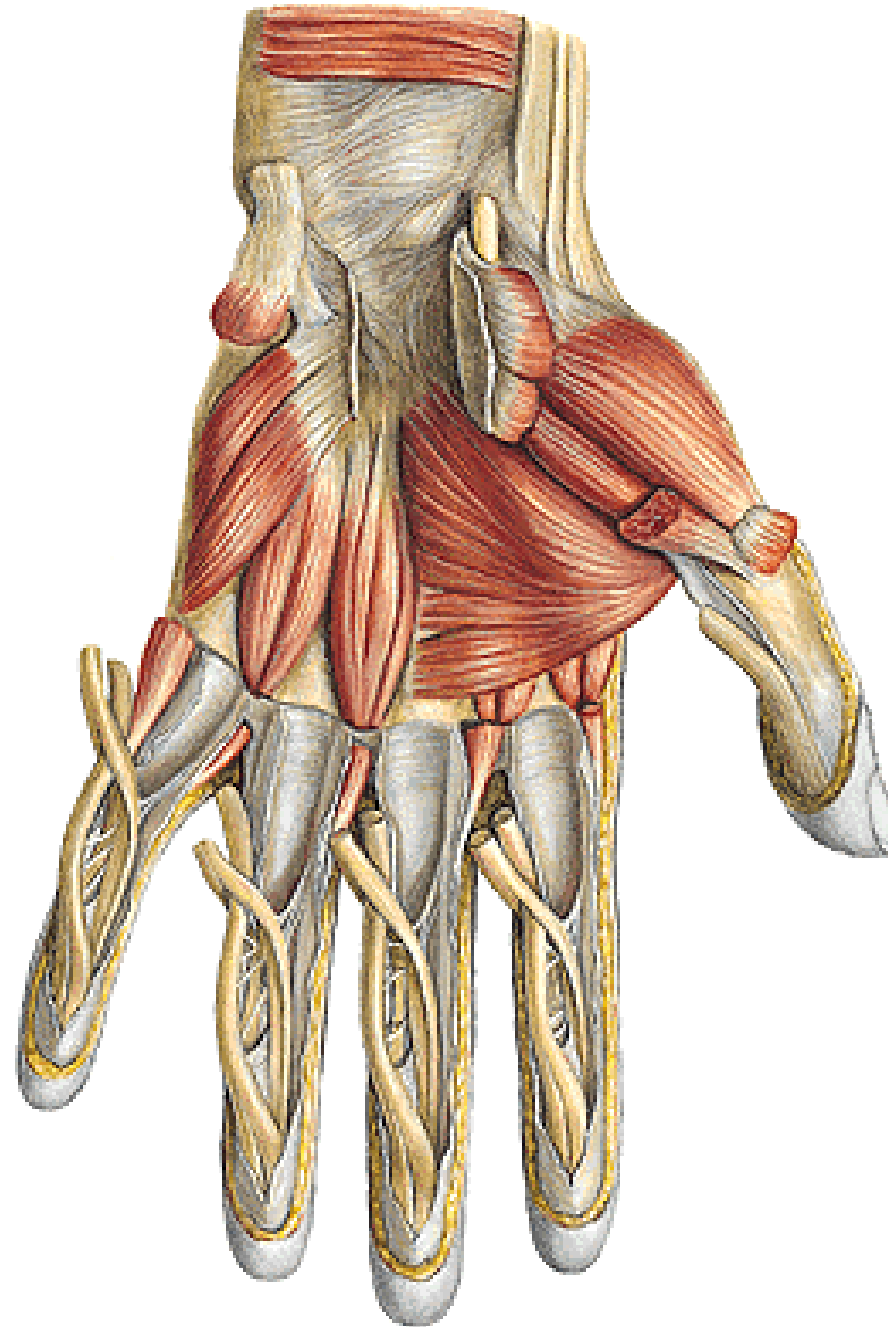
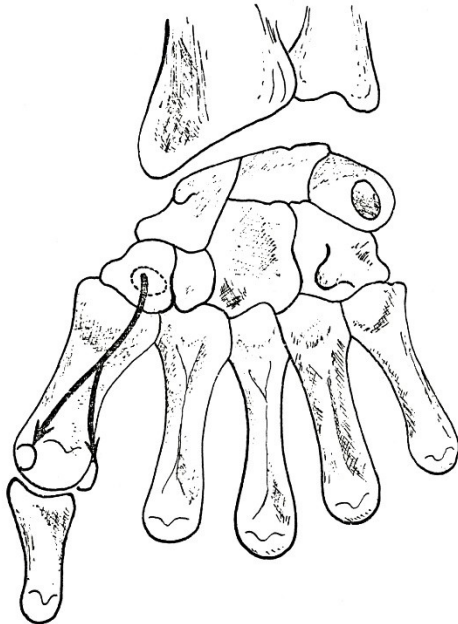
**i:** *n. medianus*

## **Musculus flexor pollicis brevis**

**o:** *caput superficiale et profundum*

**f:** flexe a opozice palce

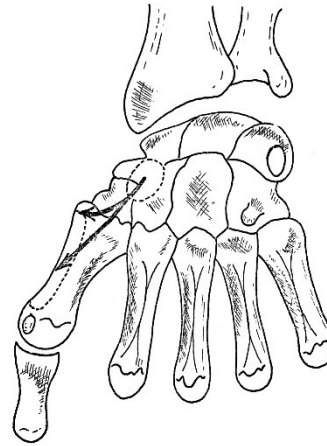
**i:** *n. medianus, n. ulnaris*



## **Musculus opponens pollicis**

**f:** opozice palce

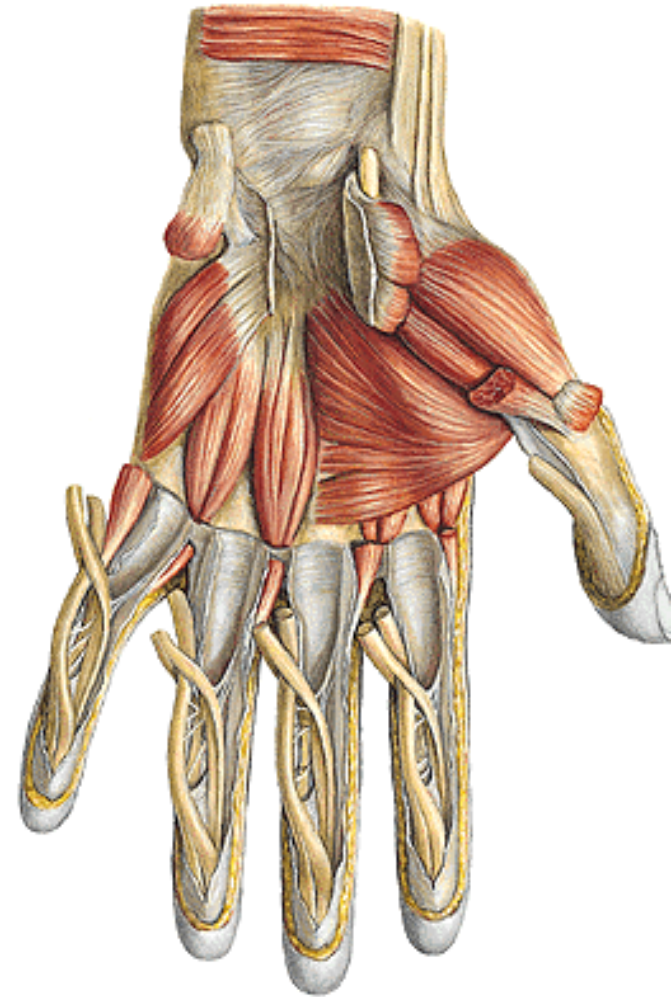
**i:** *n. medianus*



## **Musculus adductor pollicis**

**o:** *caput obliquum*  
*caput transversum*

**i:** *n. ulnaris*

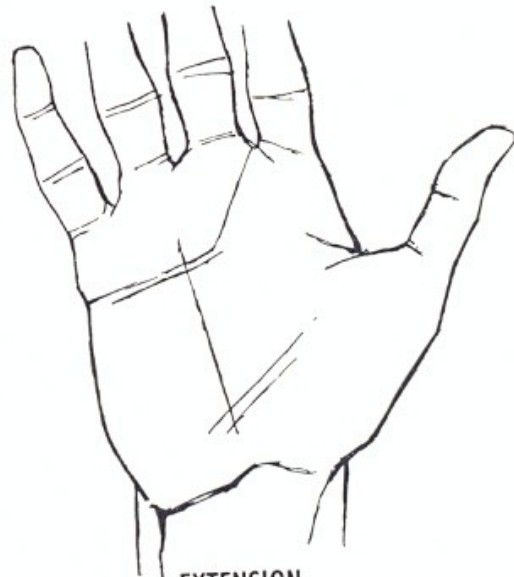




**FLEXION**



**ABDUCTION**



**EXTENSION**



**OPPOSITION**

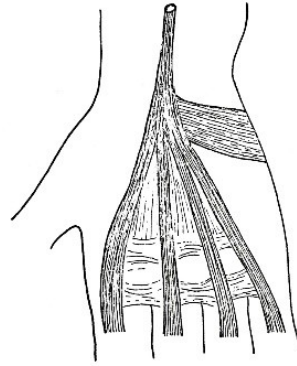


# Svaly hypothenaru

inervace n. ulnaris

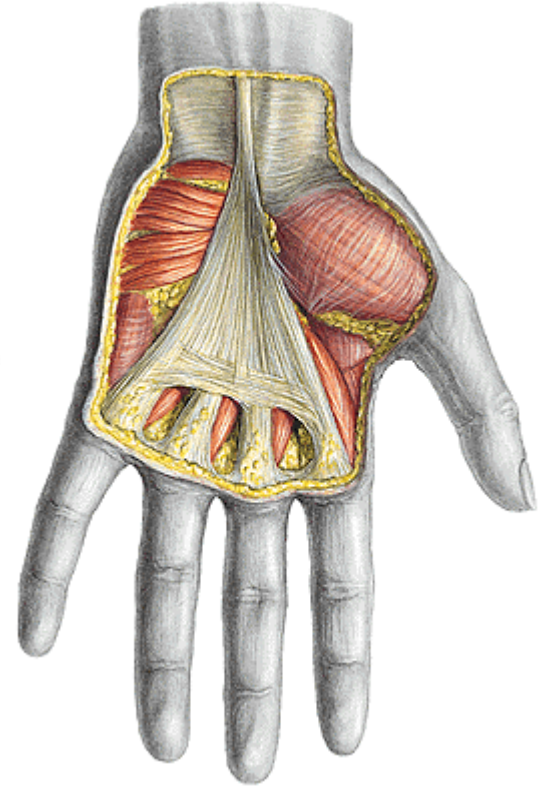
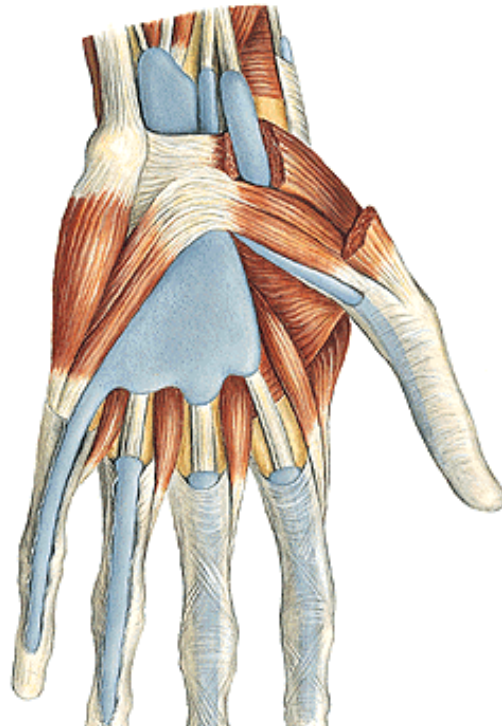
## Musculus palmaris brevis

f: příčné kožní rýhy



## Musculus abductor digiti minimi

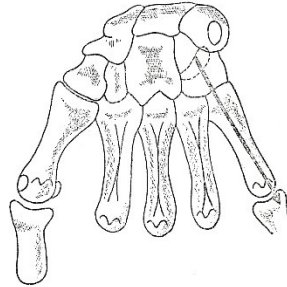
f: abdukce 5. prstu



# Svaly hypothenaru

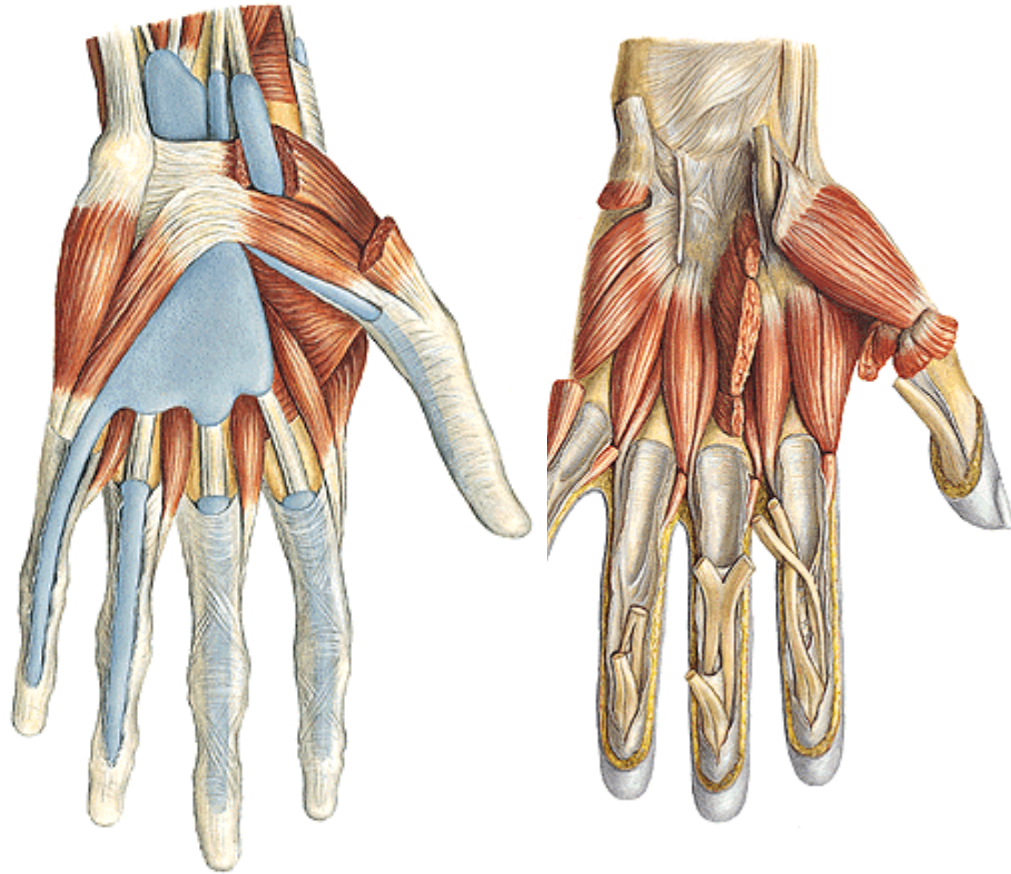
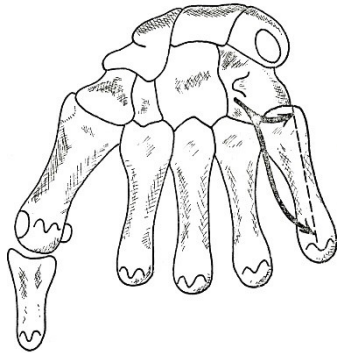
## Musculus flexor digiti minimi

f: flexe 5. prstu



## Musculus opponens digiti minimi

f: opozice 5. prstu

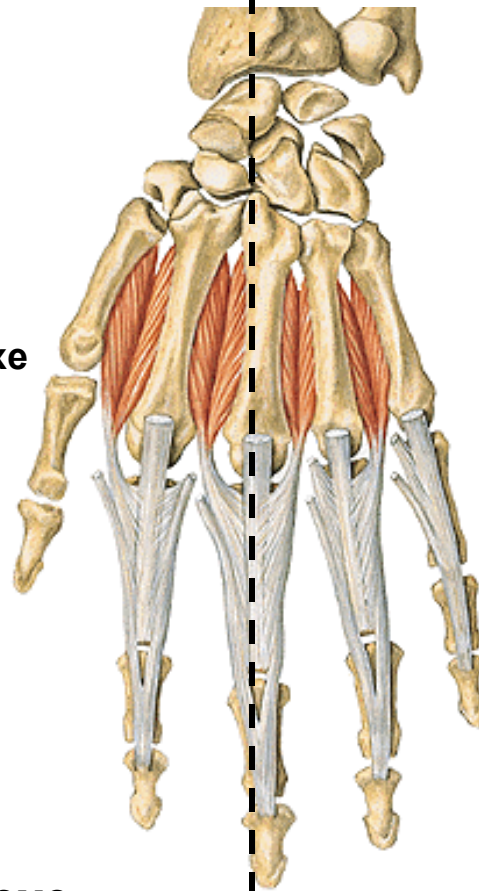
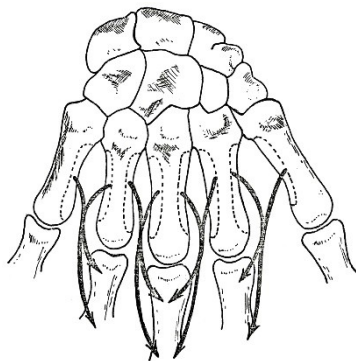


# Prostřední skupina svalů ruky

inervace n. ulnaris

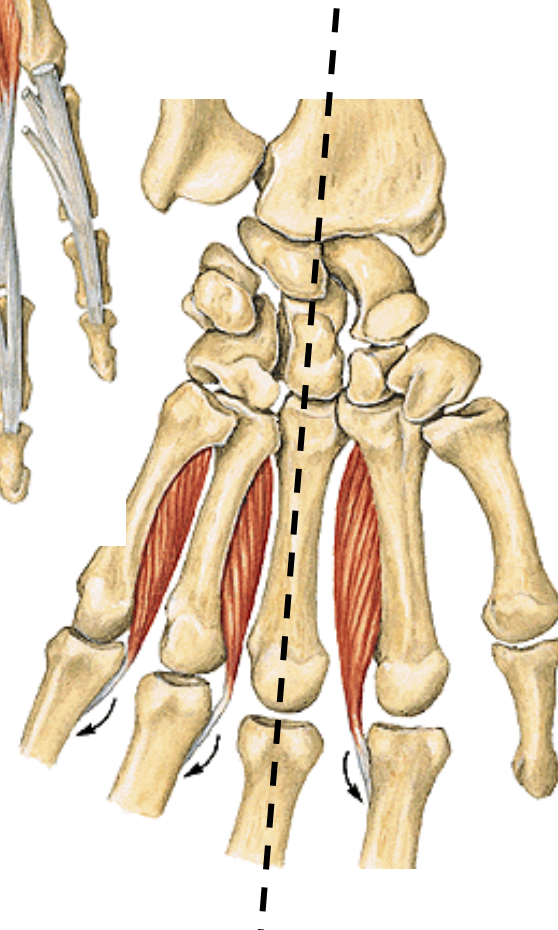
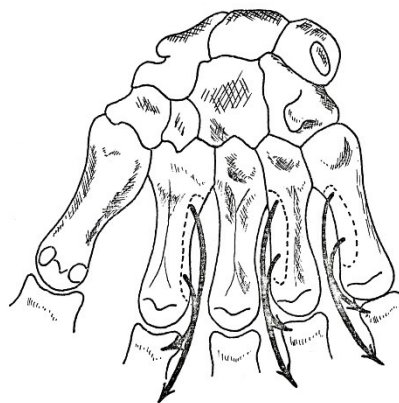
## Musculi interossei dorsales I. až IV.

f: abdukce prstů od osy (osa jde 3. prstem), flexe



## Musculi interossei palmares I. až III.

f: addukce prstů k ose (osa jde 3. prstem), flexe





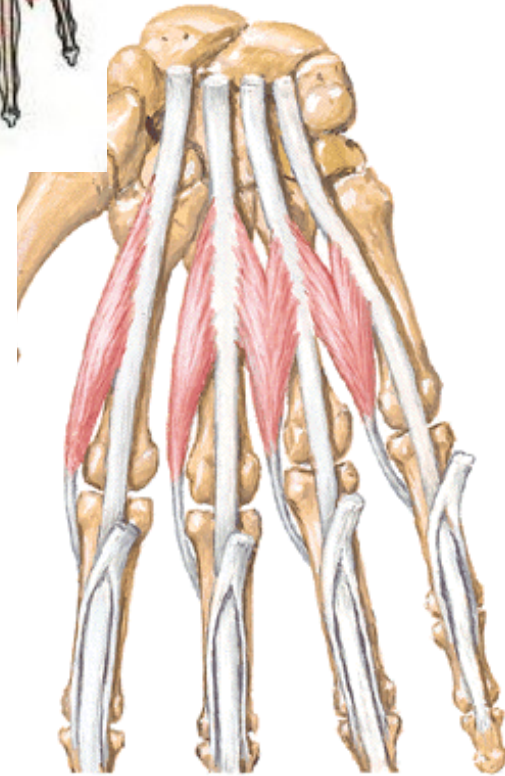
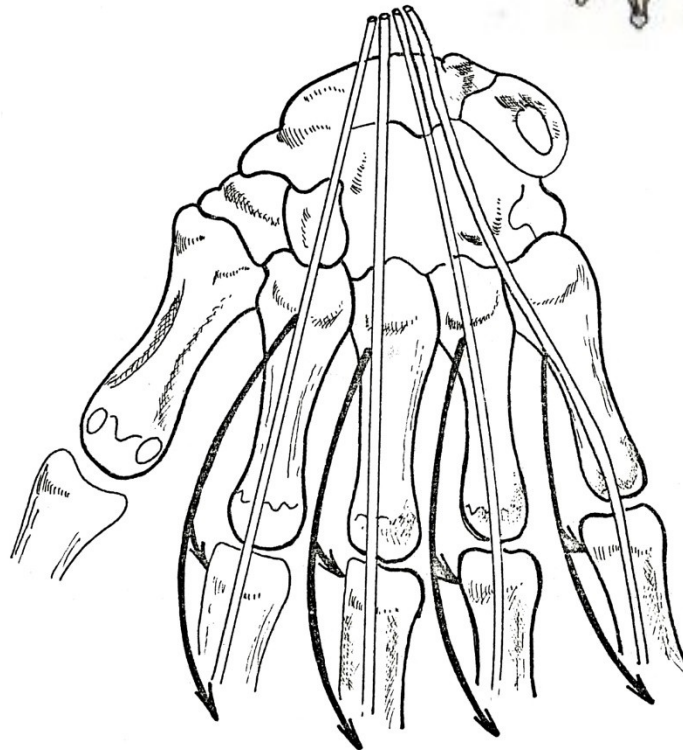
# Musculi lumbricales I. až IV.

**o:**

**i:**

**f:** flexe prstů, naklonění  
prstů radiálním směrem

**i:** 1. a 2. *m. lumbricalis*  
- *n. medianus*  
3. a 4. *m. lumbricalis*  
- *n. ulnaris*





# Fasciae manus

*Fascia dorsalis manus superficialis* 1

*Fascia dorsalis manus intertendinea* (pokrývá šlachy extenzorů) 2

*Fascia dorsalis manus interossea* 3

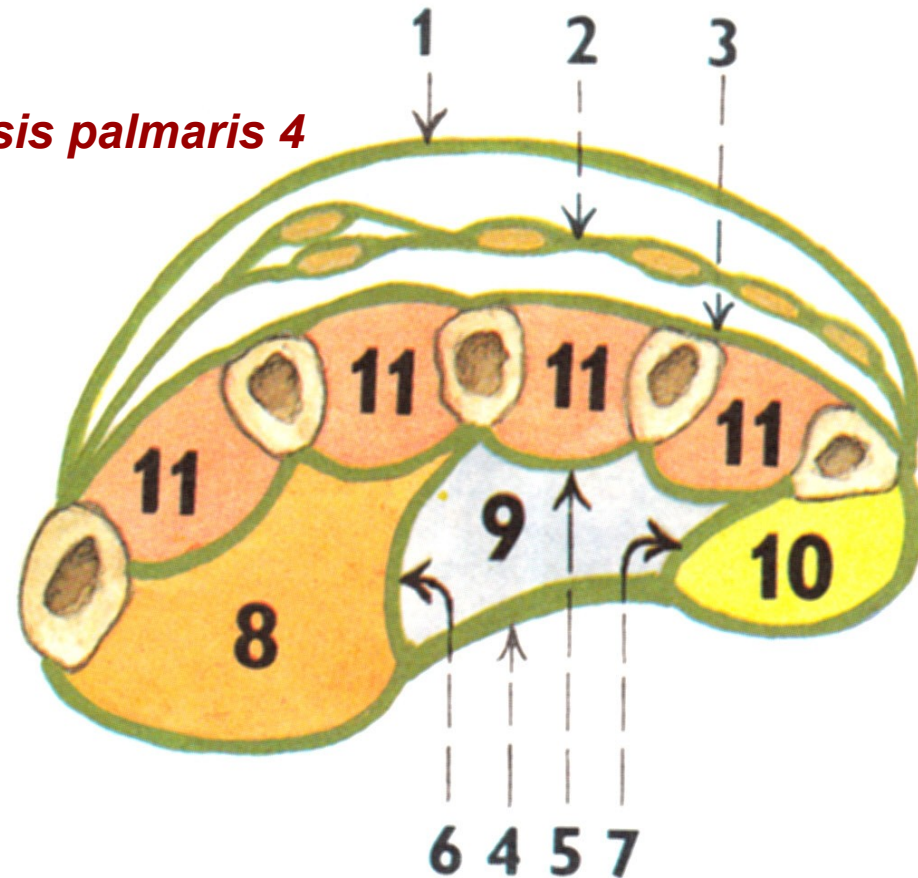
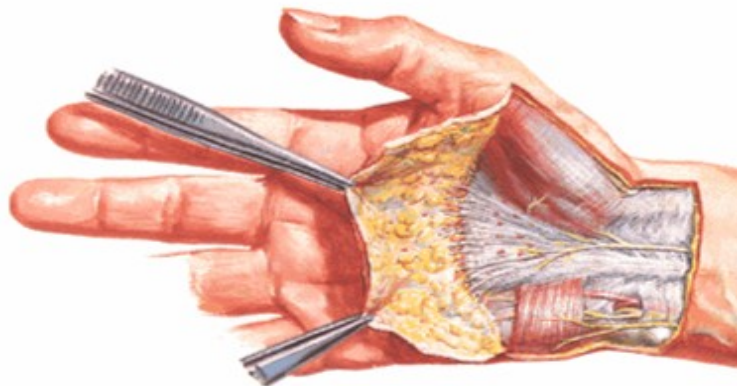
*Facia palmaris superficialis* – ***aponeurosis palmaris*** 4

*Fascia palmaris interossea* 5

*Septum palmare radiale* (3. metakarp) 6

*Septum palmare ulnare* (5. metakarp) 7

*Spatium palmare radiale* 8, *ulnare* 10,  
*Medium* 9



# **Pro přednášku byly použity obrázky z publikací:**

**Moore, K. L. (1992):** Clinical oriented anatomy. Third edition.  
Williams&Wilkins, A Waverly Company.

**Gilroy, A. M. et all. (2009):** Atlas of Anatomy. Thieme New York, Stuttgart.

**Putz, R. (2008):**  
**Atlas of Human Anatomy Sobotta. Elsevier Books.**

**Platzer, W., Kahle, W., Leonhardt H. (1992):**  
**Locomotor system. Georg Thieme Verlag, Stuttgart,  
New York, 4th edition.**

**Čihák, R. (1987):** Anatomie 1. Avicenum, Zdravotnické nakladatelství.