



# Tendon Transfers

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# Principles of Tendon Transfer

- ✓ Supple - address contracture
- ✓ Satisfactory bed
- ✓ Sensibility
  
- ✓ Strength - of donor must be adequate
- ✓ Size (or amplitude) of motion
- ✓ Straight line of pull
- ✓ Single tendon, single function
- ✓ Synergism
- ✓ Sacrifice (is the donor expendable)

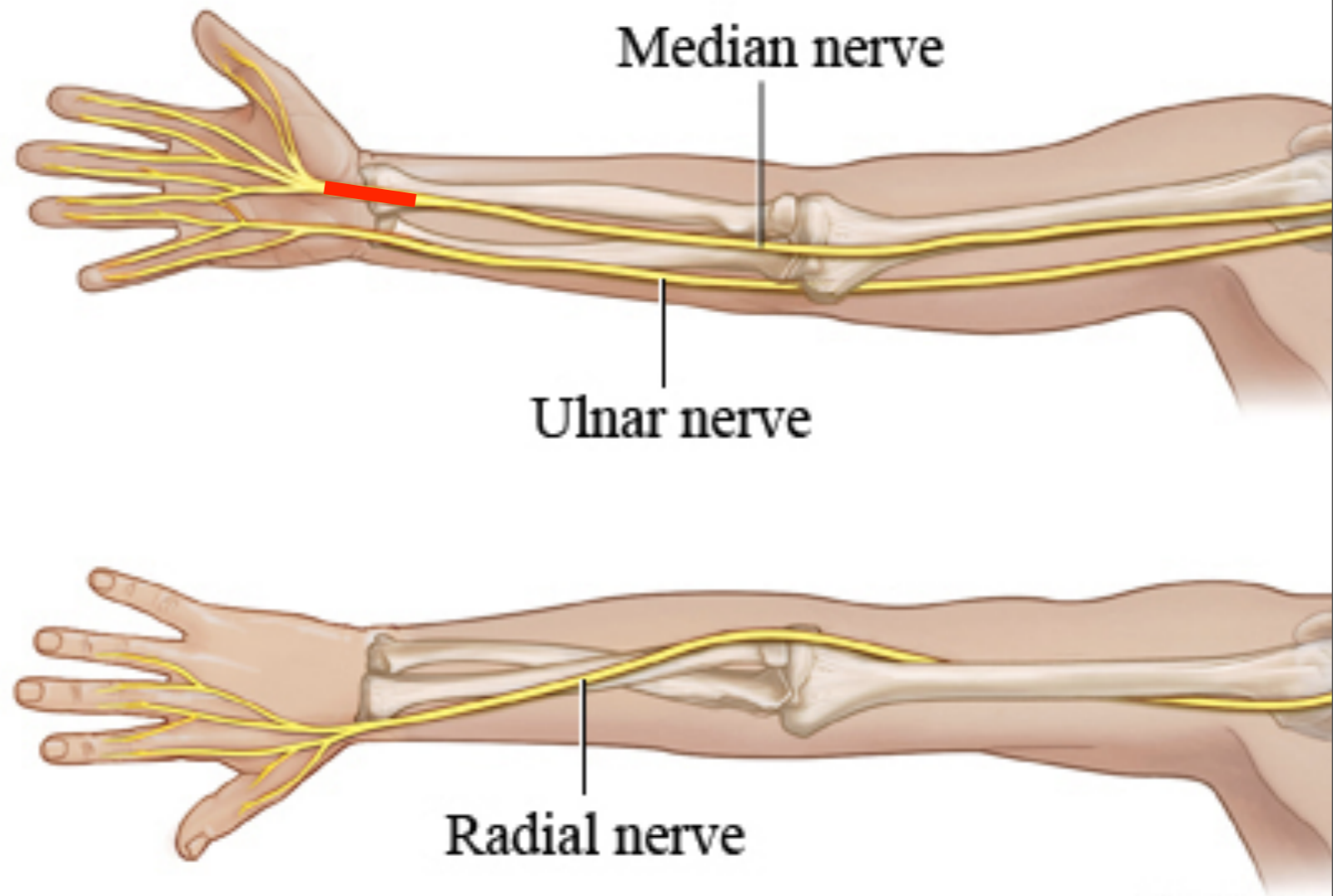
# Assessment and Treatment

- ✔ What is missing?
- ✔ What function needs to be restored?
- ✔ What is available?

# Low Median Nerve Palsy

## What is Missing?

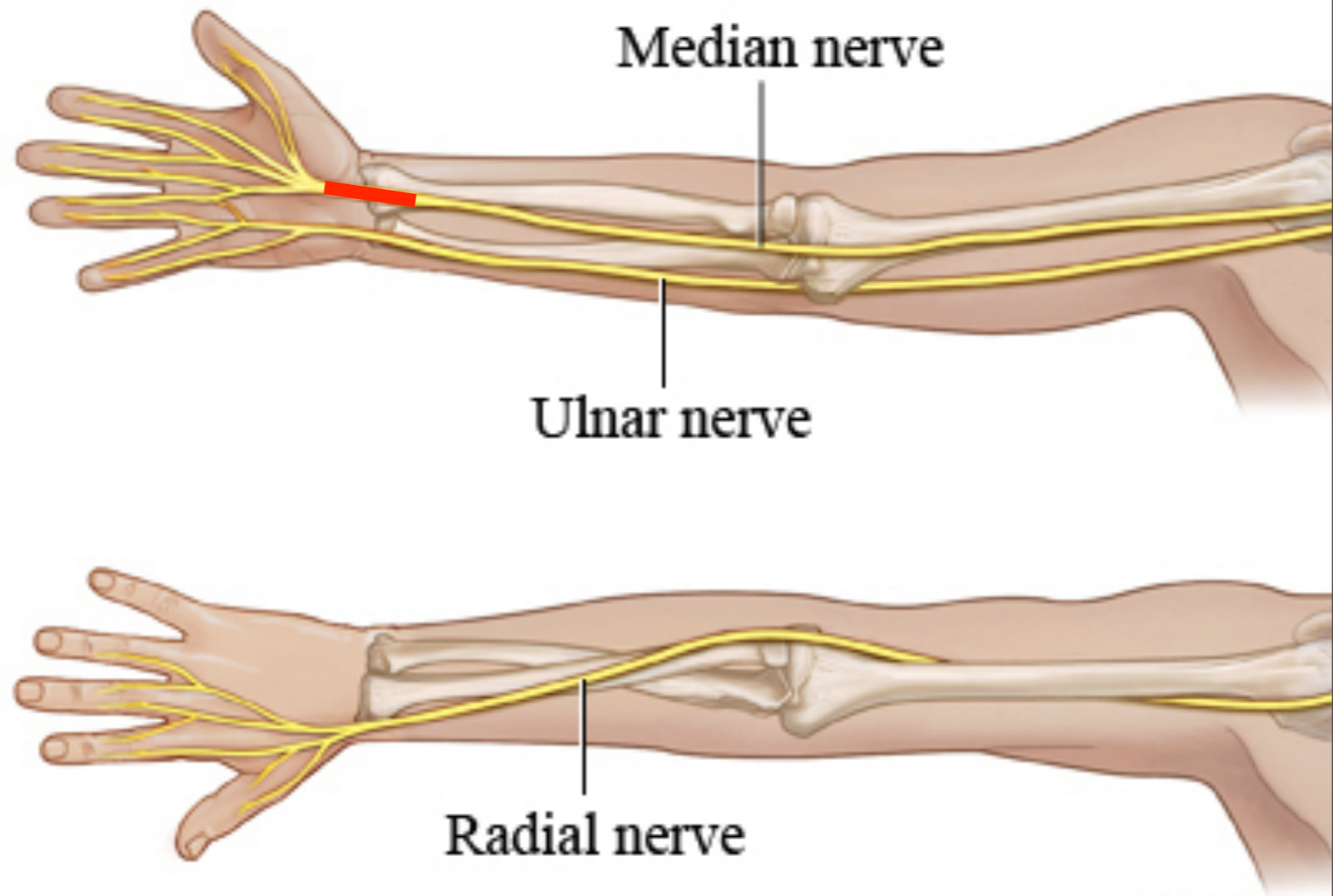
- APB
- OppP
- FPB



# Low Median Nerve Palsy

✔ What function needs to be restored?

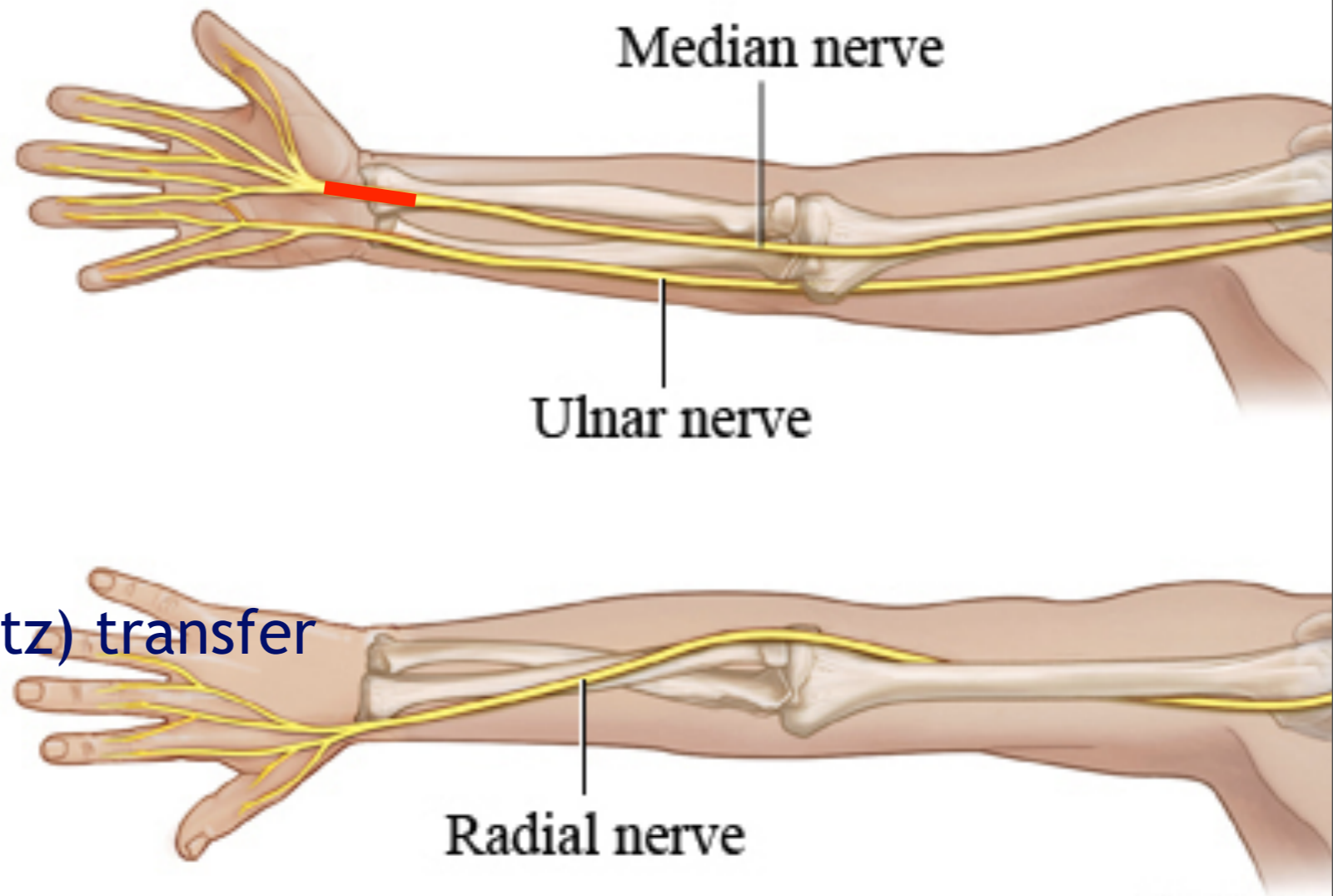
✔ Thumb Opposition



# Low Median Nerve Palsy

## Transfer Options:

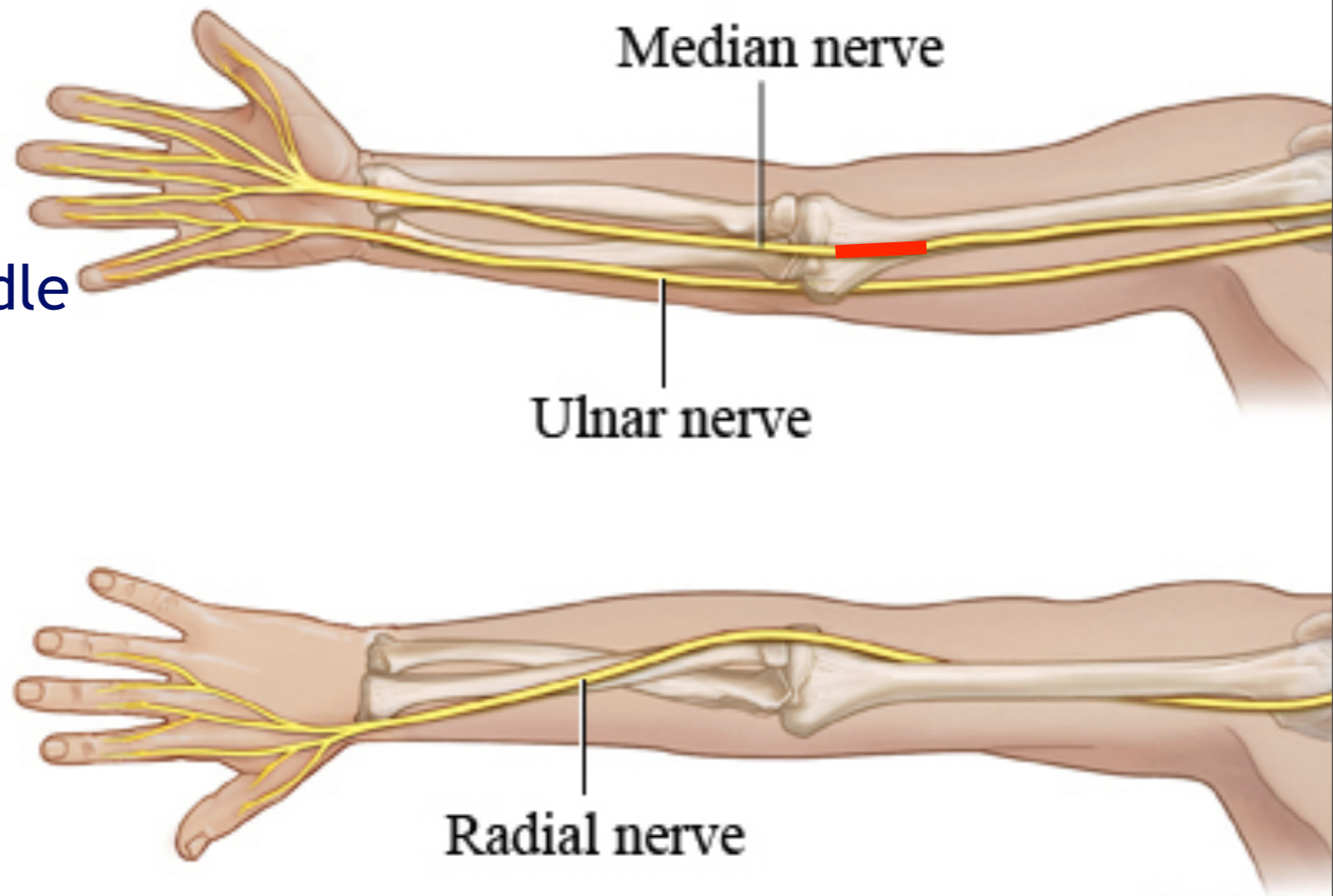
- ✓ FDS opponensplasty
- ✓ EIP opponensplasty
- ✓ ADM (Huber) transfer
- ✓ Palmaris longus (Camitz) transfer



# High Median Nerve Palsy

## What additional loss is there?

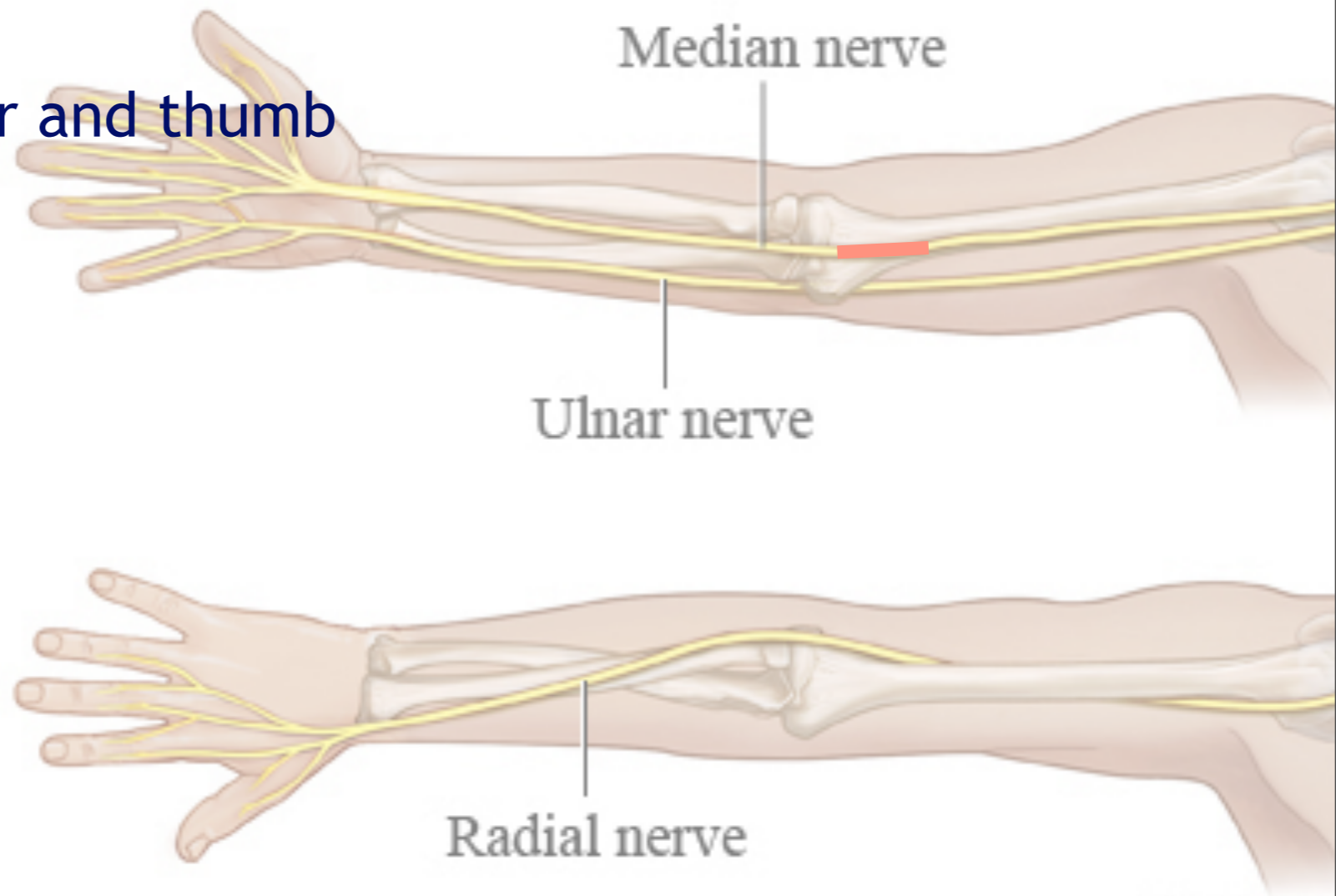
- ✓ PT
- ✓ FCR
- ✓ FDS all digits
- ✓ FDP to index and middle
- ✓ FPL
- ✓ PQ



# High Median Nerve Palsy

## ✔ What function needs to be restored?

- ✔ Opposition
- ✔ Flexion of index finger and thumb

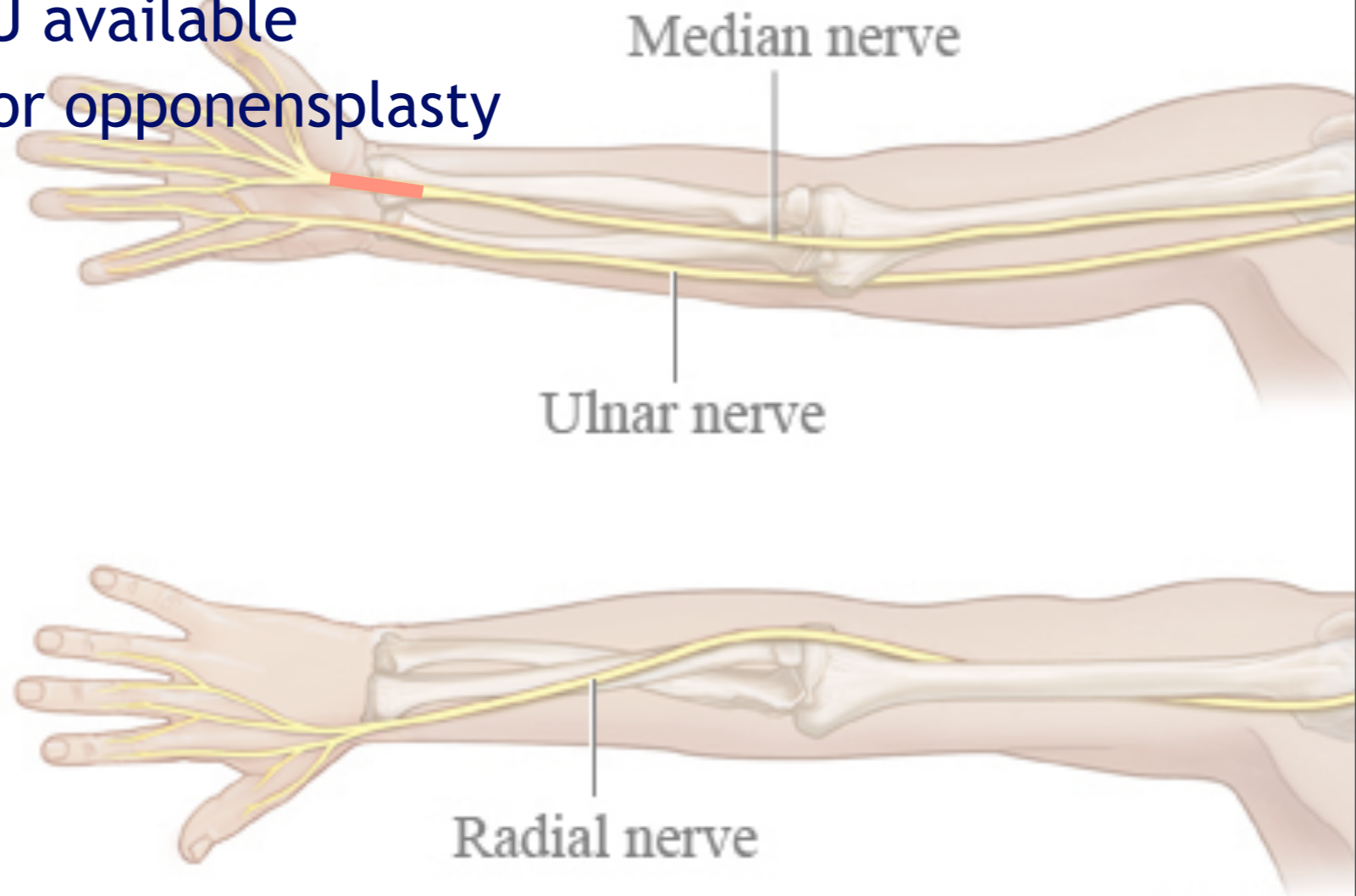




# High Median Nerve Palsy

## Transfer Options?

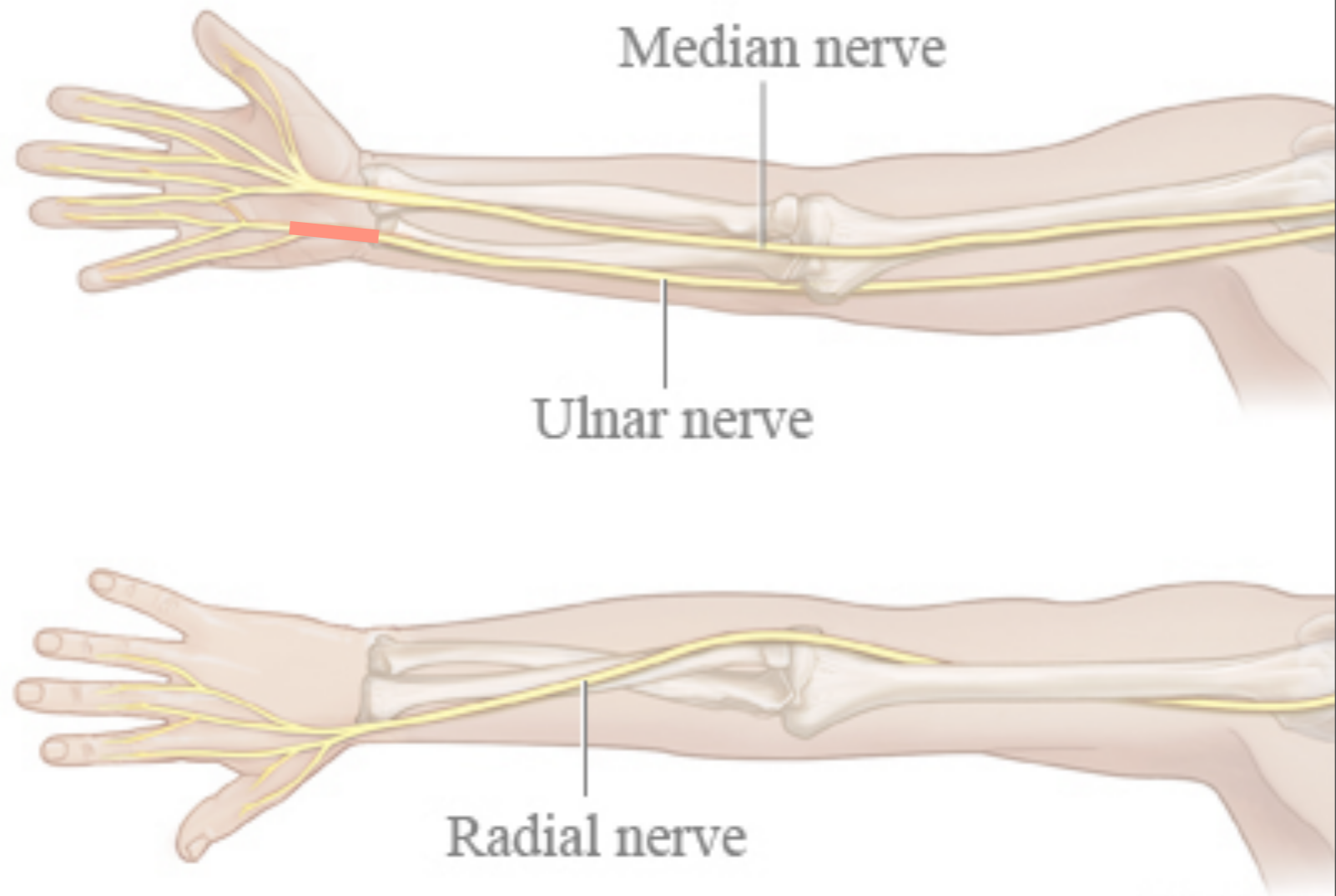
- ✓ only BR, ECRL and ECU available
- ✓ ECU may be needed for opponensplasty
- ✓ therefore:
  - ✓ BR to FPL
  - ✓ ECRL to index FDP



# Low Ulnar Nerve Palsy

✔ What is missing?

✔ Intrinsic muscles



✔ Hypothenar muscles may be spared depending on level

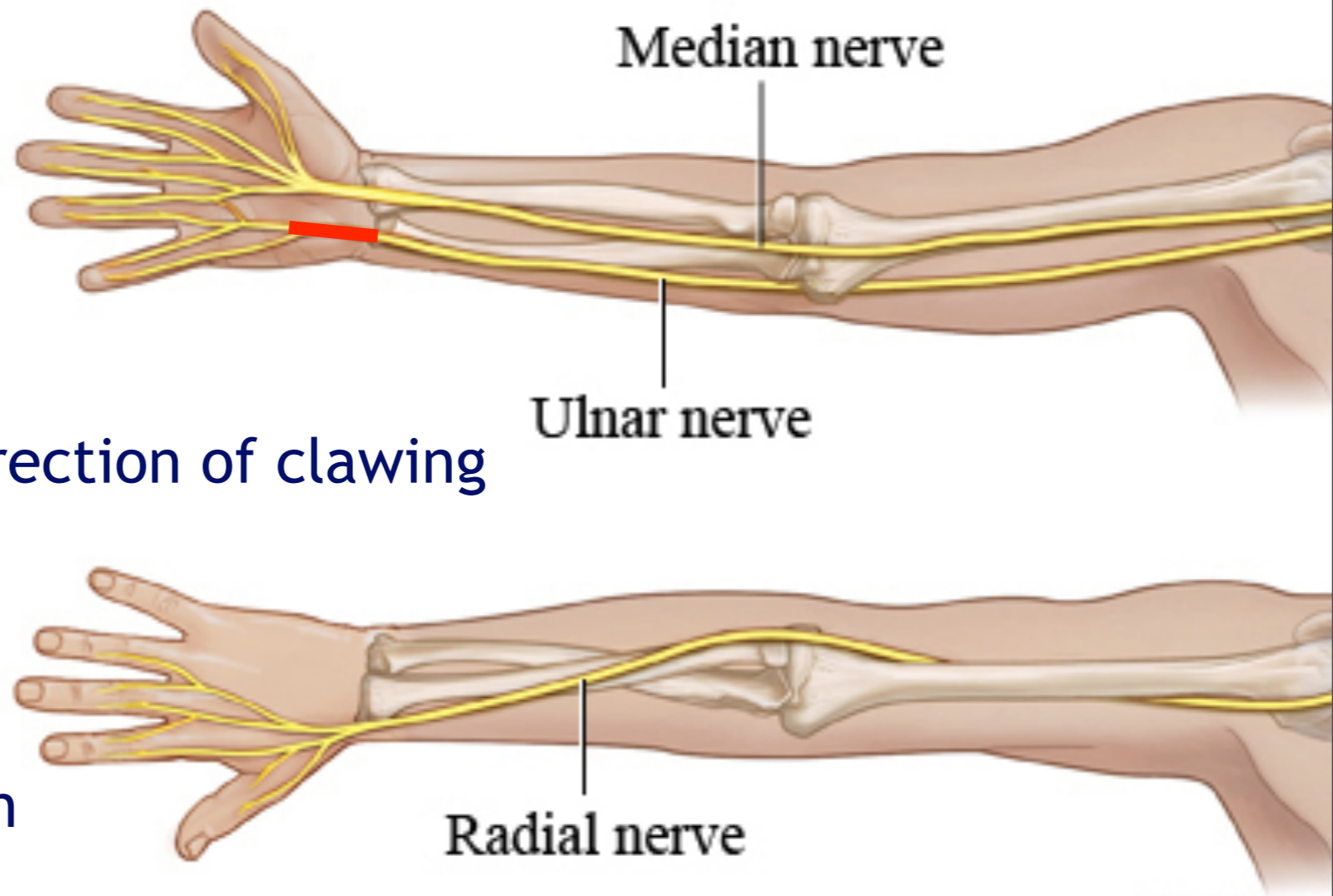
# Low Ulnar Nerve Palsy

## What function needs to be restored?

Thumb power pinch

Roll-up function - correction of clawing

Little finger adduction



# Low Ulnar Nerve Palsy

## ✔ Transfer options

✔ Thumb key pinch -

✔ ECRB between 3rd and 4th MC to adductor tubercle with free graft

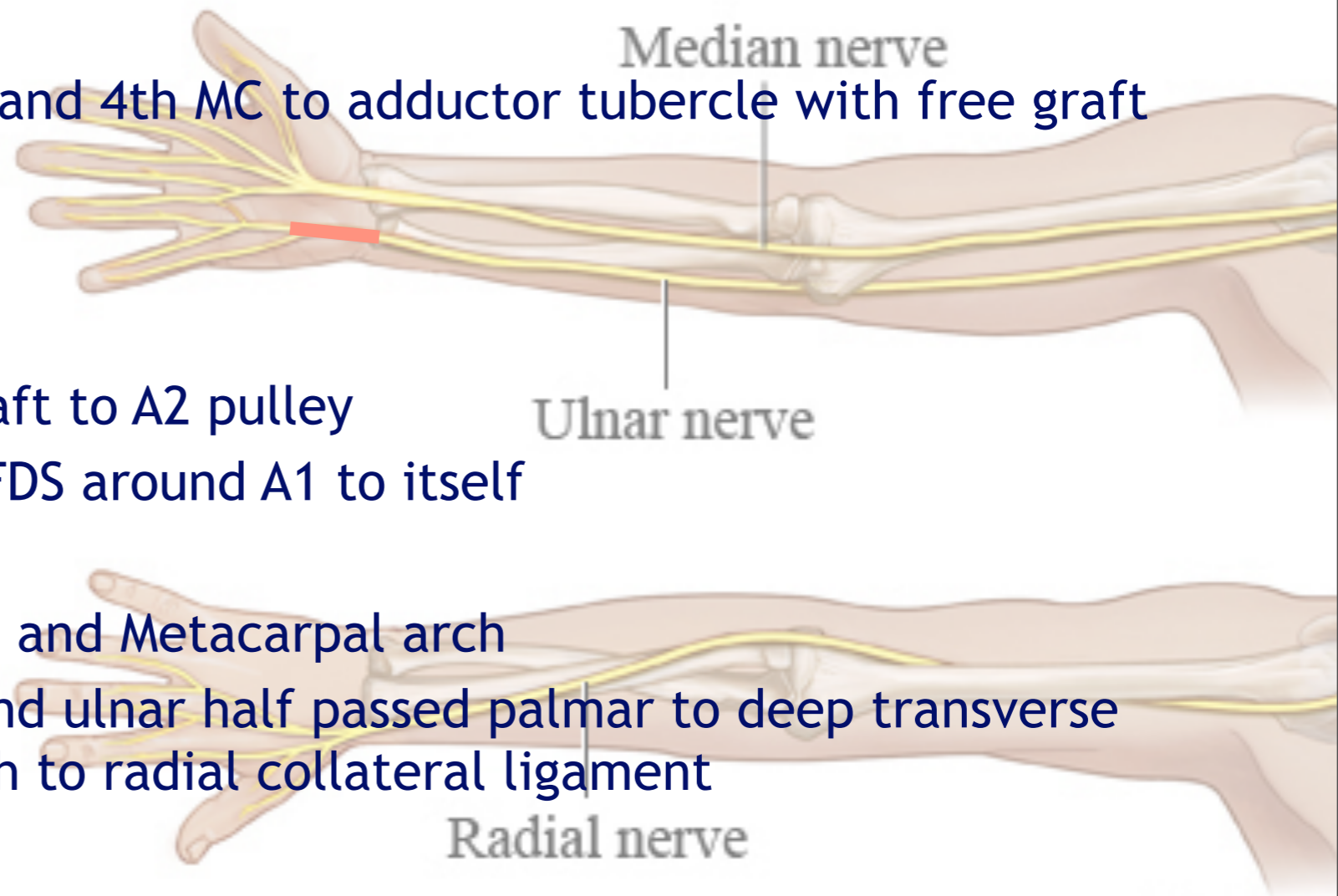
✔ Clawing -

✔ ECRL with 4 tail graft to A2 pulley

✔ or Zancolli lasso - FDS around A1 to itself

✔ Little finger adduction and Metacarpal arch

✔ EDM tendon split and ulnar half passed palmar to deep transverse ligament and attach to radial collateral ligament

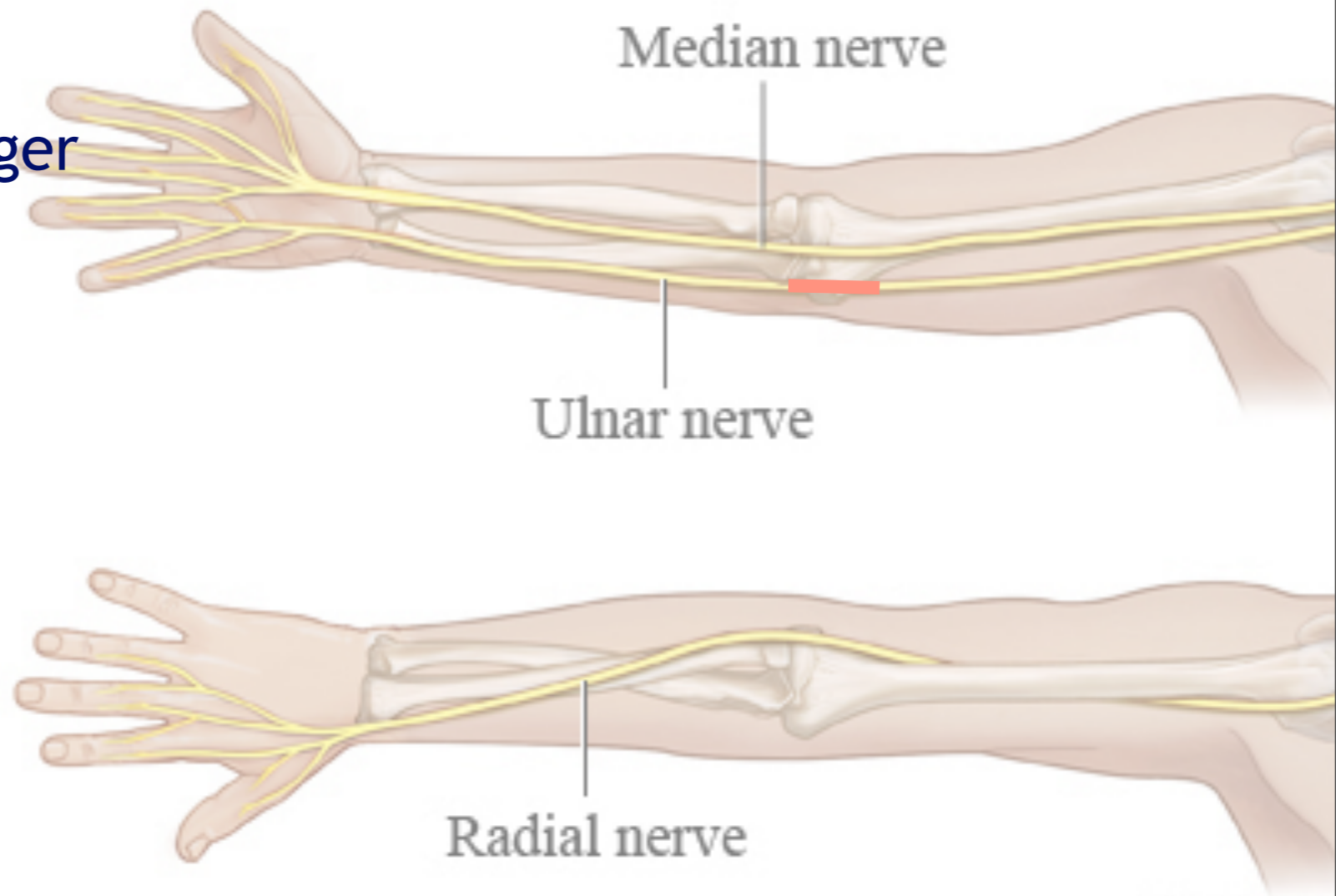


# High Ulnar Nerve Palsy

✔ What additional loss is there?

✔ FDP ring and little finger

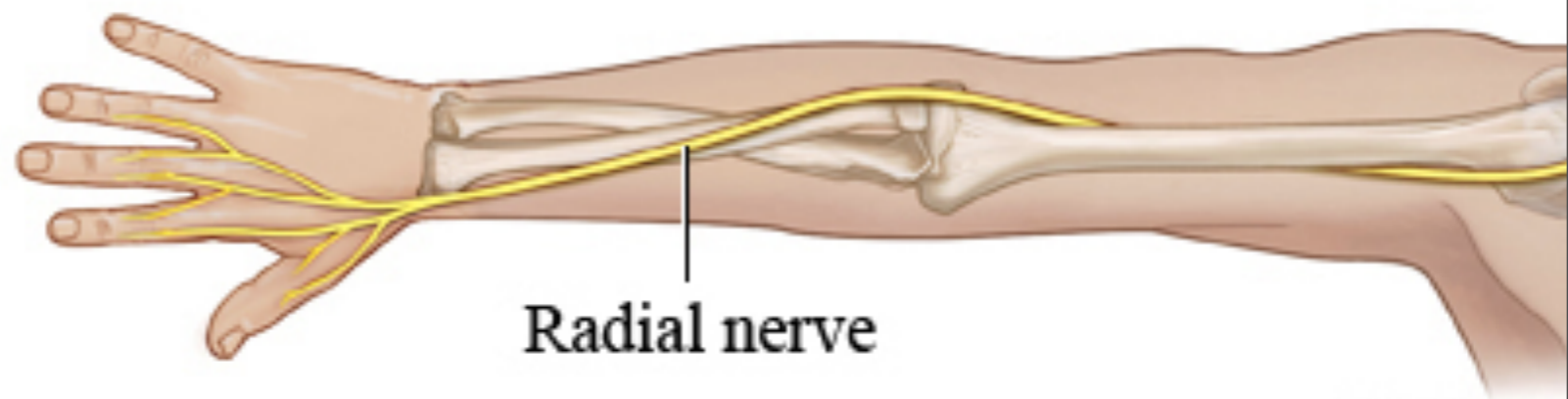
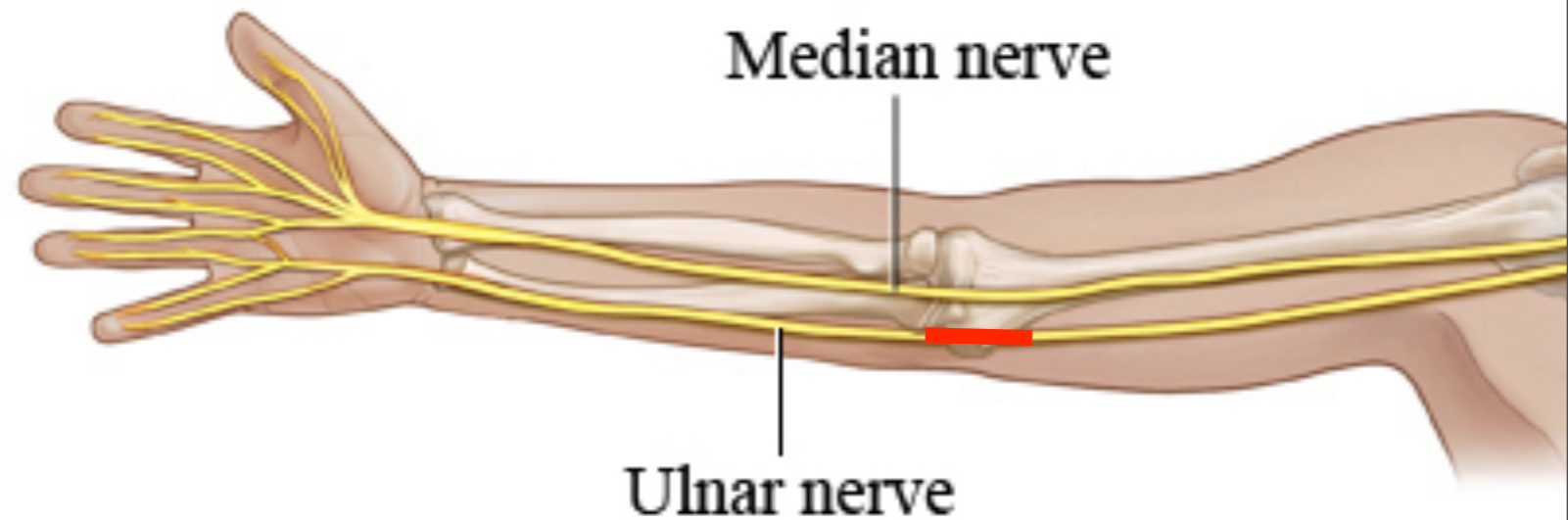
✔ FCU



# High Ulnar Nerve Palsy

✔ What additional functional loss is there?

✔ Active finger flexion

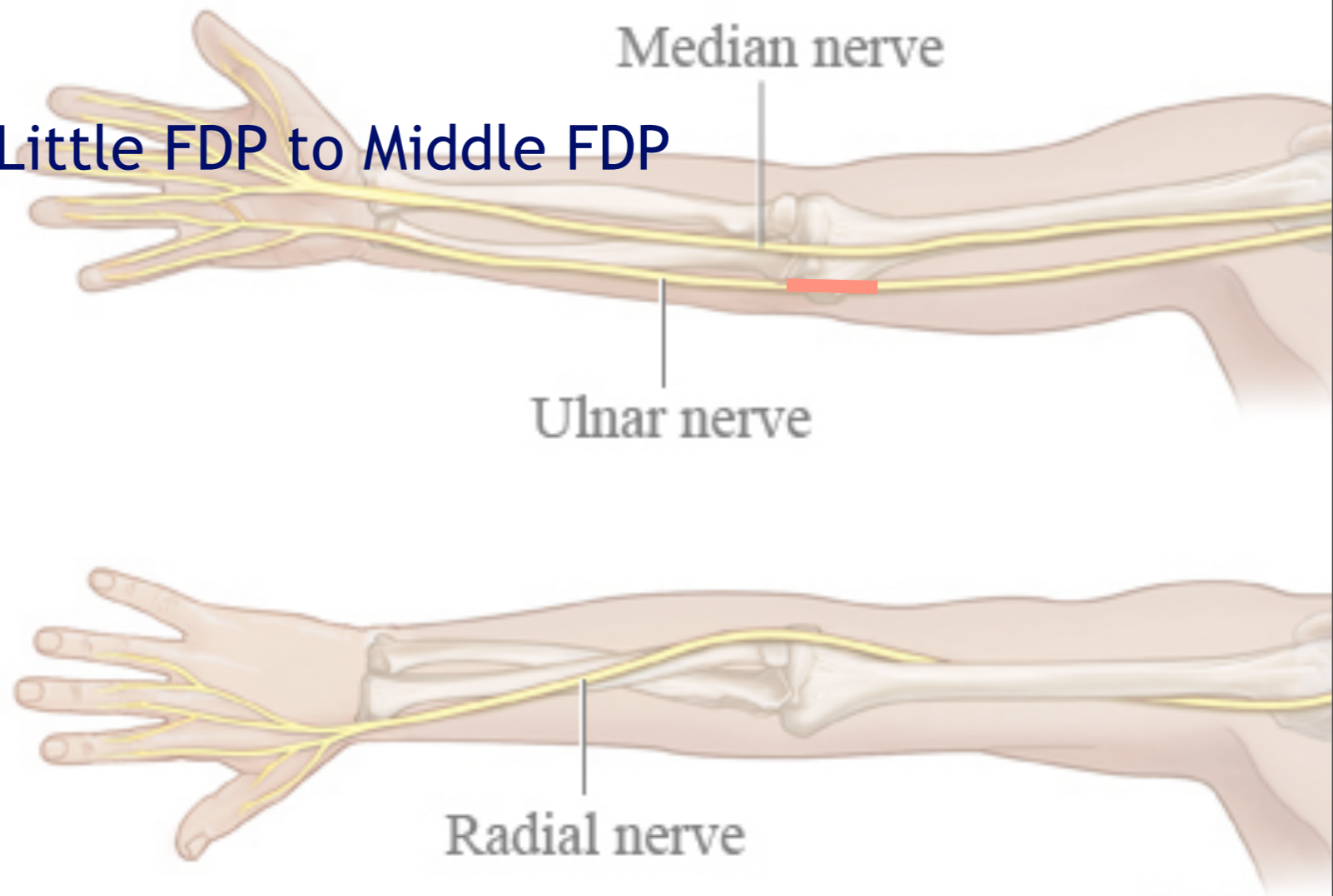


✔ restoration may result in clawing so low nerve lesion transfers may be required

# High Ulnar Nerve Palsy

## Transfer options

- Side to Side Ring and Little FDP to Middle FDP



# Radial Nerve Palsy

## What is missing?

?BR and ECRL may be intact depending on level

ECRB

EDC

ECU

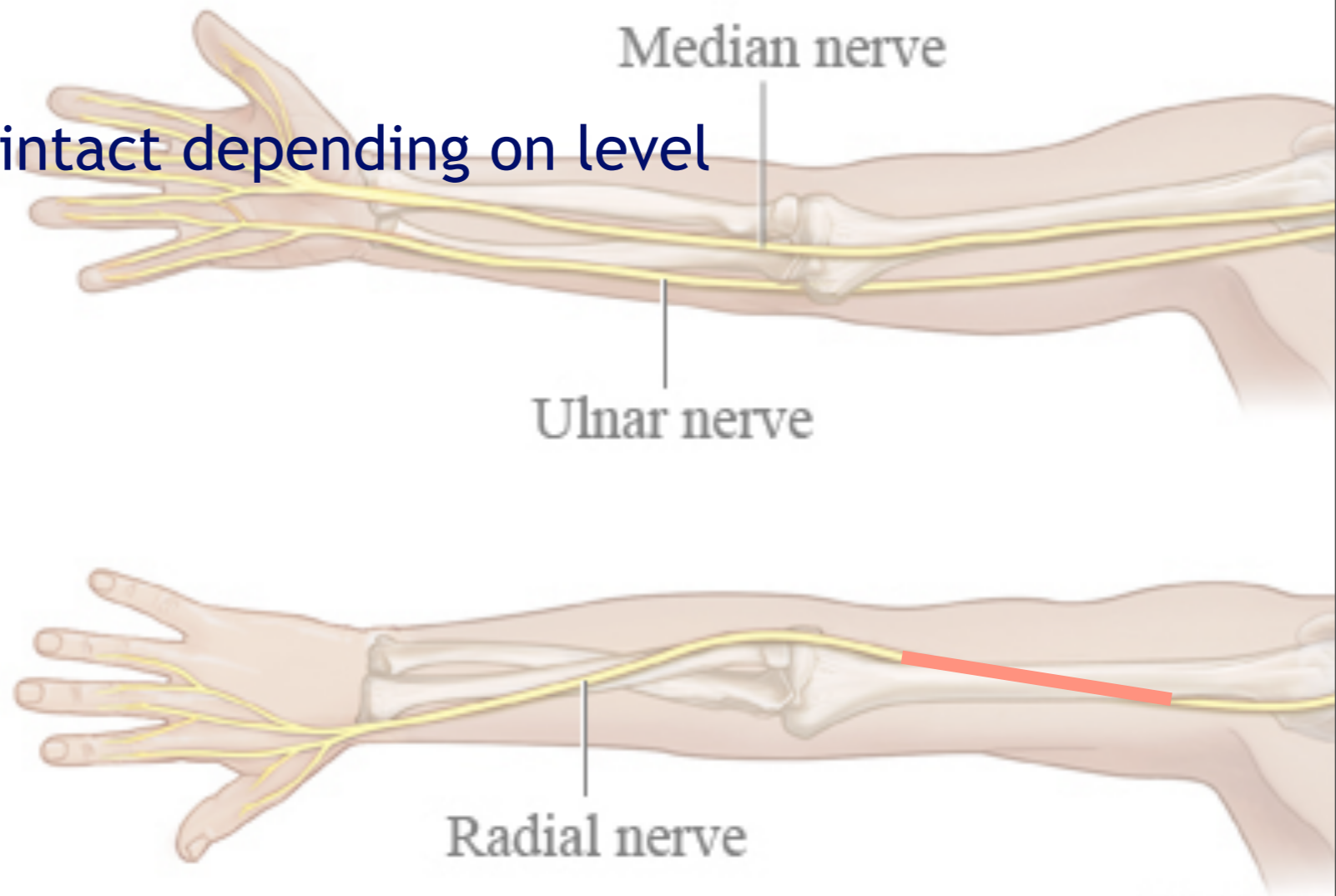
EDM

APL

EPL

EPB

EIP



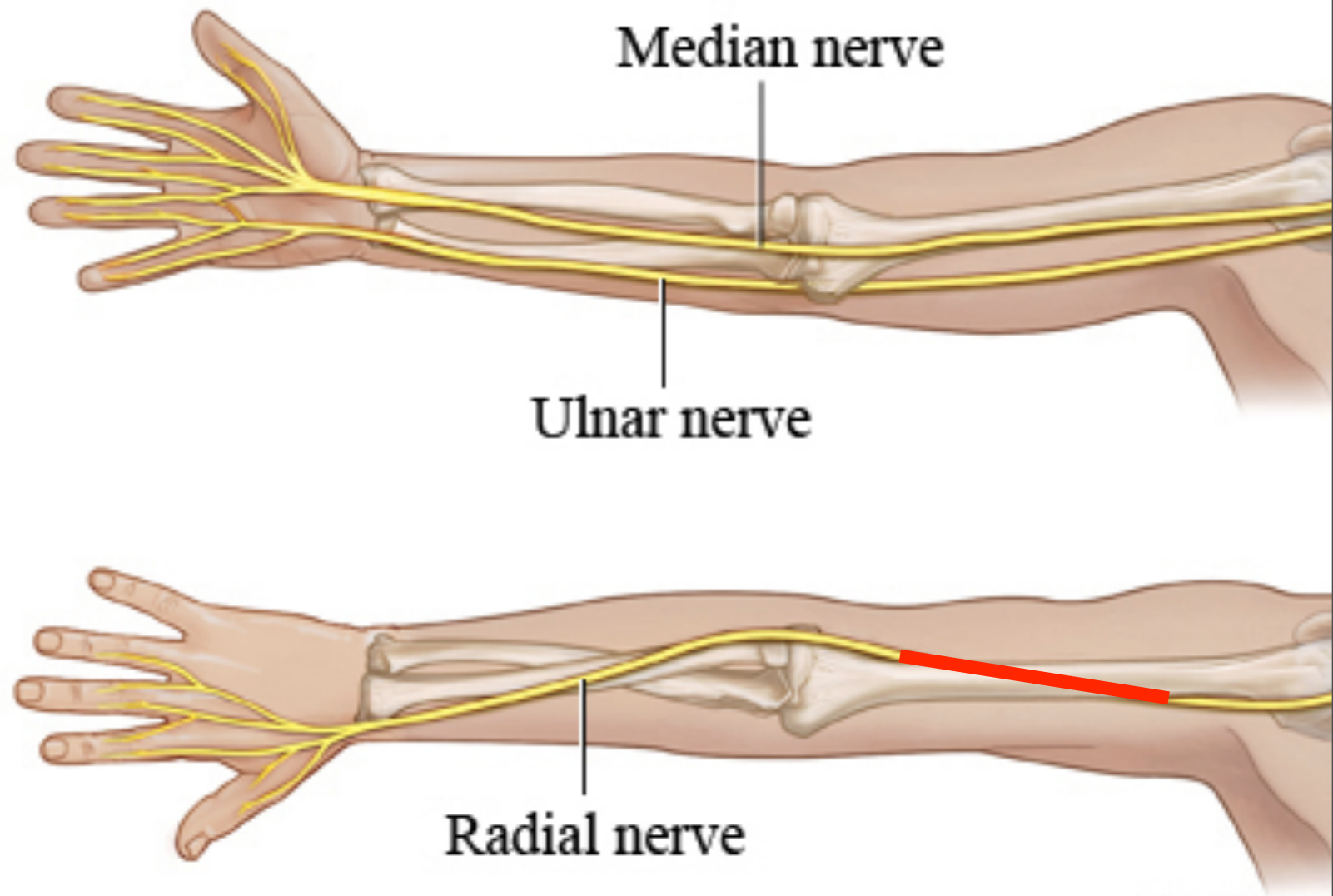


# Radial Nerve Palsy

✔ What function do we need to restore?

✔ Wrist Extension

✔ Finger Extension



# Radial Nerve Palsy

## Transfer Options

### FCR or FCU transfer

- ✓ PT to ECRB
- ✓ FCR or FCU to EDC
- ✓ PL to rerouted EPL

### Superficialis transfer

- ✓ PT to ECRL and ECRB
- ✓ FDS III to EDC
- ✓ FDS IV to EIP and EPL
- ✓ FCR to APL and EPB

