



## CHAPTER 7

# Wrist and Hand

# Learning Objectives

- Describe the bones, joints, and muscles contributing to purposeful movement of the wrist and hand.
- Identify the primary purposeful movements of the wrist and hand within the context of occupational performance.
- Develop competency in goniometry and manual muscle testing (MMT) as clinical assessment techniques for the wrist and hand.



# Learning Objectives

- Explain the connection between somatosensory input and motor output, including the impact of sensorimotor deficits on occupational performance.
- Use clinical reasoning to identify limitations of the wrist and hand that may affect occupational performance.



# Key Concepts

- boutonniere deformity
- carpal tunnel syndrome (CTS)
- claw hand
- composite grasp
- cylindrical grasp
- dart thrower's motion
- de Quervain's tenosynovitis
- Dupuytren's contracture
- extensor tendon injury
- extrinsic muscle
- flexor tendon injury
- hand of benediction
- hook grasp
- intrinsic minus



# Key Concepts

- intrinsic muscle
- intrinsic plus
- lateral (key) pinch
- palmar arch
- spherical grasp
- swan-neck deformity
- tenodesis
- three-jaw chuck pinch
- tip pinch
- trigger finger
- wrist drop



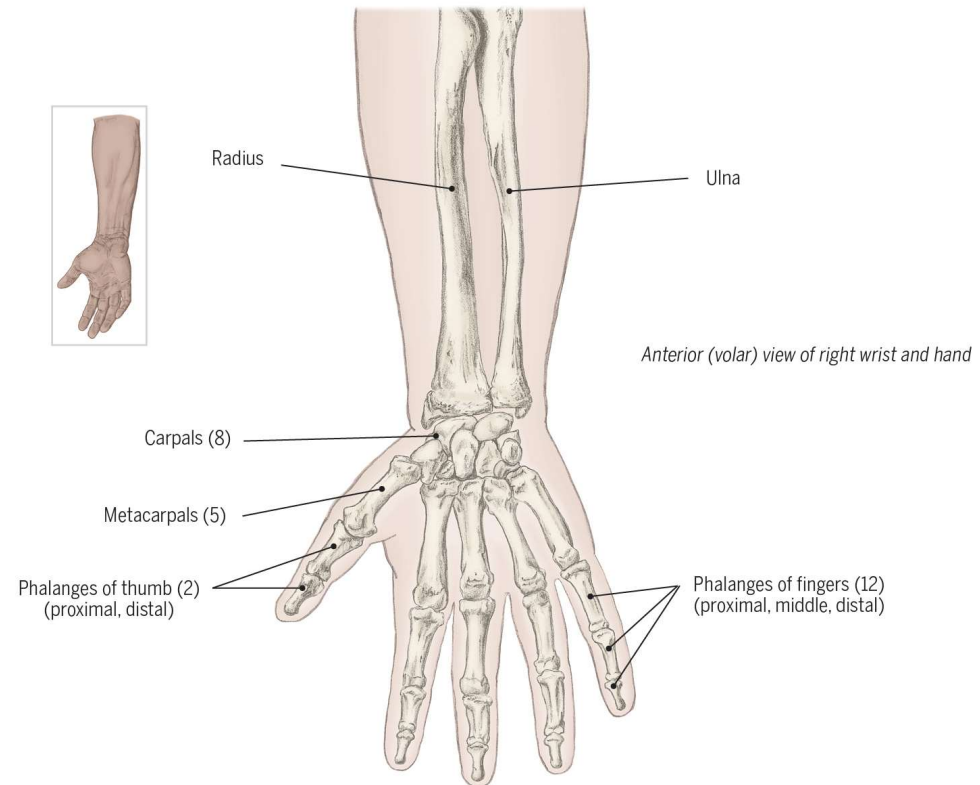
# Wrist and Hand: Instruments of Precision

The wrist and hand give us fine motor control and purposeful dexterity to interact with our external environment.



# Osteology: Bones of the Wrist and Hand

- Distal radius
- Distal ulna
- Carpals
- Metacarpals
- Phalanges



7.2 Bones and bony landmarks of the wrist and hand



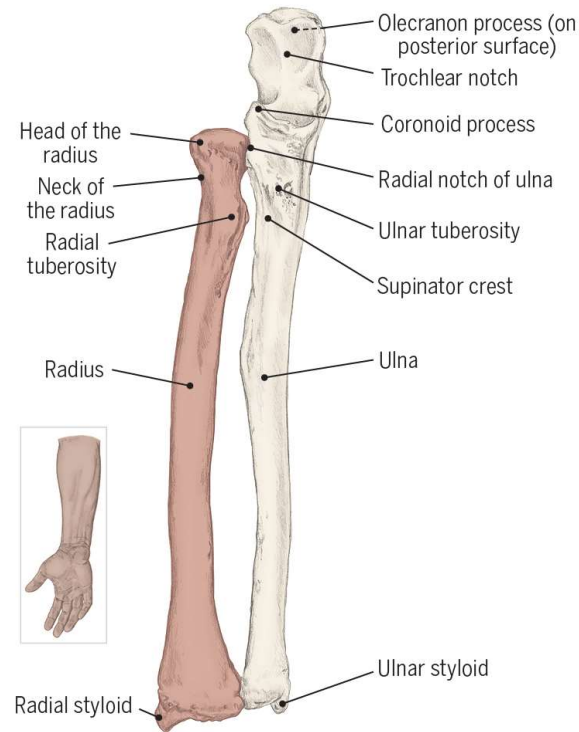
## Distal Radius and Ulna

### Bony landmarks:

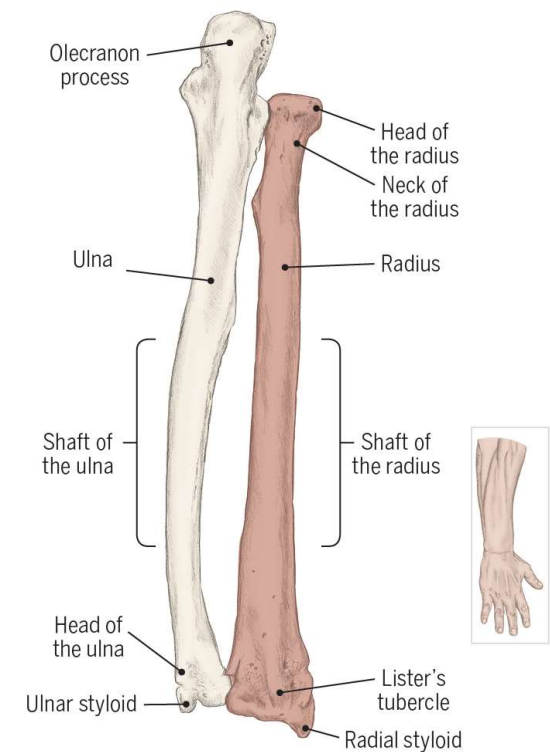
- Radial styloid
- Ulnar styloid

### Lister's tubercle:

- Small and rounded
- Dorsal distal radius
- Pulley for extensor pollicis longus tendon



Anterior (volar) view of the right radius and ulna



Posterior (dorsal) view of the right radius and ulna

### 7.3 Distal radius and ulna





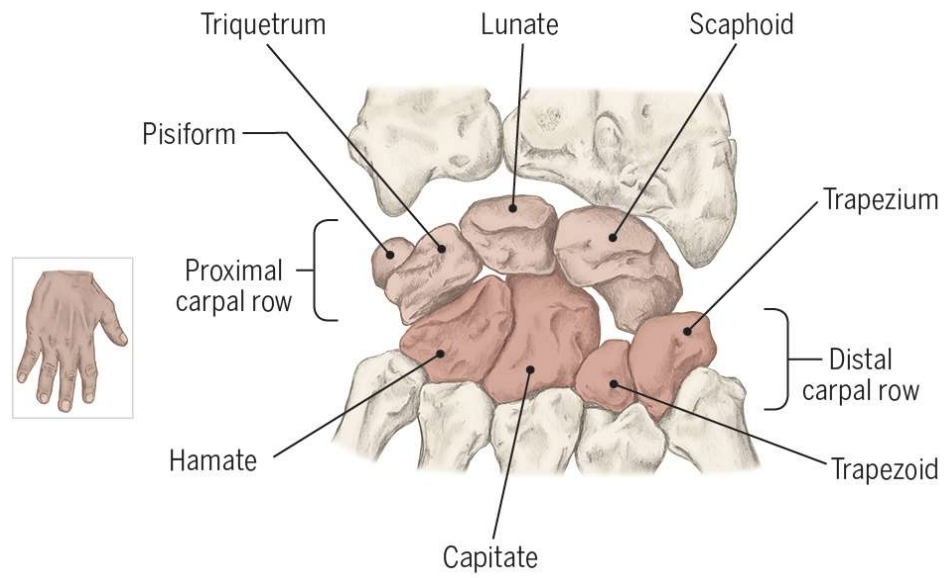
# Carpals

## Proximal carpal row:

- Scaphoid
- Lunate
- Triquetrum
- Pisiform

## Distal carpal row:

- Trapezium
- Trapezoid
- Capitate
- Hamate



*Dorsal view of right wrist*

### 7.4 Carpals



# Carpals

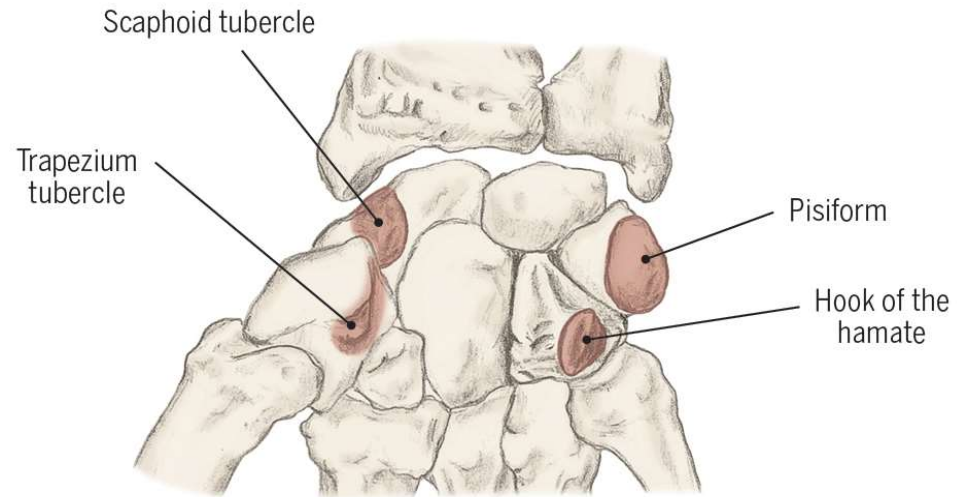
## Bony Landmarks

*Pisiform*

*Scaphoid*

*Hook of the hamate*

*Anatomical snuffbox*



*Volar view of right wrist*

### *7.5 Anterior bony landmarks*

