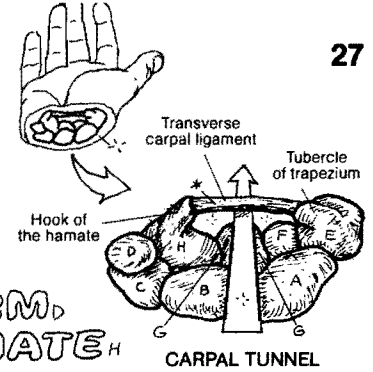


# III. SKELETAL SYSTEM / UPPER LIMB

## WRIST AND HAND BONES

CN: Use two light colors other than those used on Plates 25 and 26 for I and J. (1) Color each bone, or bone group, in all three major views simultaneously. Note the hand drawings

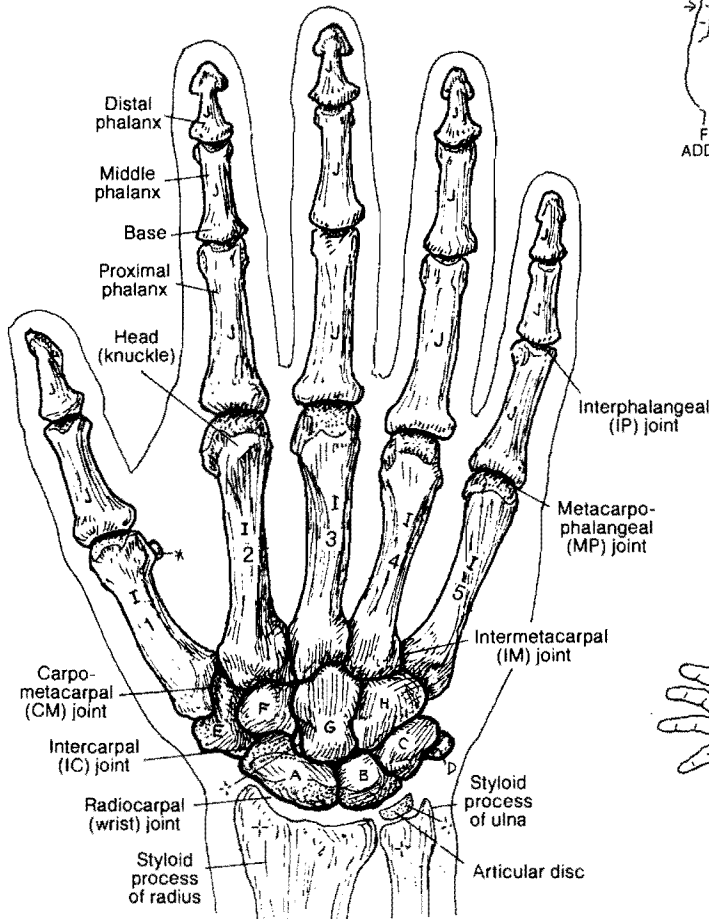
which demonstrate movements at the joints. (2) Color the bones and ligament of the carpal tunnel. You may wish to color those bones in their location in the hand to the left.



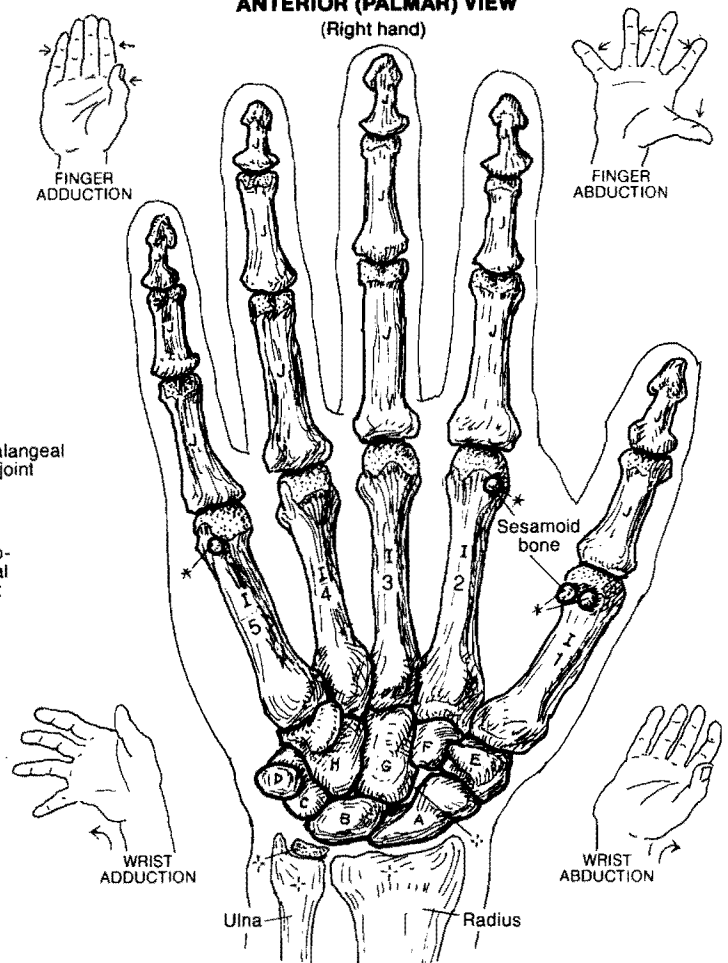
### CARPALS (8):\*

SCAPHOID<sub>A</sub> LUNATE<sub>B</sub> TRIQUETRUM<sub>C</sub> PISIFORM<sub>D</sub>  
 TRAPEZIUM<sub>E</sub> TRAPEZOID<sub>F</sub> CAPITATE<sub>G</sub> HAMATE<sub>H</sub>  
 METACARPALS (5)<sub>I</sub> PHALANGES (14)<sub>J</sub>

**POSTERIOR (DORSAL) VIEW**  
(Right hand)



**ANTERIOR (PALMAR) VIEW**  
(Right hand)



The hand is a most remarkable, highly evolved, mechanical device. Movement of the hand and wrist is made possible by the architecture of the joints among the bones. The wrist joint is formed by the distal articular surface of the radius and the distal surface of the articular disc (just distal to the ulna) with the proximal articular surfaces of the *scaphoid*, *lunate*, and *triquetrum* bones. Forces transmitted from a fall on the hand to the wrist pass largely through the scaphoid, lunate, and radius; thus, fractures of the scaphoid and distal radius are common.

Crossing the wrist bones between the hook of the *hamate*/*pisiform* and the tubercle of the *trapezium*/*scaphoid* bones, the thin, broad transverse carpal ligament (flexor retinaculum) creates a carpal tunnel through which pass the long flexor tendons to the fingers and thumb as well as the median nerve. Compression of the nerve there can cause numbness in the radial three fingers (thumb, index, middle) and some weakness in the thumb (carpal tunnel syndrome).

Using your own hand, note that the interphalangeal (IP) joints are limited to movements of flexion/extension. The metacarpophalangeal (MP) joints permit the added movements of finger adduction/abduction. Of the carpometacarpal (CM) joints, the first (thumb) has exceptional movement (saddle type, synovial); when moving the thumb toward the little finger in an arcing motion, note that the thumb nail rotates 90°, reflecting medial rotation of the first metacarpal on the *trapezium*.

