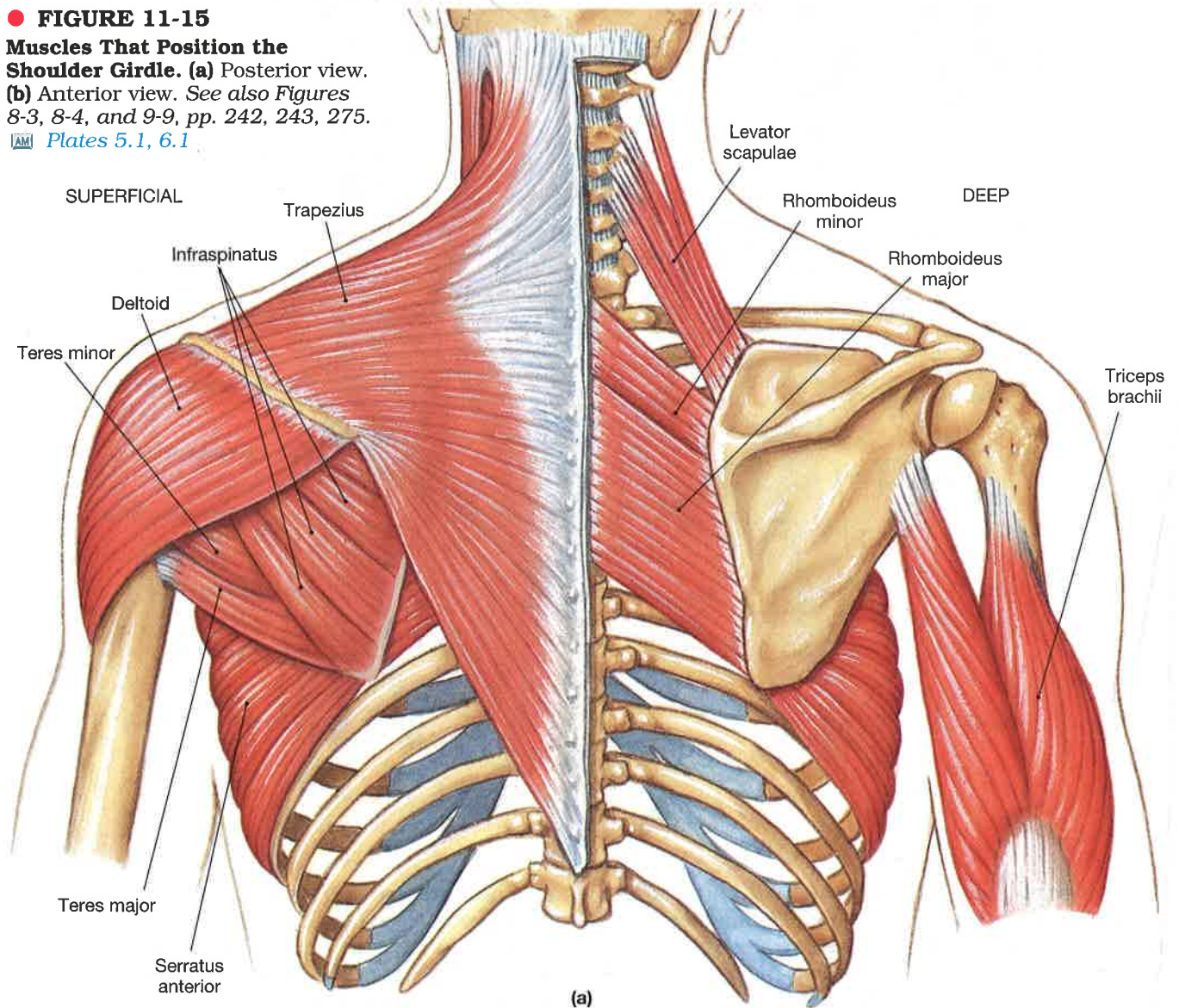
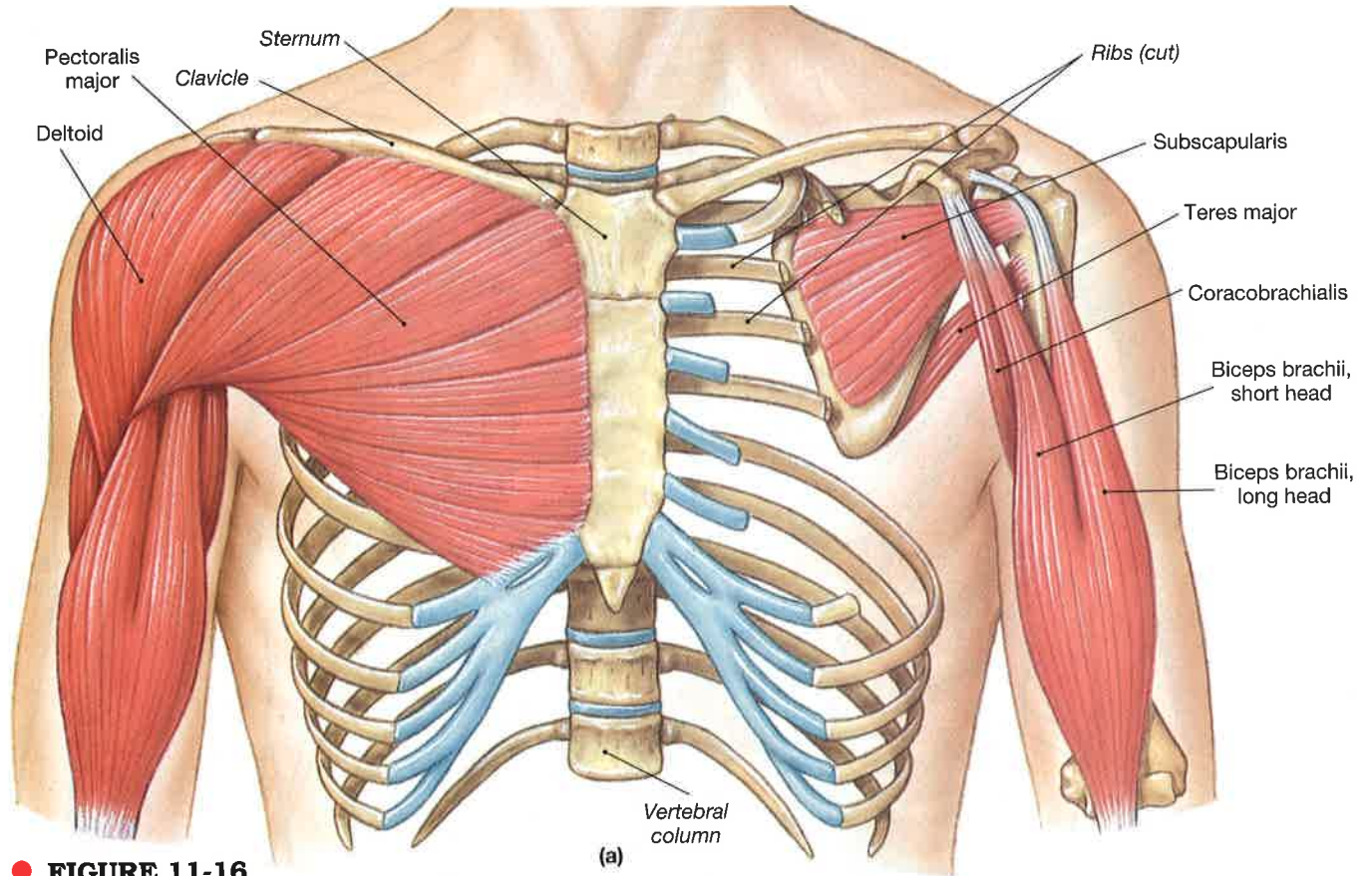
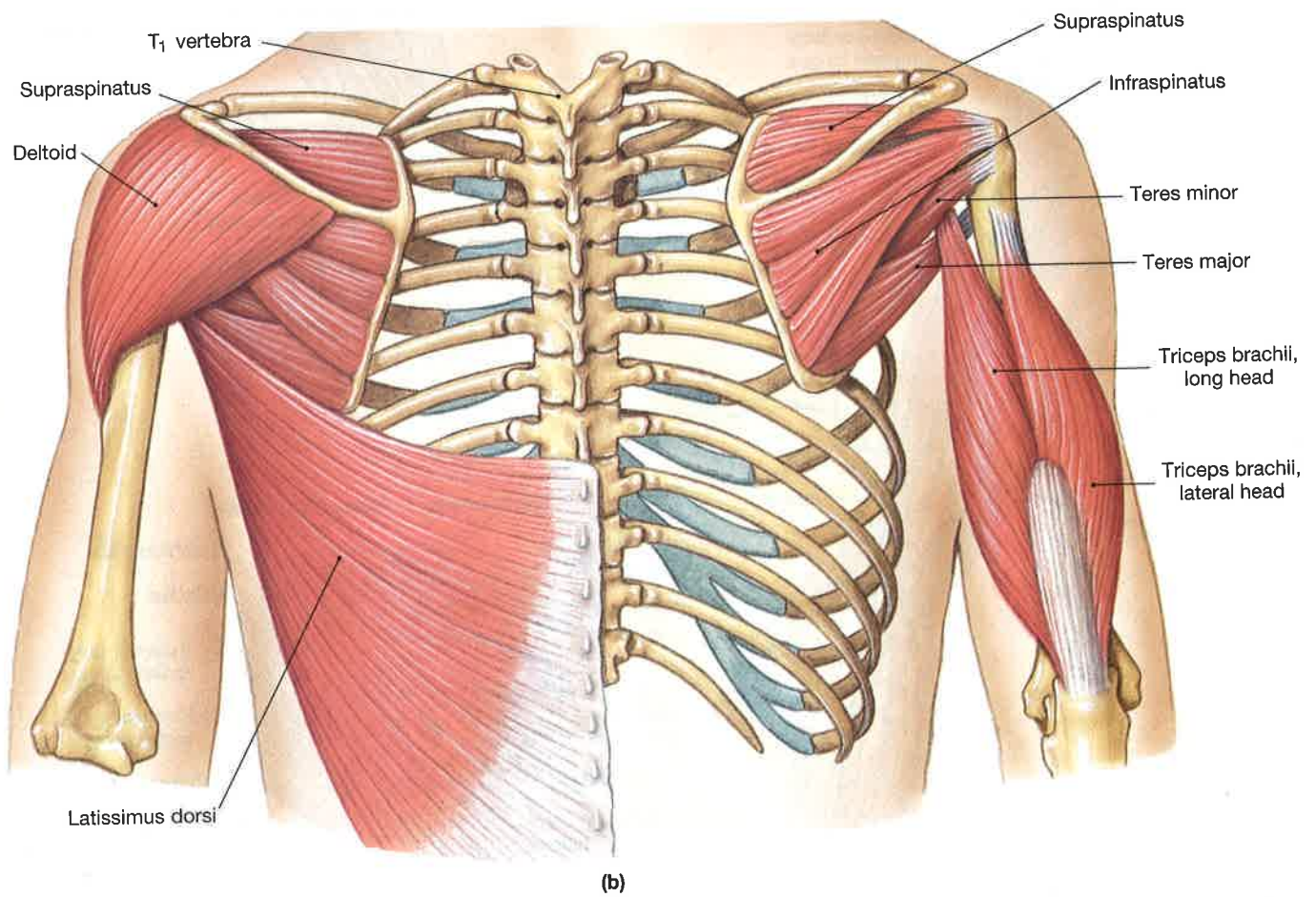


● **FIGURE 11-15**  
**Muscles That Position the**  
**Shoulder Girdle. (a) Posterior view.**  
**(b) Anterior view. See also Figures**  
**8-3, 8-4, and 9-9, pp. 242, 243, 275.**  
 [AM] *Plates 5.1, 6.1*





● **FIGURE 11-16**  
**Muscles That Move the Arm.** (a) Anterior view. (b) Posterior view. See also  
 Figures 7-23, 8-3, and 9-9, pp. 230–231, 243, 275. [Plates 5.1, 6.1](#)



**Collarbone Fracture** – Break or crack in the clavicle, usually in the middle. Causes pain, swelling and tenderness over the clavicle, possibly a crunching sensation with movement.. Caused by direct blow to the clavicle, falling on the arm.

**Shoulder dislocation** – The head of the humerus comes out of the socket. Causes extreme pain, muscle spasm and decreased mobility. Usually results from a fall on an outstretched arm or contact on the outside of the shoulder.

**Shoulder subluxation** – Ball slips out of the socket, then slips back in, can be one time, usually reoccurs. Severe pain that will decrease slightly over time. Caused by vigorous one arm activity, over external rotation of the arm.

**AC separation/sprain** – Pain and tenderness over the tip of the collarbone which increases as the arm is moved across the body. Can be first, second or third degree with symptoms increasing in severity with degree. Caused by a fall onto the tip of the shoulder or direct impact on the top or side of the shoulder.

**SC shoulder separation** - .Collarbone separates from the clavicle in a forward direction, pain. Caused by a fall onto an outstretched hand or a direct blow from behind that drives the shoulder forward.

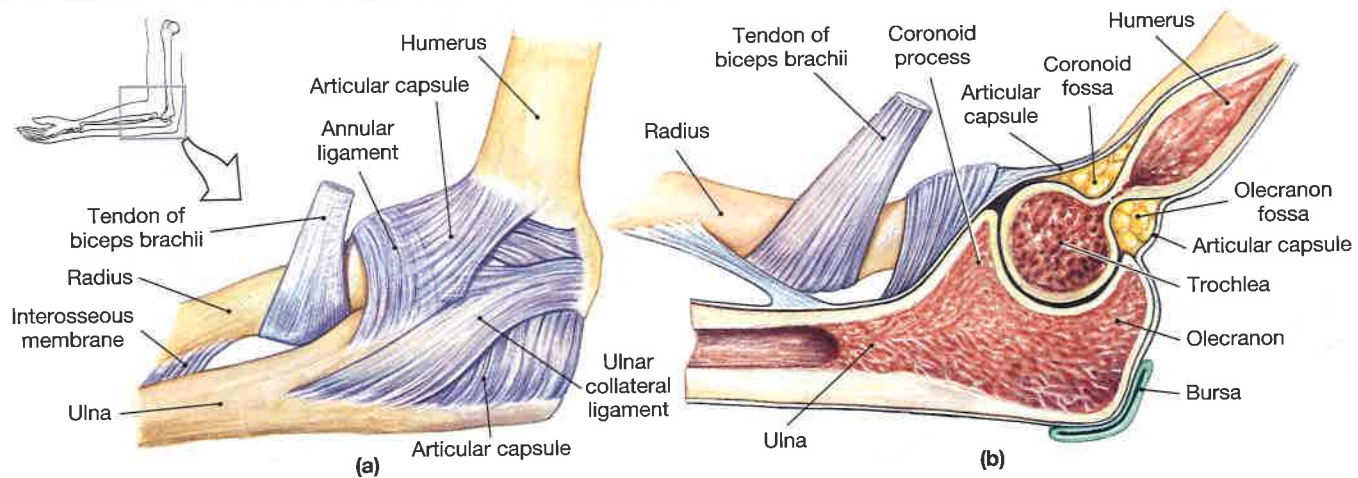
**Rupture of the biceps tendon** – Snap and intense pain at the front of the shoulder the moment the injury occurs. Difficulty bending the elbow and rotating the arm forward, shoulder motion is not affected. “Popeye” muscle that appears when the biceps is tensed. Caused by forceful pushing motions.

**Impingement syndromes** – Main cause of chronic shoulder pain. Soft tissues of the top of the ball of the shoulder joint catch repetitively on the coracoacromial arch on the underside of the shoulder blade. Caused by powerful frequent over arm motions, sudden increase in frequency, intensity or duration of training, weakness or damage to the rotator cuff, arthritis from old AC separation.

**Rotator cuff tendonitis** – Inflammation of one or more of the muscle tendons that hold the ball of the shoulder joint tightly against the socket. Gradual onset of symptoms. Pain and weakness during shoulder motions. Localized tenderness and swelling at front and upper part of the shoulder. Caused by powerful repetitive over arm movements, or sudden increase in the frequency, intensity or duration or training.

**Bursitis** – Irritation and swelling of the bursa sac that lies between the rotator cuff tendons and the shoulder blade. Gradual onset of symptoms. Pain in front upper part of shoulder, loss of motion, similar symptom to tendonitis. Caused by repetitive over arm motions that trap the bursa between the rotator cuff tendons and the underside of the shoulder blade, or sudden increase in the frequency, intensity or duration or training.



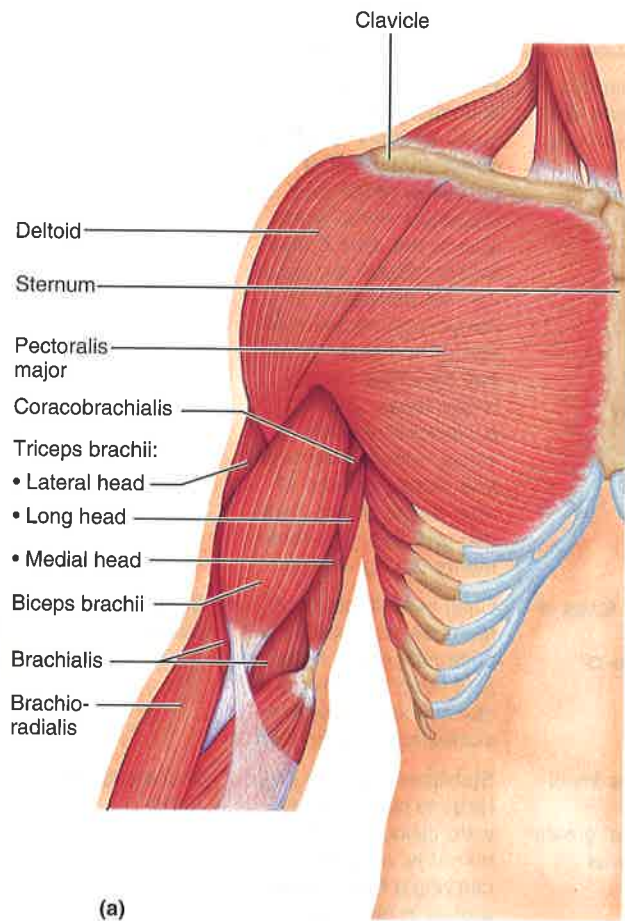


● **FIGURE 9-10**

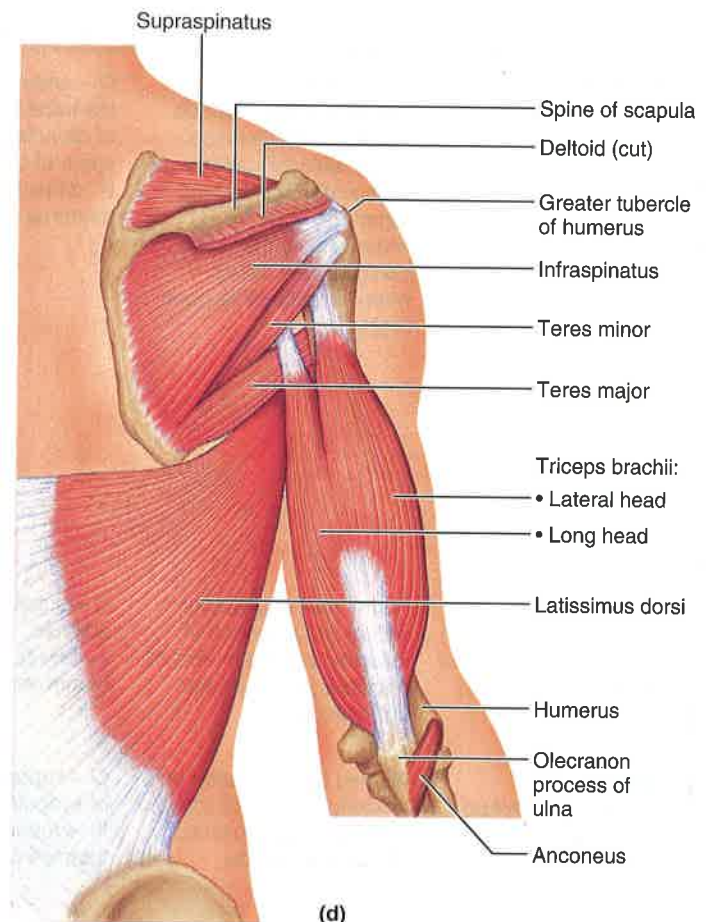
**The Elbow Joint.** (a) Medial aspect of the right elbow joint, showing ligaments that stabilize the joint. (b) Longitudinal section through the right elbow.

lock; (2) the articular capsule is very thick; and (3) the capsule is reinforced by strong ligaments. The *radial collateral ligament* stabilizes the lateral surface of the joint. It extends between the lateral epicondyle of the humerus and the *annular ligament* that binds the proximal radial head to the u

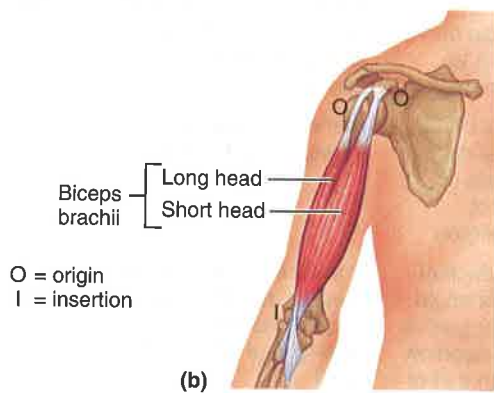
impacts or unusual stresses. For example, when a



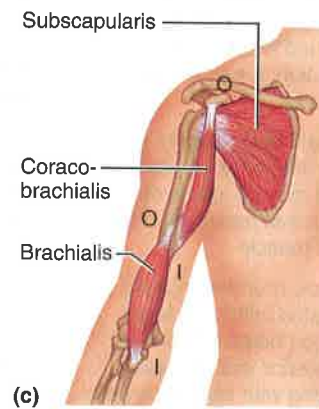
(a)



(d)



(b)



(c)

**Fracture of the lower humerus** – Deformity just above and behind the elbow joint, extreme pain when trying to move the elbow, point tenderness, swelling, bruising. Caused by a fall onto the elbow or direct impact to the elbow.

**Fracture of the radial head** – Extreme pain on the outside of the elbow, worsens as bleeding causes the joint to swell, loss of range of motion, only comfortable when elbow is held at 45 degrees. Caused by a fall onto the arm or hand which transmits the impact up through the hand and forearm into the elbow joint.

**Olecranon Fracture** – Pain and swelling on the back of the elbow. Caused by a fall on the point of the elbow.

**Elbow sprain** – Can be first, second, or third degree. Symptoms depend on degree. Immediate pain and swelling within one half hour, tenderness and stiffness, difficulty in straightening the arm. Caused by a violent straightening of the elbow or hyperextension.

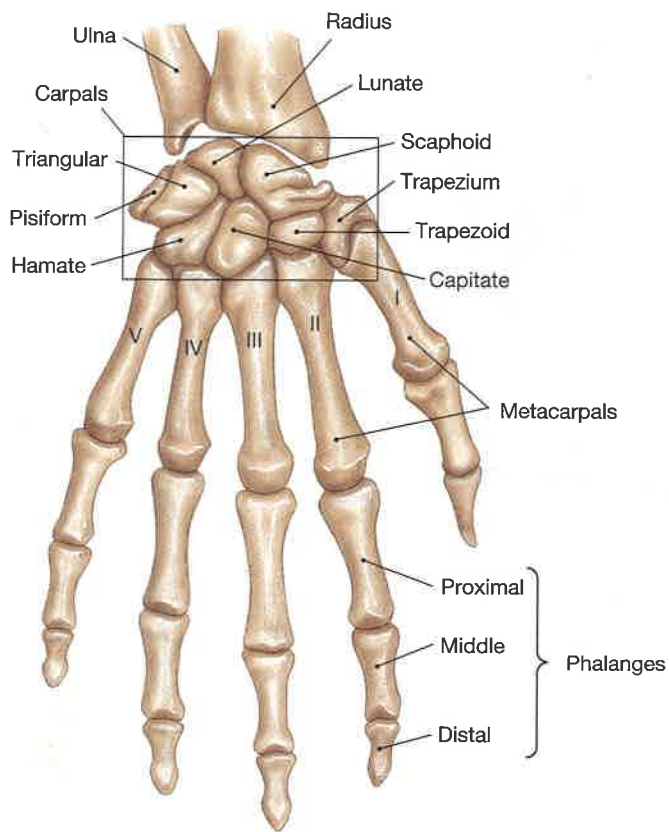
**Elbow dislocations** – Head of the radius or ulna comes out of the socket at the bottom of the upper arm. Obvious deformity in the elbow joint, intense pain, swelling and loss of mobility. Caused by trying to break a fall while elbow is bent or hyperextension.

**Tennis elbow** – Gradual onset of symptoms. Pain directly over outer elbow knob. Pain increases when wrist is rotated. Caused by repetitive stress to extensor muscles in the forearm that transmits to where the extensor tendon inserts into the outer elbow knob.

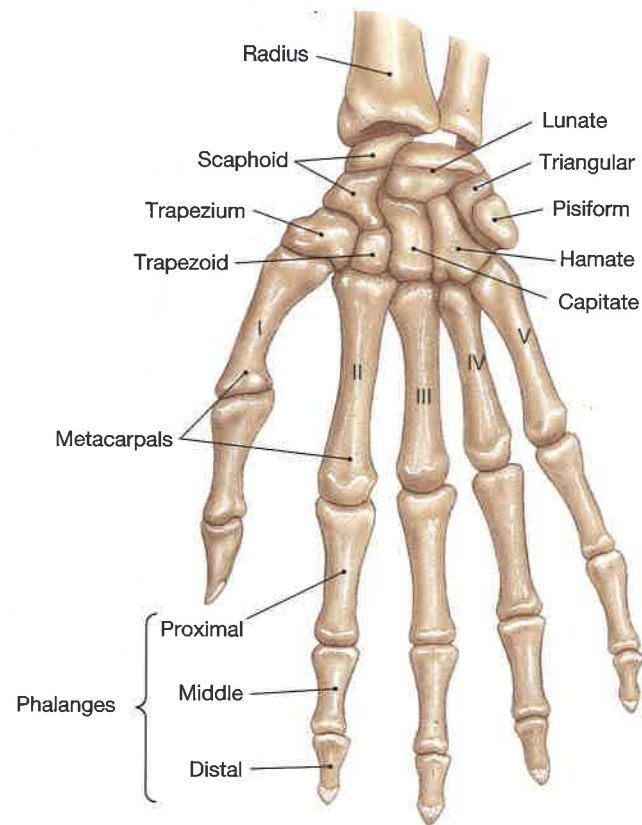
**Nurse maid elbow** - A child is suddenly lifted by the UE with the arm pronated. The annular ligament is disrupted and trapped between the radial head & capitulum. The annular ligament is disrupted and trapped between the radial head and the capitulum. This is easily remediated by slow supination with the elbow extended under mild distraction.







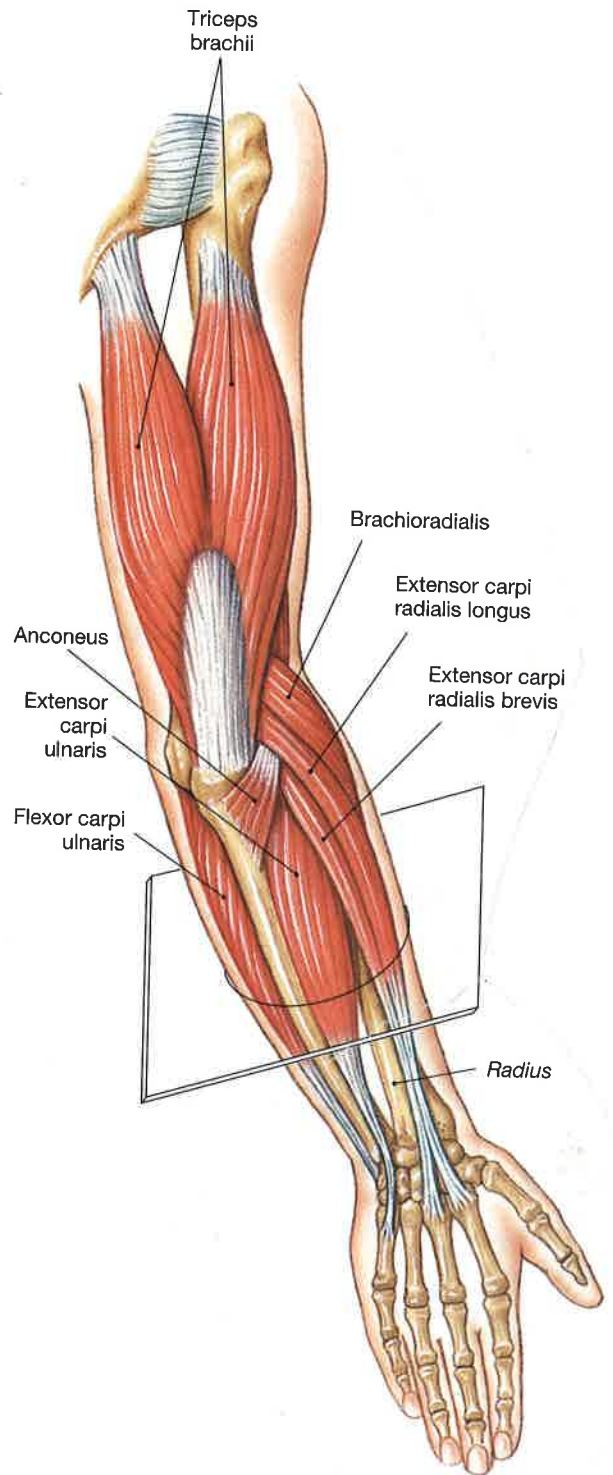
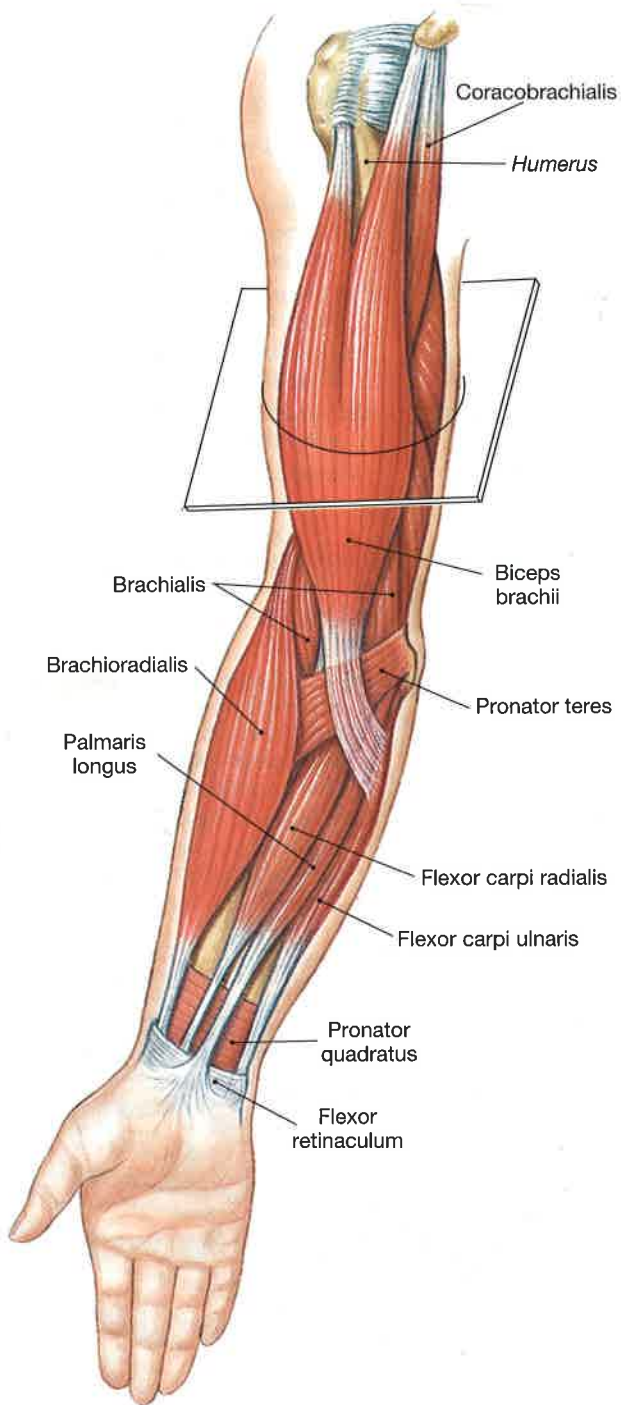
(a) Posterior view

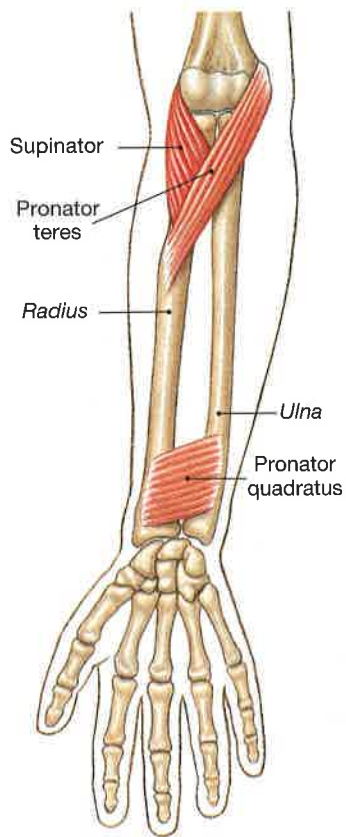


(b) Anterior view

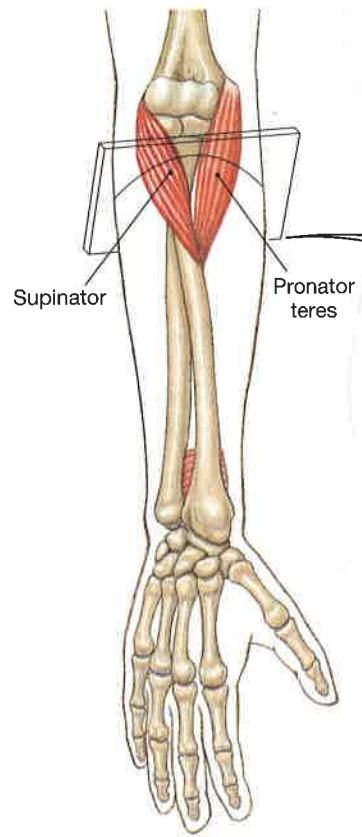
● **FIGURE 8-6**

**Bones of the Wrist and Hand.** (a) Posterior view of the right hand. (b) Anterior view of the right hand.

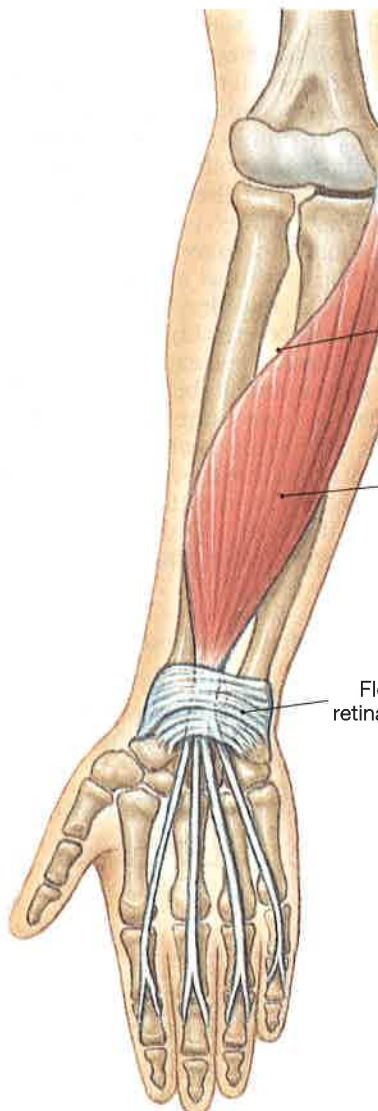




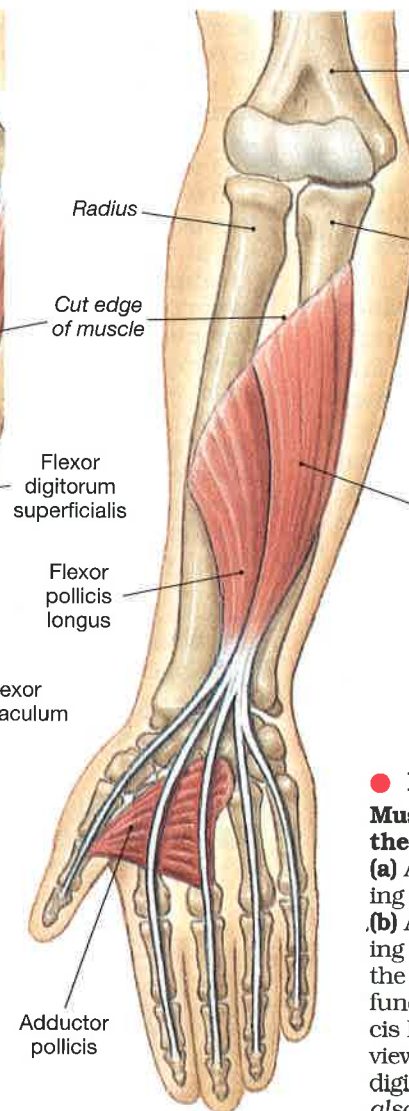
(a) Anterior view, supine



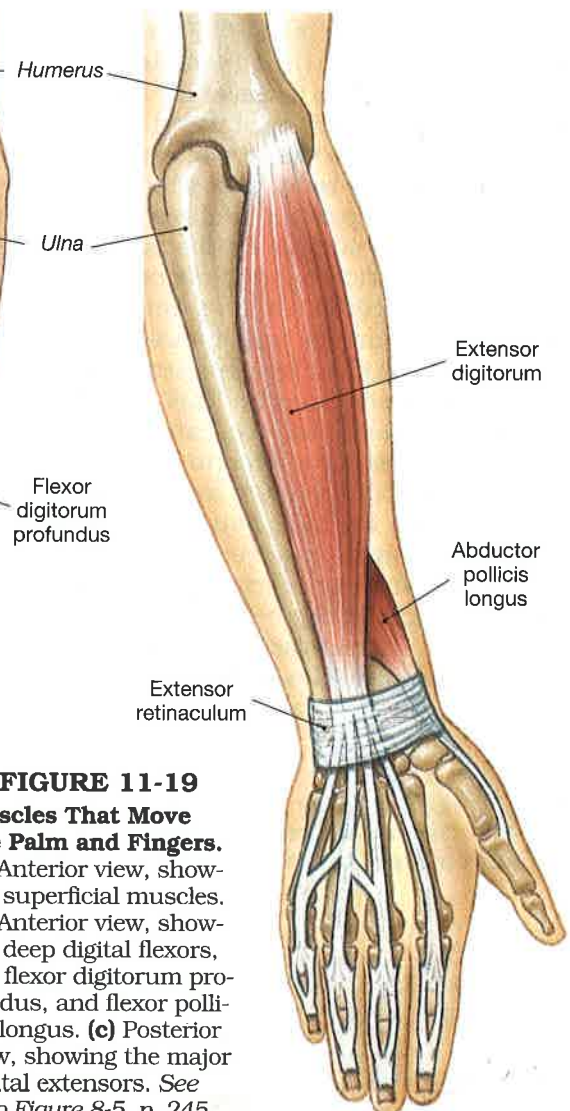
(b) Anterior view in pronation



(a)



(b)



(c)

**FIGURE 11-19**  
**Muscles That Move the Palm and Fingers.**  
**(a)** Anterior view, showing superficial muscles.  
**(b)** Anterior view, showing deep digital flexors, the flexor digitorum profundus, and flexor pollicis longus.  
**(c)** Posterior view, showing the major digital extensors. See also Figure 8-5, p. 245.

**Colles' Fracture** – Fracture of the lower end of the radius. Deformity on thumb side of lower forearm. Pain, swelling, and tenderness around the wrist. Caused by a fall onto an outstretched arm that forcefully bends the hand upward and backward

**Carponavicular Fracture** – Fracture of the scaphoid bone. Pain and tenderness in the “snuffbox” portion of the wrist. Pain when pulling back the long bone of the thumb. Loss of wrist range of motion. Mild swelling and bruising over the thumb side of the wrist. Caused by a fall onto an outstretched arm that forcefully bends the hand upward and backward

**Wrist Sprain** – Stretch or tear of the ligaments around the wrist. Can be first, second, or third degree. Immediate pain over the wrist joint, swelling within an hour, more severe the sprain, more severe the swelling. Loss of range of motion. No specific point pain. Caused by a fall onto an outstretched arm that forcefully bends the hand upward and backward

**Wrist dislocations** – Usually affect the lunate bone. Deformity on the palm or knuckle side of the hand near the wrist crease, especially a lump where one of the eight wrist bones have popped up or down. Swelling and point tenderness. Caused by a fall onto an outstretched arm that forcefully bends the hand upward and backward and compresses one wrist bone against another.

**Fracture of the hook of the hamate** – Pain and tenderness over the heel of the hand. Weakness when trying to grip. Numbness in the little finger. Caused by impact from an object or repetitive impact to the heel of the hand.

**Carpal Tunnel Syndrome** – Build up of pressure in the carpal tunnel on the underside of the wrist. The most common nerve entrapment problem in sports. Gradual development of pain symptoms. Numbness and tingling in thumb and first three fingers. Caused by excessive inversion of the wrist.

**Tendonitis** – Inflammation of the two flexor tendons that pass over the wrists from the forearms to the hands and fingers. Gradual onset of symptoms. Localized pain that increases with activity, crackling sensation in tendons over the wrist, difficulty in grasping. Caused by repetitive bending and straighten of the wrist through large range of motions.