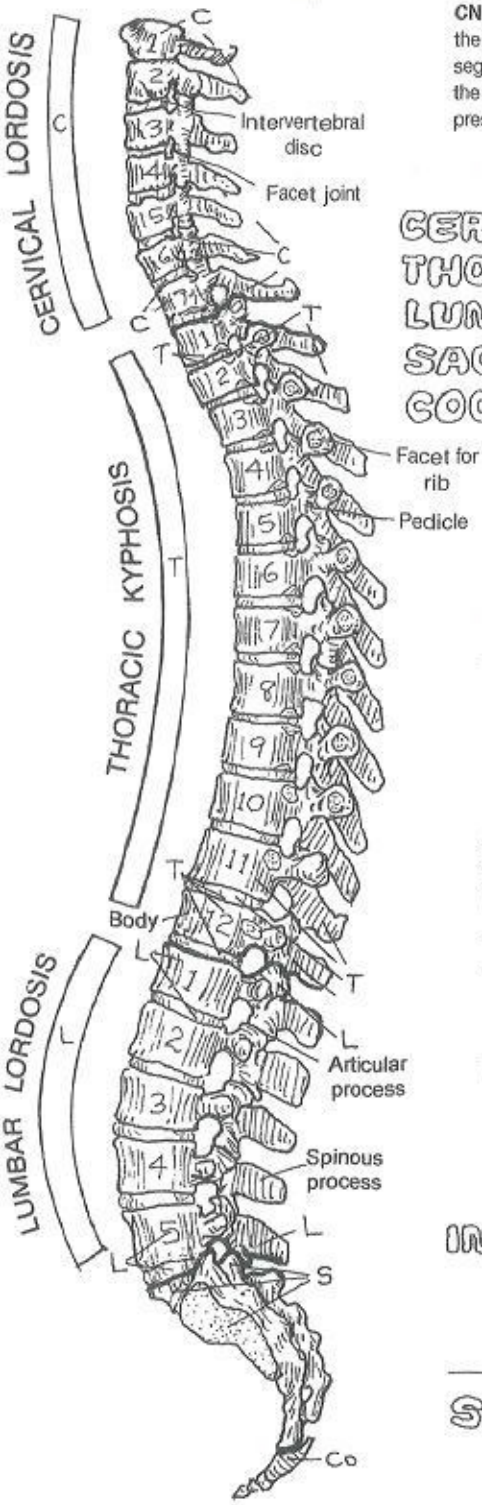
VERTEBRAL COLUMN

See 84

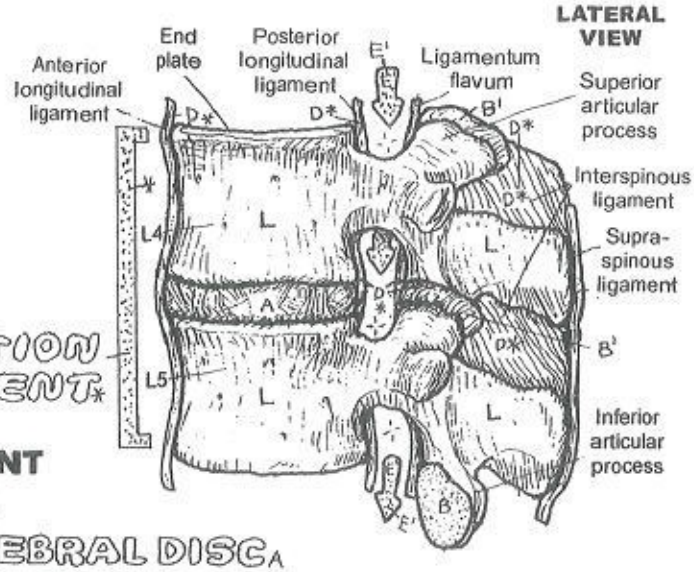
CN: Use gray for D, yellow for H, and light colors to retain detail. (1) Begin with the regions of the column and the three examples of vertebral disorders at lower left. (2) Color the motion segment and the views showing its role in flexion and extension. (3) Color the three views of the vertebral foramina and canal at right. (4) Color the intervertebral disc and the protrusion pressing on a spinal nerve.



REGIONS

CERVICAL C
THORACIC T
LUMBAR L
SACRAL S
COCCYGEAL Co

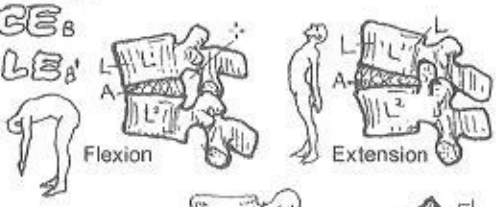
MOTION SEGMENT



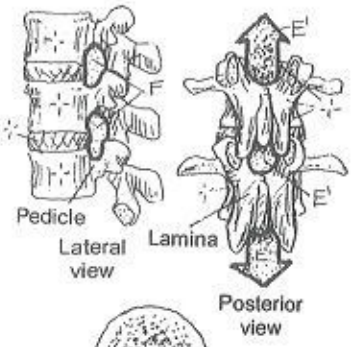
MOTION SEGMENT*

MOTION SEGMENT

VERTEBRA L
INTERVERTEBRAL DISC A
FACET JOINT SURFACE B
FACET JOINT CAPSULE B'
LIGAMENT D*
VERTEBRA L

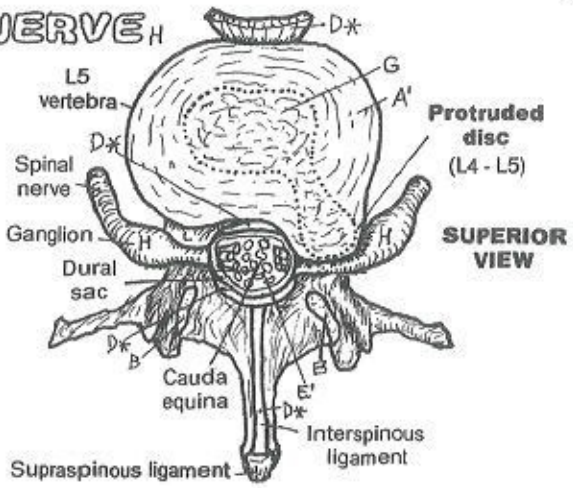


VERTEBRAL FORAMEN E
VERTEBRAL CANAL E'
INTERVERTEBRAL FORAMEN F

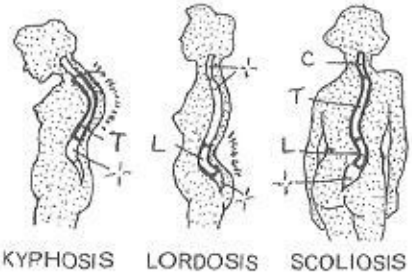


INTERVERTEBRAL DISC A
ANNULUS FIBROSUS A'
NUCLEUS PULPOSUS G

SPINAL NERVE H



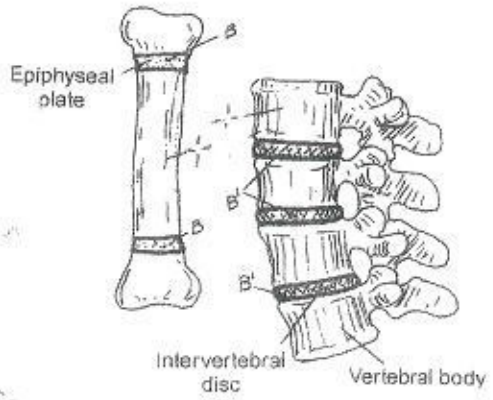
VERTEBRAL DISORDERS



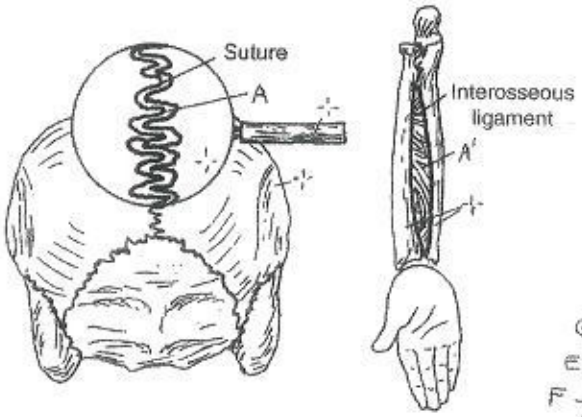
CLASSIFICATION OF JOINTS

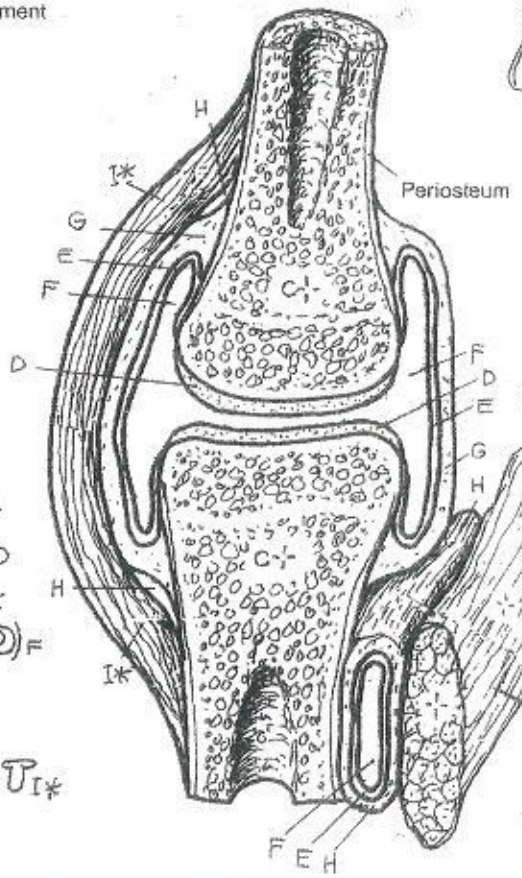
CN: Use a light blue for D, black for F, and gray for H.
(1) Do not color the bones in the upper half of the page.
(2) Below, color the arrows pointing to the location of the joints as well as the joint representations.

CARTILAGINOUS JOINT
IMMOVABLE B
PARTLY MOVABLE B'



FIBROUS JOINT
IMMOVABLE A
PARTLY MOVABLE A'



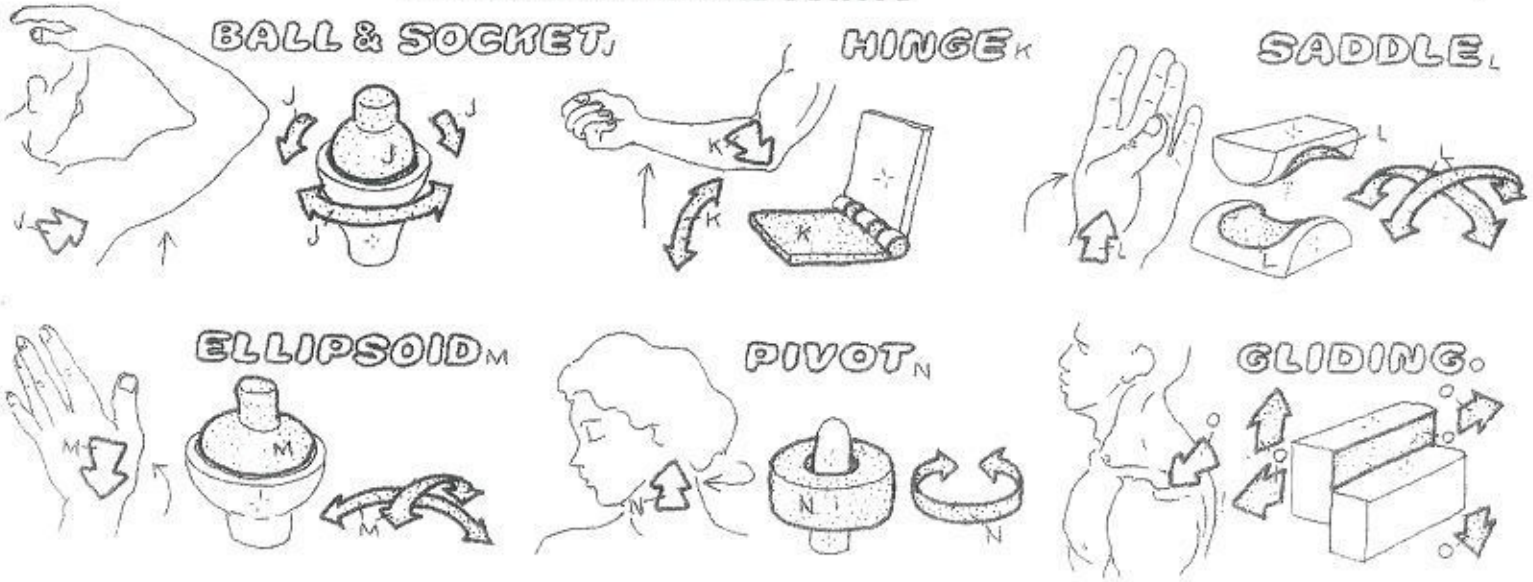


IDEALIZED SYNOVIAL JOINT & BURSA

SYNOVIAL JOINT
(Freely movable)

ARTICULATING BONES C
ARTICULAR CARTILAGE D
SYNOVIAL MEMBRANE E
SYNOVIAL CAVITY (FLUID) F
JOINT CAPSULE G
BURSA H
COLLATERAL LIGAMENT I*

TYPES OF SYNOVIAL JOINTS

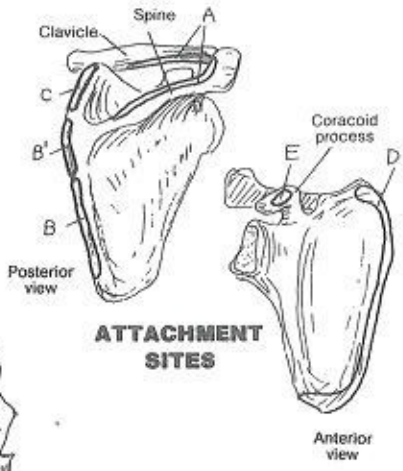


MUSCLES OF SCAPULAR STABILIZATION

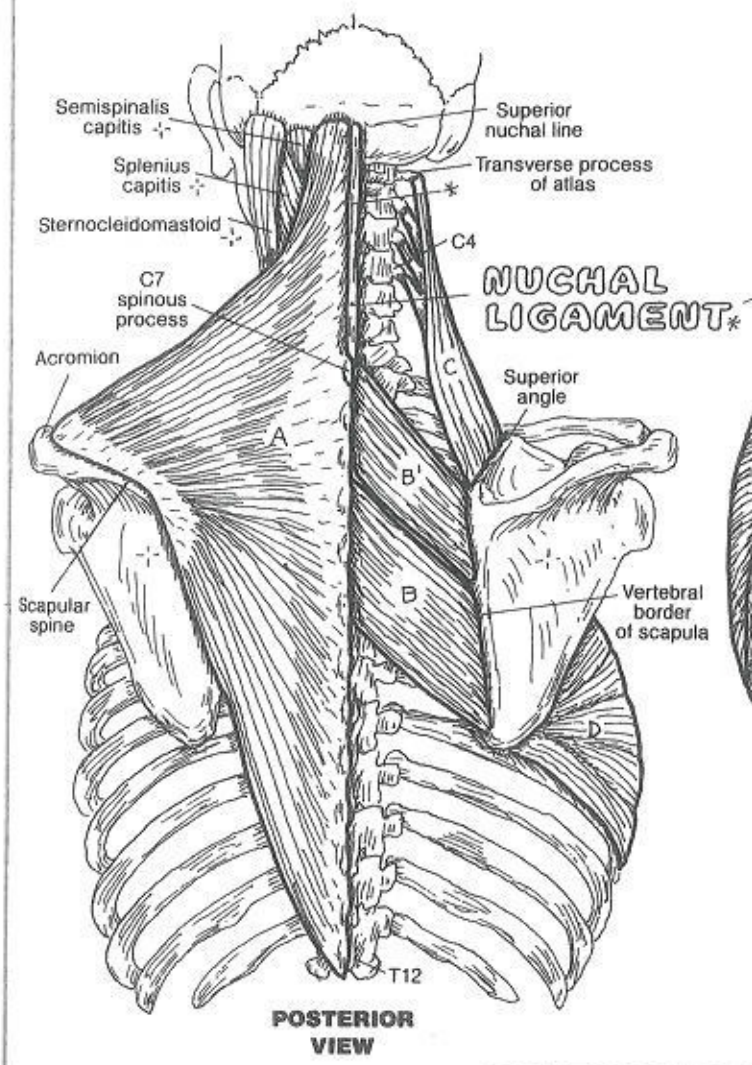
CN: (1) Color the muscles in the three main views, the nuchal ligament, and their names. (2) Color the insertion sites at upper right. (3) In the five illustrations below, note that three different parts of the trapezius, A, make possible different scapular movements. Color gray the scapulae and the direction-of-movement arrows.

MUSCLES

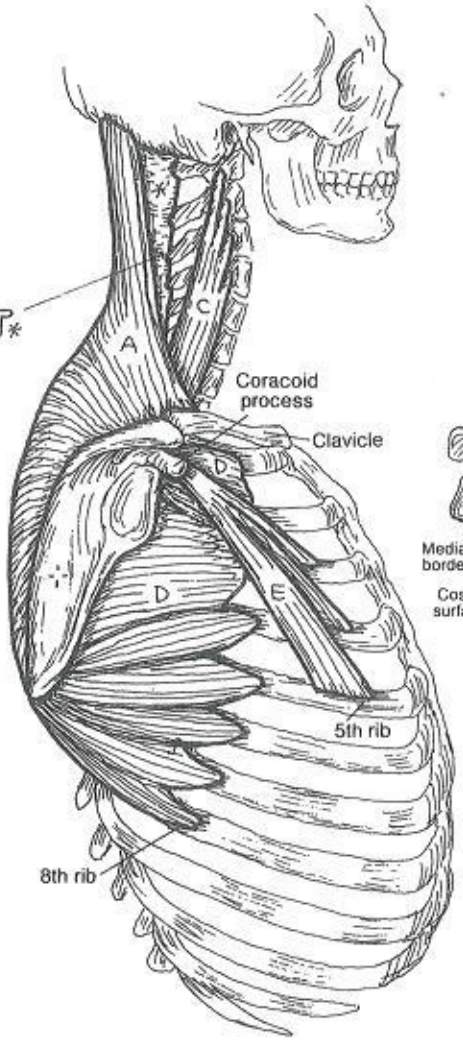
TRAPEZIUS$_A$
RHOMBOID MAJOR$_B$ MINOR$_{B'}$
LEVATOR SCAPULAE$_C$
SERRATUS ANTERIOR$_D$
PECTORALIS MINOR$_E$



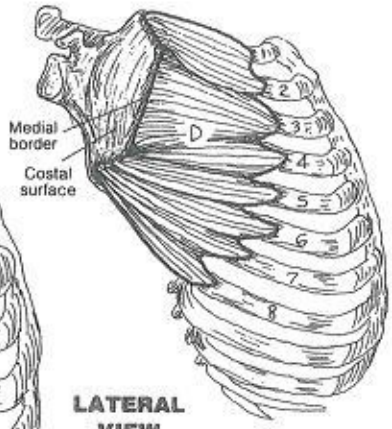
ATTACHMENT SITES



POSTERIOR VIEW

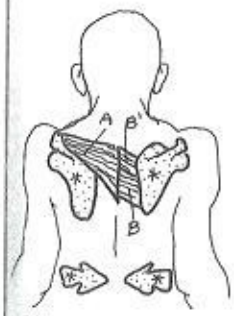


Scapula is shown pulled away from the thorax to reveal attachment of serratus anterior to the medial border of the scapula.

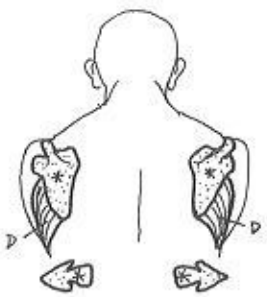


LATERAL VIEW

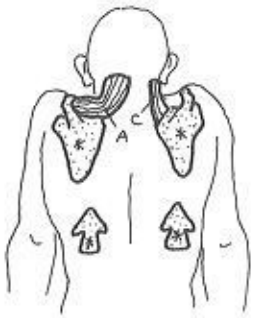
MOVEMENTS OF THE SCAPULA



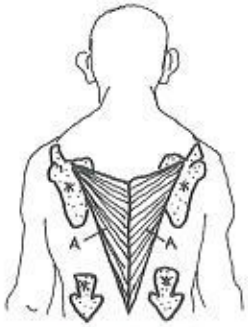
RETRACTION
Military posture ("squaring the shoulders")



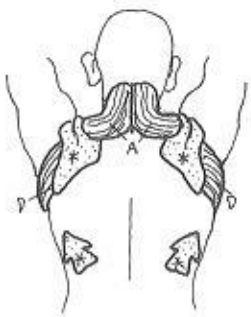
PROTRACTION
Pushing forward with outstretched arms and hands.



ELEVATION
Shrugging the shoulders or protecting the head.



DEPRESSION
Straight arms on parallel bars, holding weight.



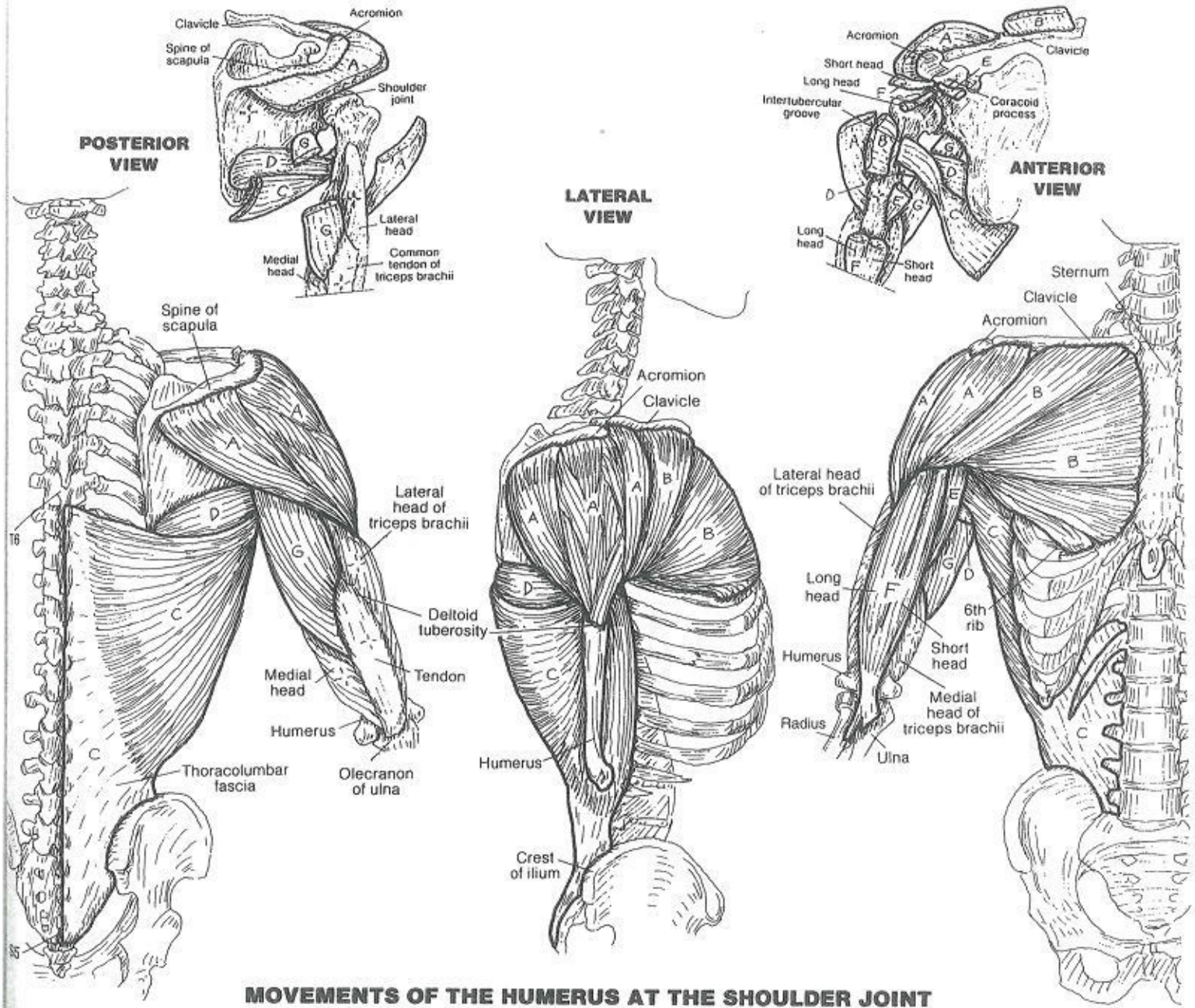
UPWARD ROTATION
Lifting or reaching over head.

MOVERS OF THE SHOULDER JOINT

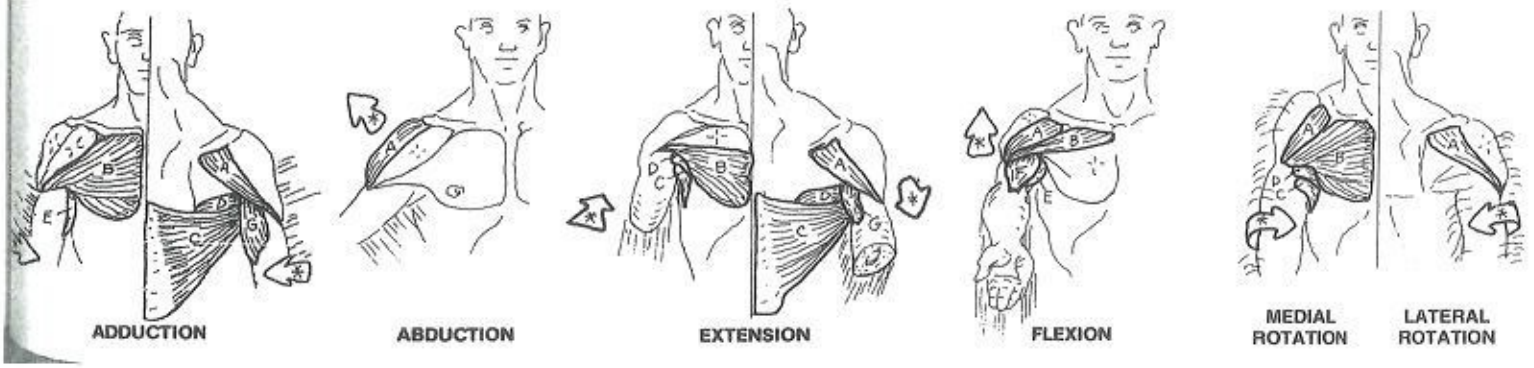
MUSCLES

DELTOID$_A$ PECTORALIS MAJOR$_B$
LATISSIMUS DORSI$_C$ TERES MAJOR$_D$
CORACOBRACHIALIS$_E$ BICEPS BRACHII$_F$
TRICEPS BRACHII (LONG HEAD)$_G$

CN: (1) Begin with both posterior views; note that the biceps and triceps are not shown on the lateral view. (2) When coloring the muscles below, note the actions of different parts of the deltoid, A, and pectoralis major, B.



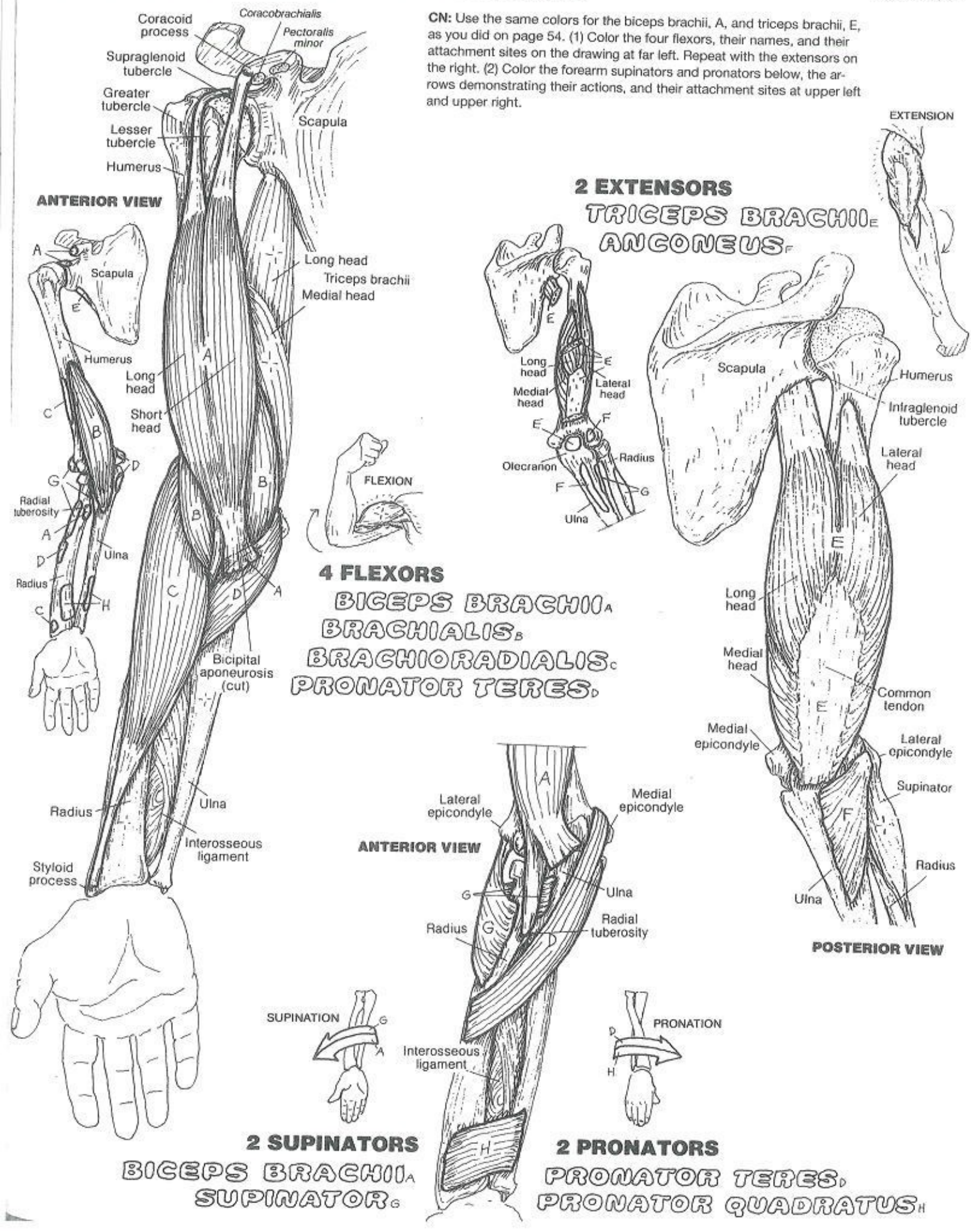
MOVEMENTS OF THE HUMERUS AT THE SHOULDER JOINT



MOVERS OF ELBOW & RADIOULNAR JOINTS

See 29, 31, 43

CN: Use the same colors for the biceps brachii, A, and triceps brachii, E, as you did on page 54. (1) Color the four flexors, their names, and their attachment sites on the drawing at far left. Repeat with the extensors on the right. (2) Color the forearm supinators and pronators below, the arrows demonstrating their actions, and their attachment sites at upper left and upper right.



MUSCLES OF THE GLUTEAL REGION

CN: In the posterior and lateral views of superficial dissections, the upper fibers of the iliotibial tract have been cut and pulled away, exposing gluteus medius. (1) Color the names and structures of the three gluteal muscles in all views. (2) Color the six deep lateral rotators and their names. Color the directional arrows. The origin of the piriformis, E, can be seen on page 50.

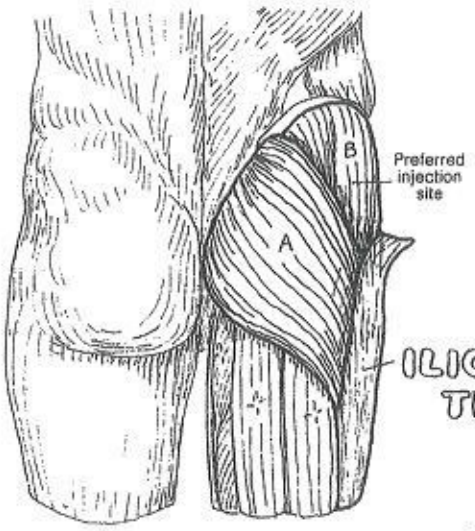
3 GLUTEAL MUSCLES

GLUTEUS MAXIMUS A
GLUTEUS MEDIUS B
GLUTEUS MINIMUS C

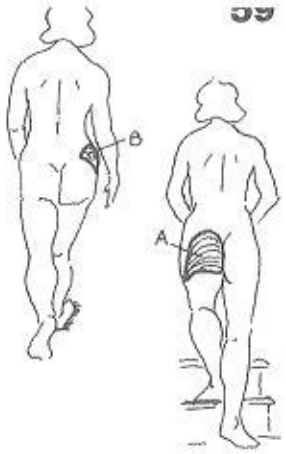
TENSOR FASCIAE LATAE D

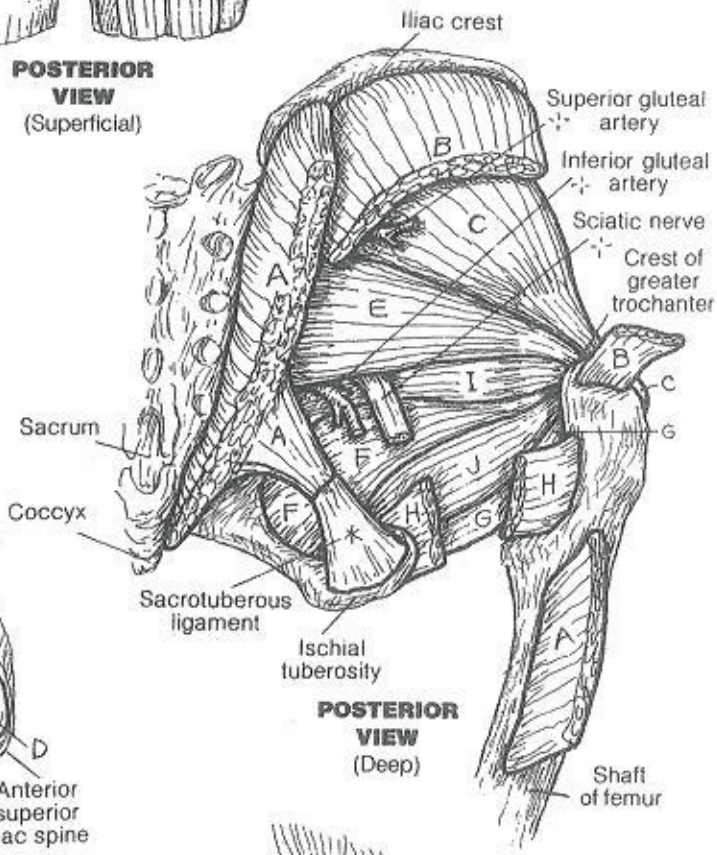
6 DEEP, LATERAL ROTATORS

PIRIFORMIS E
OBTURATOR INTERNUS F
OBTURATOR EXTERNUS G
QUADRATUS FEMORIS H
GEMELLUS SUPERIOR I
GEMELLUS INFERIOR J



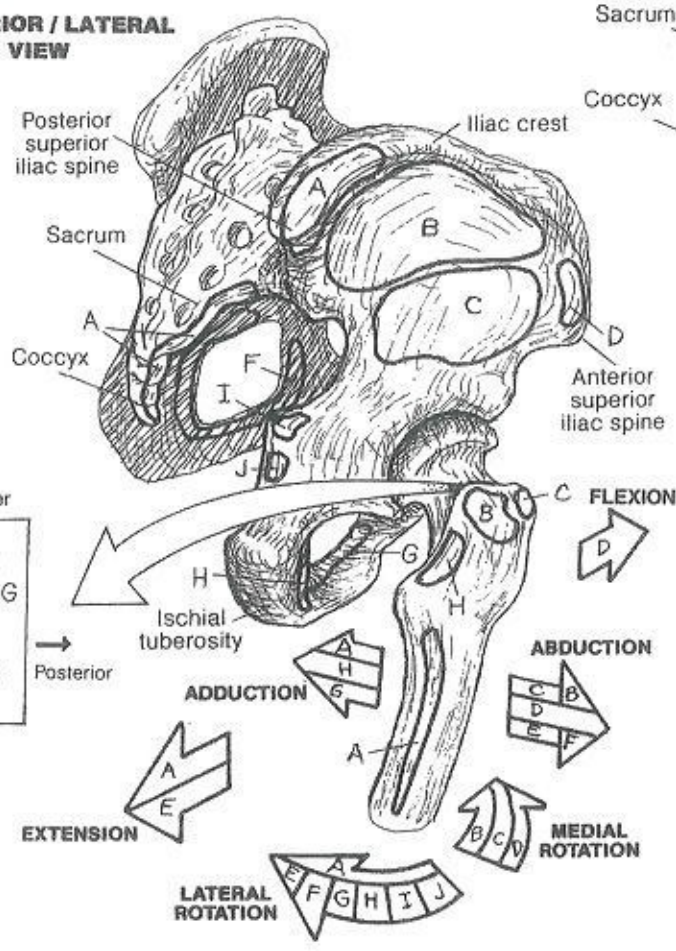
POSTERIOR VIEW (Superficial)

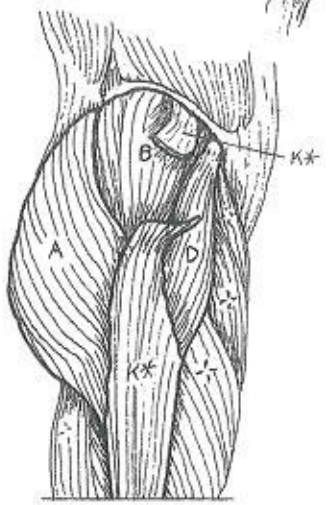




POSTERIOR VIEW (Deep)

POSTERIOR / LATERAL VIEW





LATERAL VIEW (Superficial)

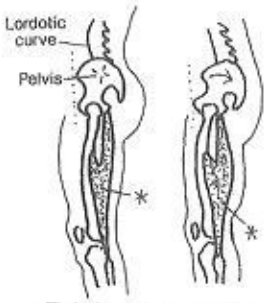
MUSCLES OF THE POSTERIOR THIGH

CN: Use light colors. (1) Color each hamstring muscle in the deep view before going on to the superficial. Color the two smaller muscle diagrams with respect to flexion and extension of the hip and knee joints. (2) Color gray the two diagrams of stippled muscles at upper right.

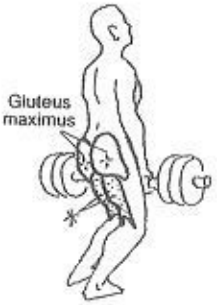
"HAMSTRINGS"

SEMIMEMBRANOSUS$_A$
SEMITENDINOSUS$_B$
BICEPS FEMORIS$_C$

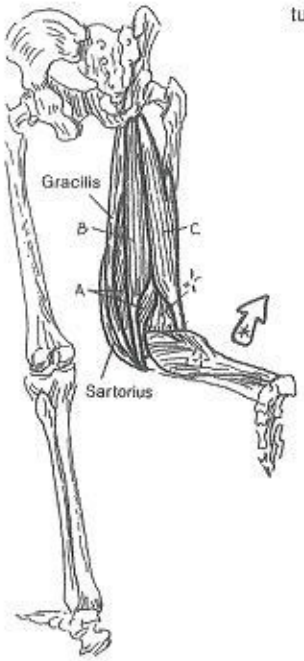
Tight hamstrings limit flexion of hip when knee joint is extended



Tight hamstrings (at right) tilt pelvis backward, flattening lordotic curve of lower back.

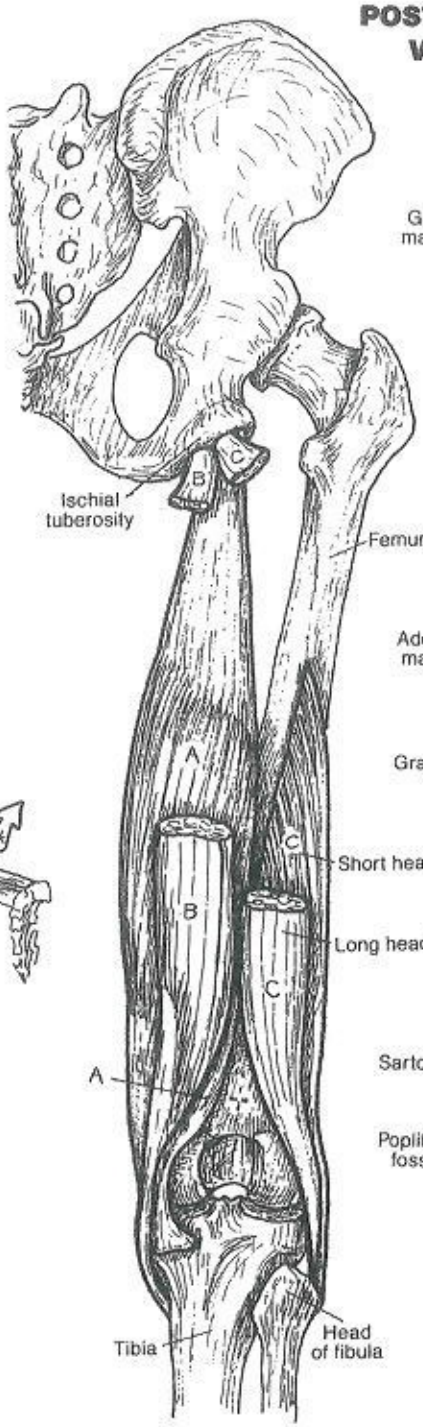


Powerful extensors of the hip joints.

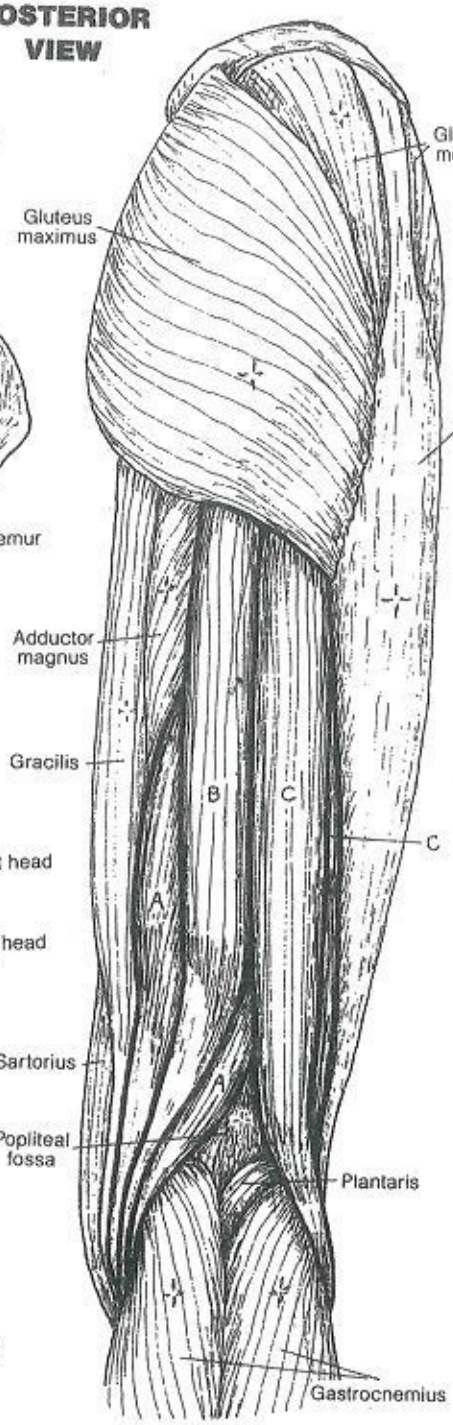


FLEXORS OF THE KNEE JOINT

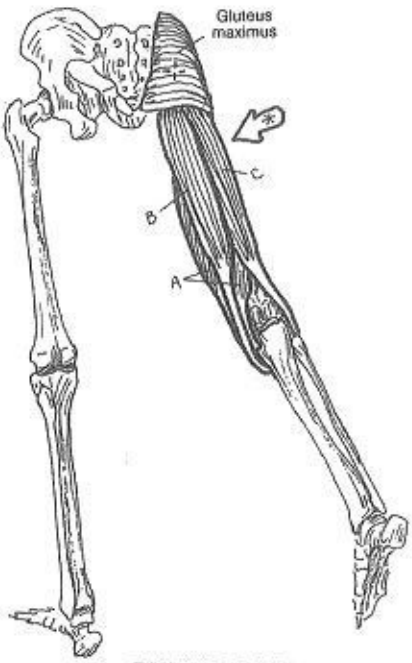
POSTERIOR VIEW



DEEP



SUPERFICIAL



EXTENSORS OF THE HIP JOINT

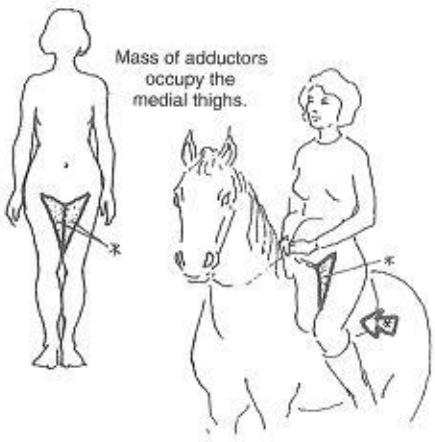
MUSCLES OF THE MEDIAL THIGH

See 60, 62

CN: (1) Color one muscle at a time through the five main views before going to the next one. (2) The dotted lines at far left represent the sites of insertion (linea aspera) for muscles A, B, C, and D on the *posterior* aspect of the femur.

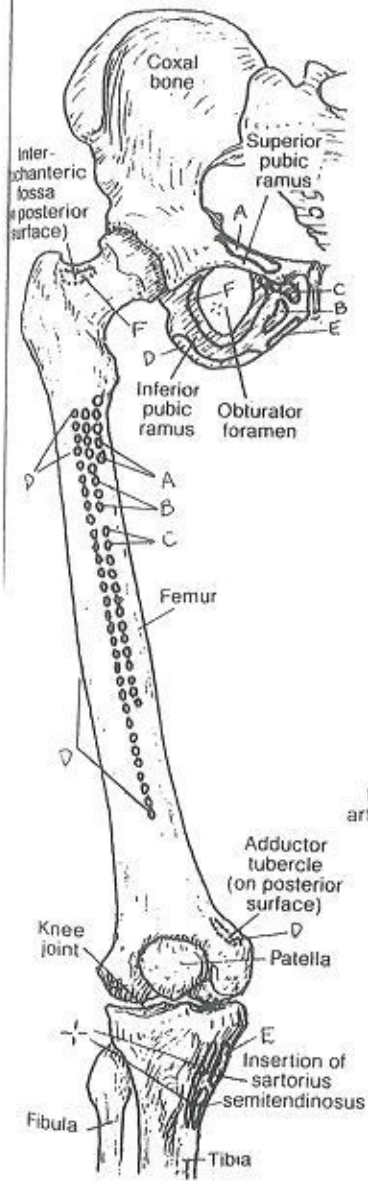
MUSCLES

PECTINEUS A
ADDUCTOR BREVIS B
ADDUCTOR LONGUS C
ADDUCTOR MAGNUS D
GRACILIS E
OBTURATOR EXTERNUS F

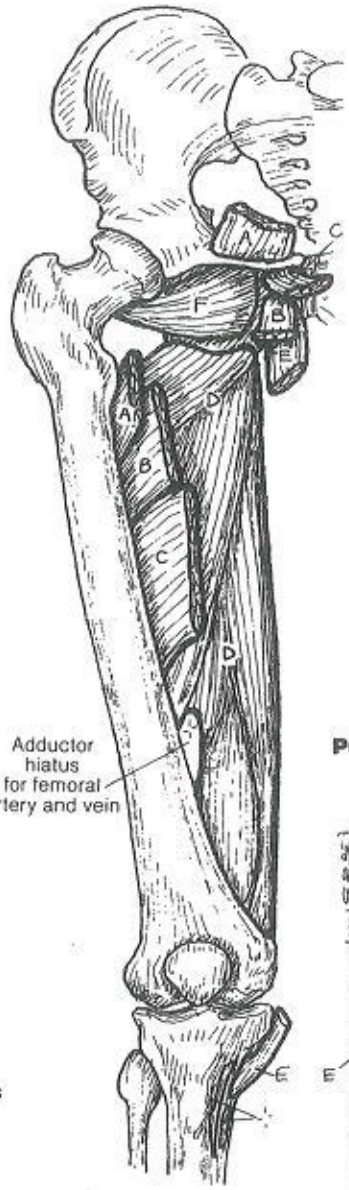


ANTERIOR VIEW

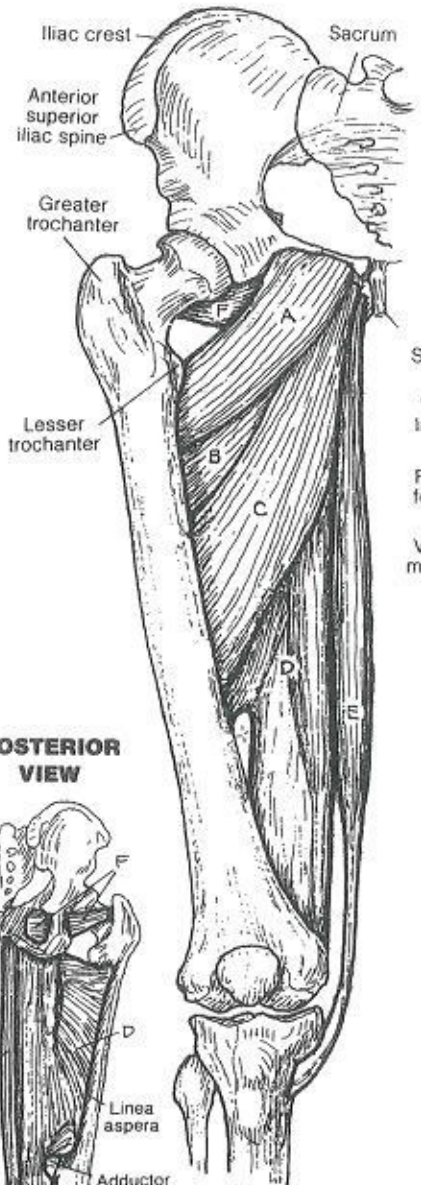
ATTACHMENT SITES



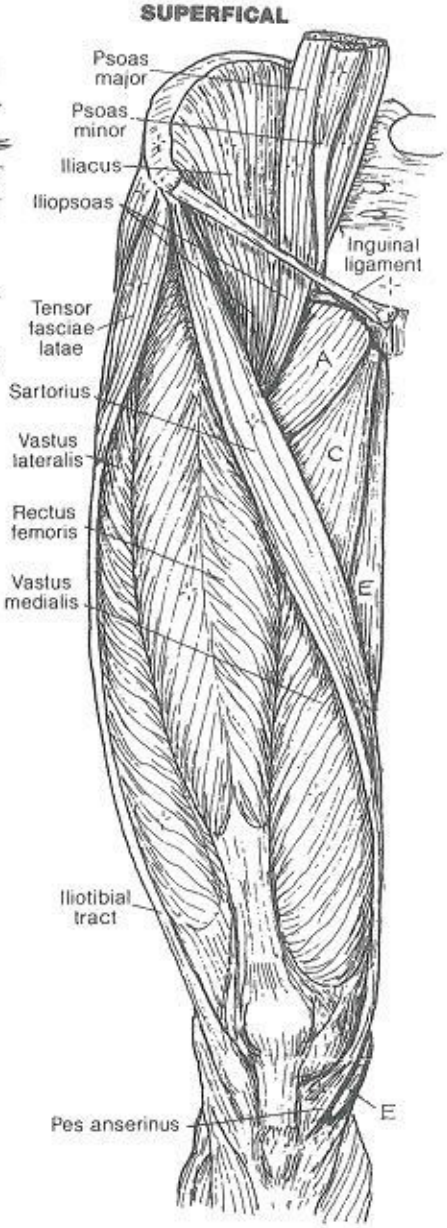
DEEP



INTERMEDIATE



SUPERFICAL



POSTERIOR VIEW

MUSCLES OF THE ANTERIOR THIGH

See 60, 61

CN: The patellar ligament, G*, is colored gray but the patella is left uncolored. (1) Begin with the deep view of the thigh and then complete the superficial view. (2) On the far left, color the visualized portions of the quadriceps that are antagonists to the hamstring group. (3) Complete the action diagrams along the right margin.

MUSCLES

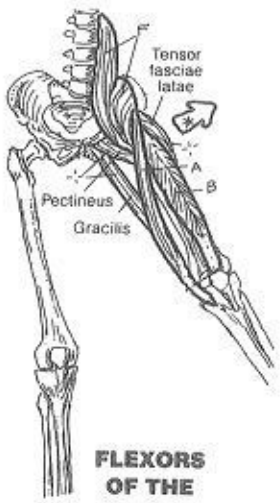
SARTORIUS A

QUADRICEPS FEMORIS

- RECTUS FEMORIS B
- VASTUS LATERALIS C
- VASTUS INTERMEDIUS D
- VASTUS MEDIALIS E

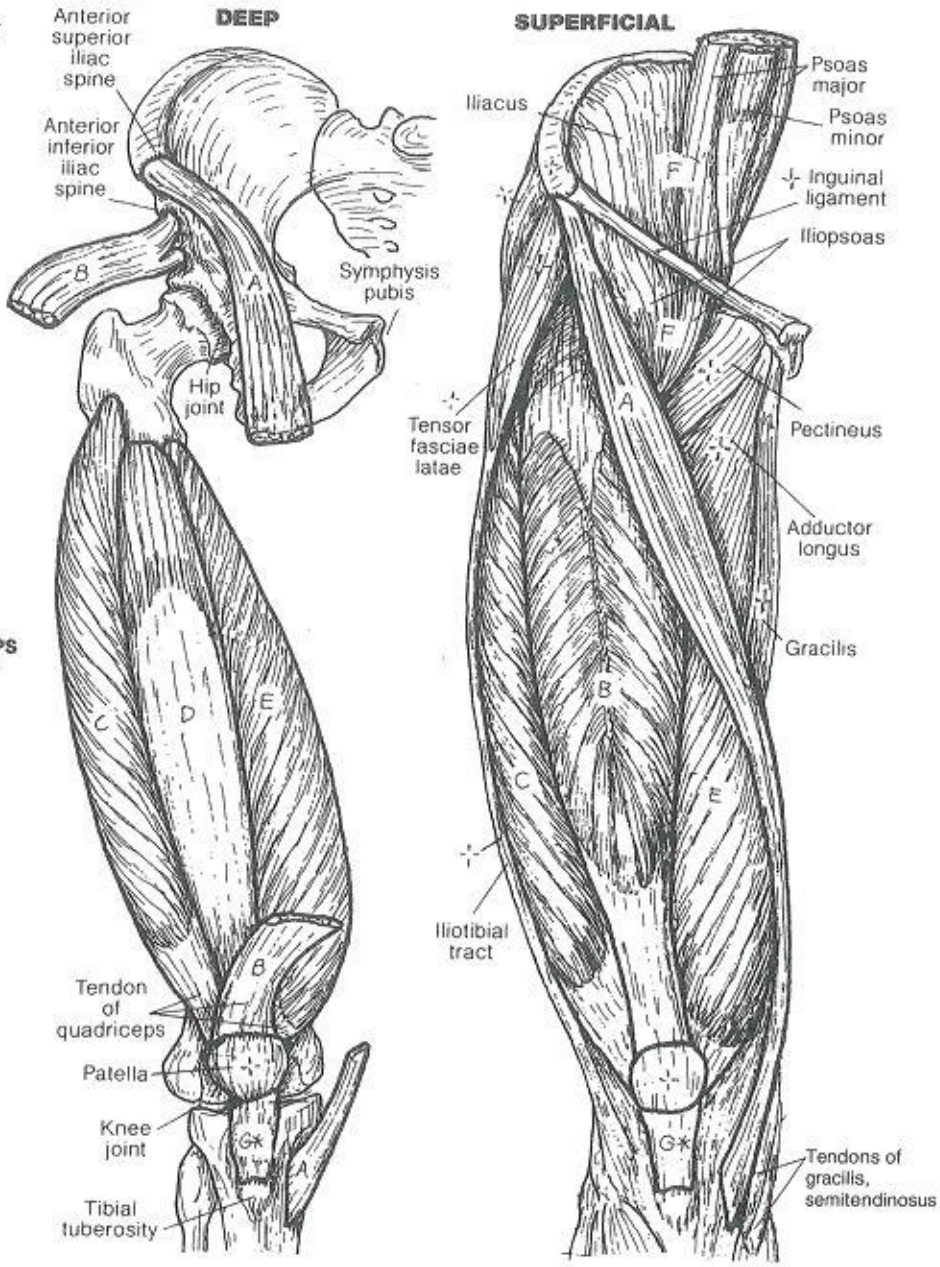
ILIOPSOAS F

PATELLAR LIGAMENT G*



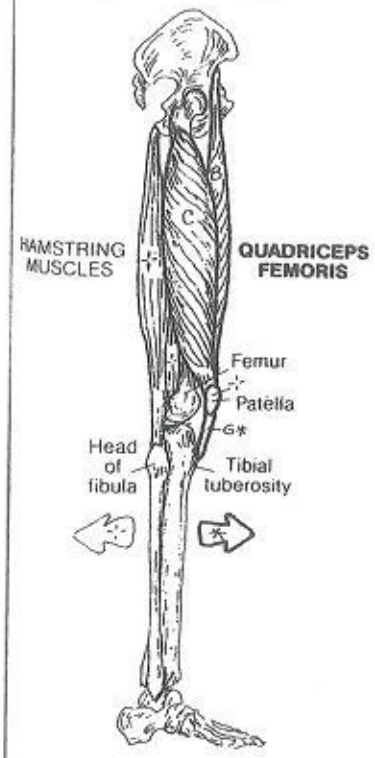
FLEXORS OF THE HIP JOINT

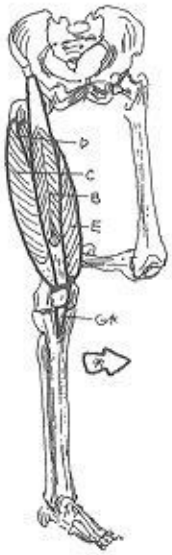
ANTERIOR VIEW



FLEXOR OF THE KNEE JOINT

LATERAL VIEW





EXTENSORS OF THE KNEE JOINT

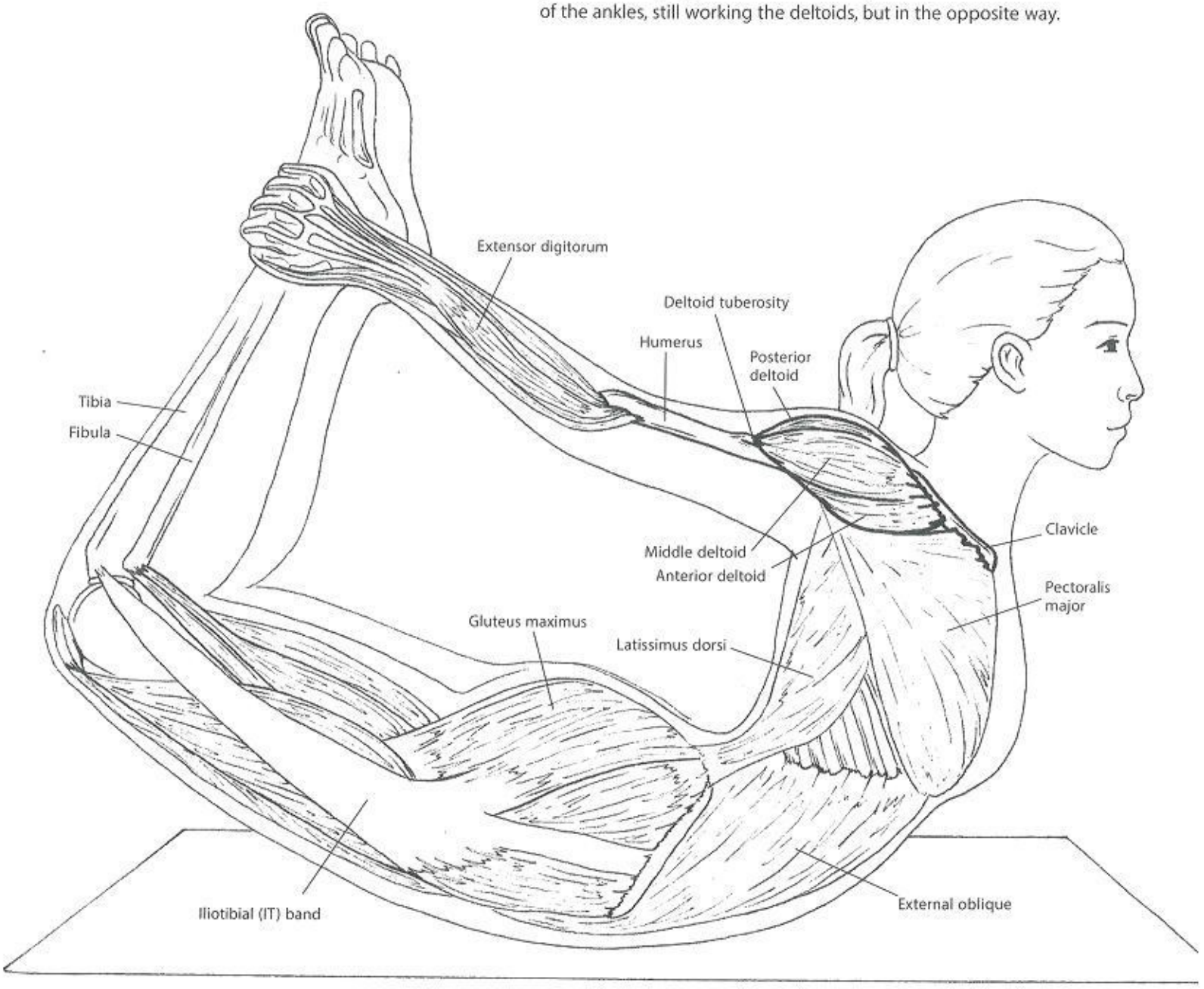
Dhanurasana

don-yoor-AH-sah-nah

Bow

ANTERIOR DELTOID
MIDDLE DELTOID
POSTERIOR DELTOID
DELTOID TUBEROSITY
CLAVICLE

When practicing **dhanurasana**, your deltoids have some work to do. When holding on to the lateral side of your ankles, your posterior deltoids must concentrically contract to hold the medial rotation and extension at the glenohumeral joint and stabilize the shoulder. Conversely, the anterior deltoids must eccentrically contract (remember, this means the muscles lengthen, but are still working) to hold the posture. Some yogis like to switch this up and reach for the medial side of the ankles, still working the deltoids, but in the opposite way.



Paschimottanasana

POS-chee-moh-tahn-AH-sah-nah

Seated Forward Bend

Paschimottanasana is one of the most fundamental yoga postures, but it's not exclusive to yoga. Everybody knows it's a great way to stretch the back of the legs, and you get to sit while you do it! In this simple posture, you can feel muscles playing all these different roles. The hip flexors are the agonist and synergists (with psoas as the prime mover), initiating the forward bend by pulling the hips forward into anterior tilt. The hamstrings in the back of the thighs are playing the role of antagonist by stretching and allowing the hips to anteriorly tilt. The quadriceps muscles act as fixators to keep the knees from bending. There is even more going on here; this is just a snapshot.

PSOAS (PRIME MOVER/ AGONIST)

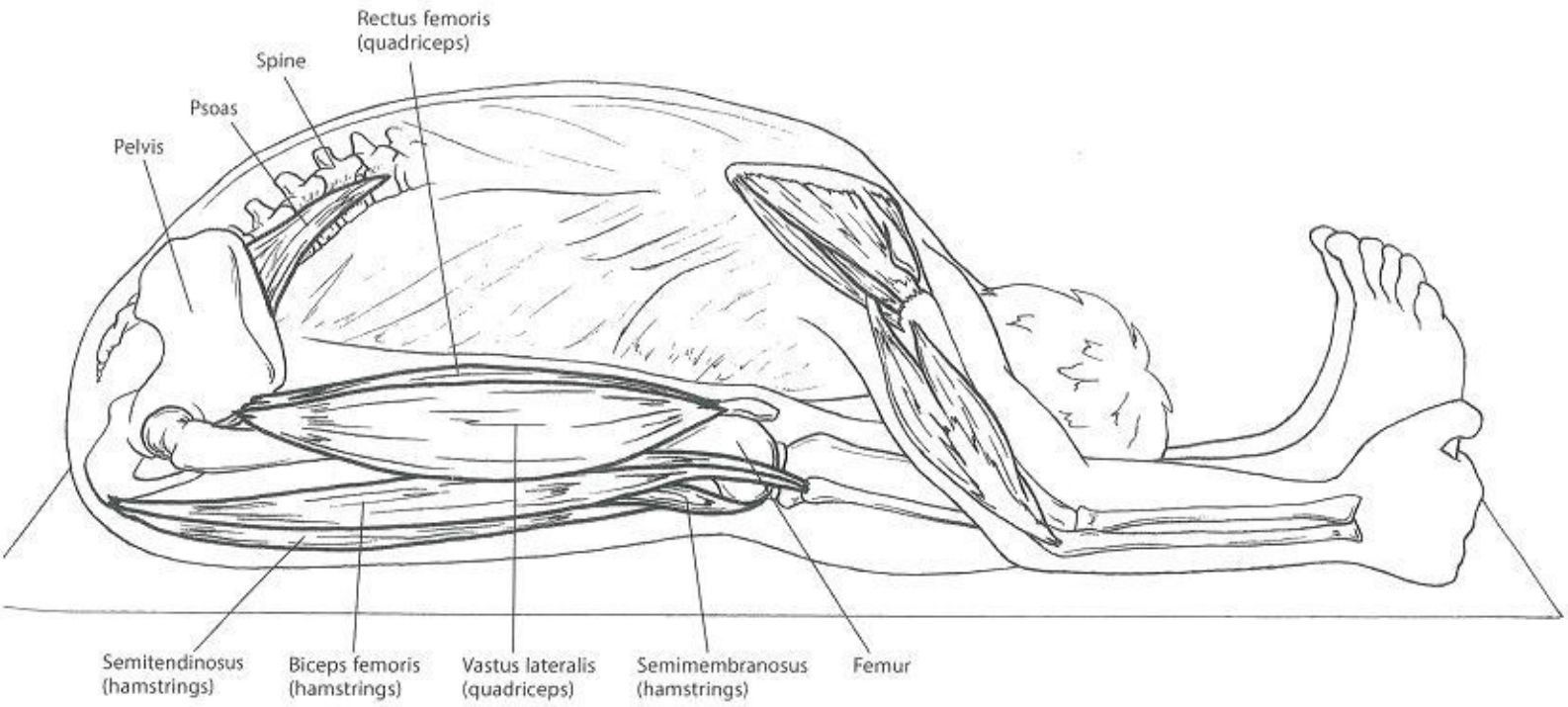
VASTUS LATERALIS (FIXATOR)

RECTUS FEMORIS (AGONIST)

BICEPS FEMORIS (ANTAGONIST)

SEMITENDINOSUS (ANTAGONIST)

SEMIMEMBRANOSUS (ANTAGONIST)



Parsvottanasana

parsh-voh-tahn-AH-sah-nah

Pyramid

Parsvottanasana shows off the IT band, the peroneals, and the TFL beautifully. While this posture is most known for the intense stretch it gives the hamstrings of the front leg, the TFL assists with hip flexion in both legs and medial rotation in the back leg. The IT band keeps that knee stabilized and aligned. The peroneals provide support to the legs and grounding to the feet as you try to maintain an equal distribution of your weight between the front and back foot. Notice how the TFL muscle just morphs right into the IT band.

ILIOTIBIAL (IT) BAND
FEMUR
TIBIA
PERONEAL LONGUS
PERONEAL BREVIS
FIBULA
5TH METATARSAL
CALCANEUS