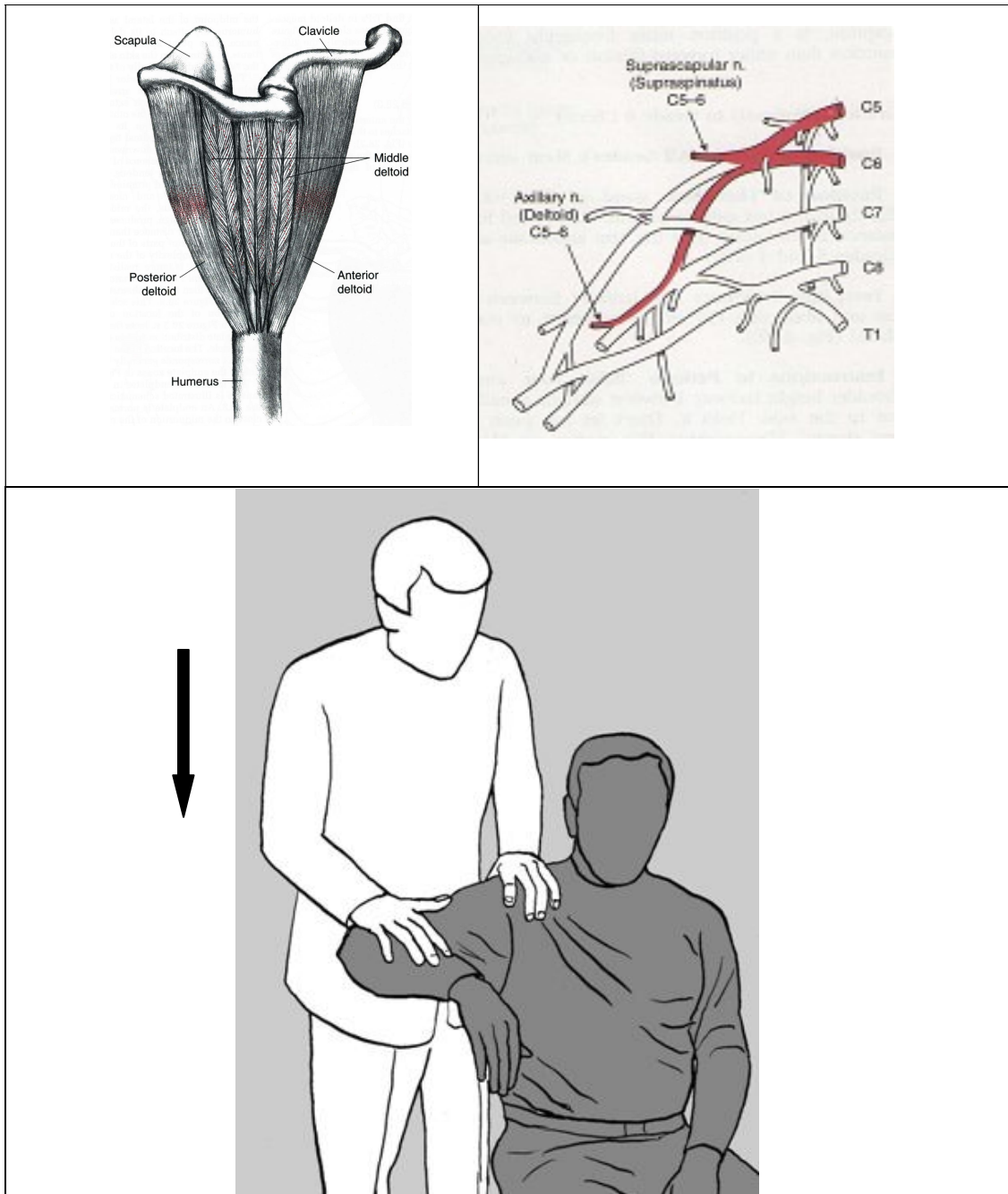
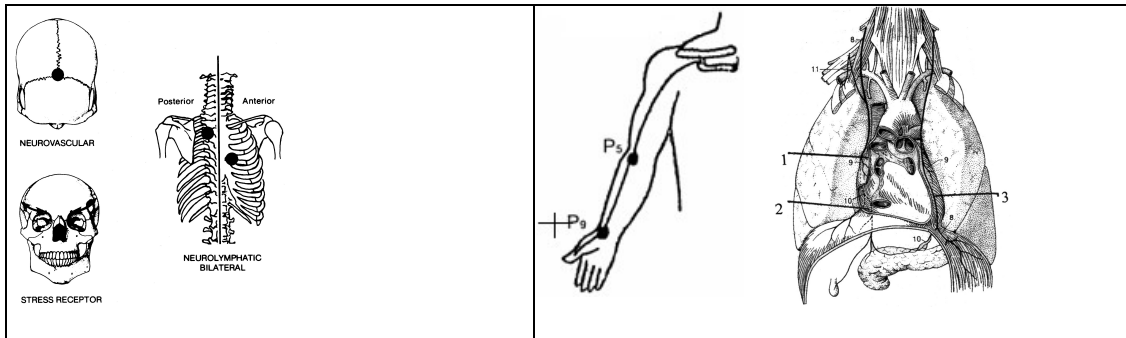


**בדיקת שרירים על פי גישה של
הקינזיולוגיה היישומית**



Deltoid m





Anterior division



Posterior division

Deltoid — Middle Division

Origin: upper surface of acromion process. **Insertion:** deltoid tuberosity of humerus. **Action:** abduction of the humerus.

Test: The seated or standing patient flexes the elbow and abducts the shoulder to 90°. The horizontal forearm indicates neutral humerus rotation. Pressure is applied against the distal end of the humerus in straight adduction.

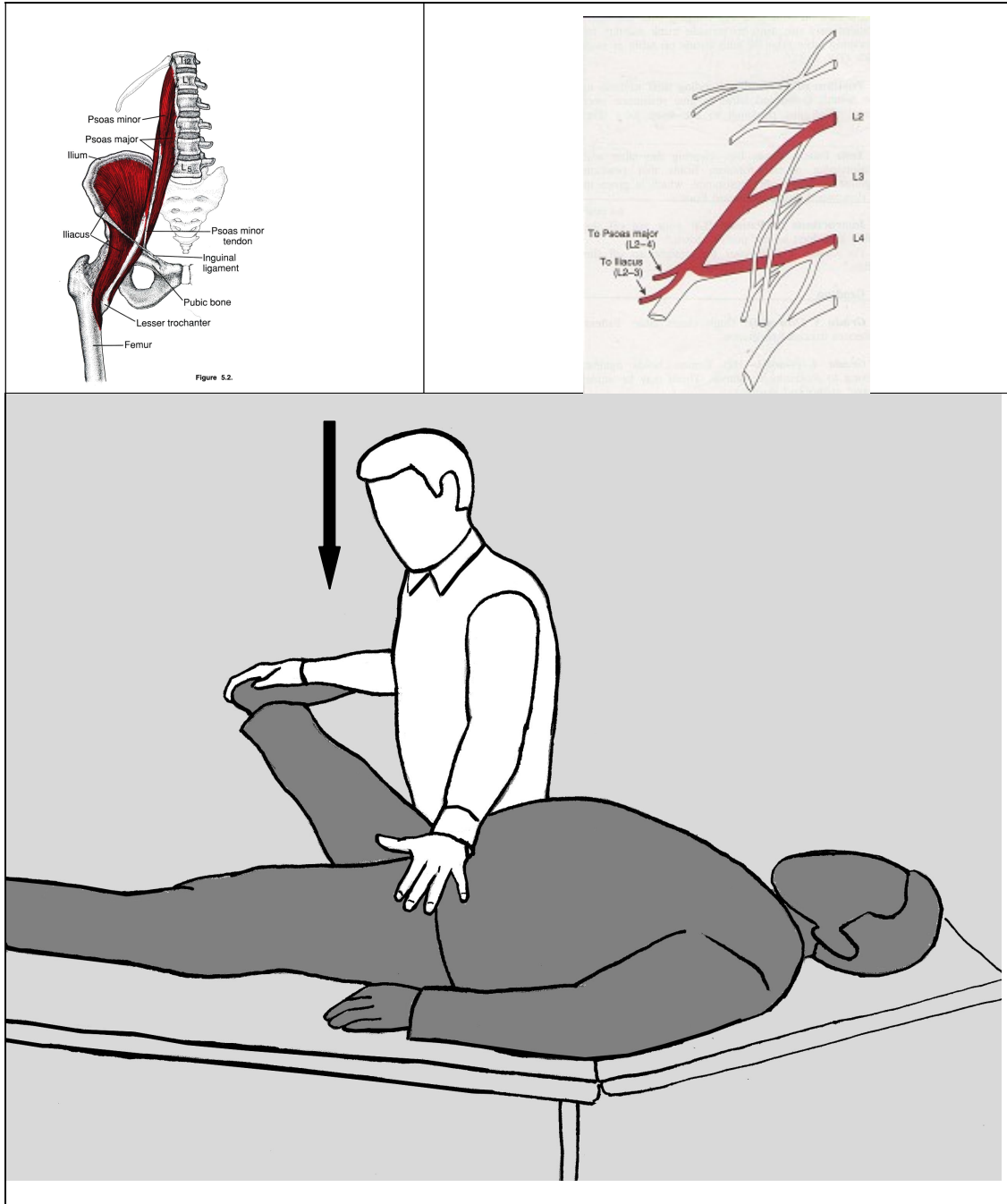
Nerve supply: axillary, C5, 6.

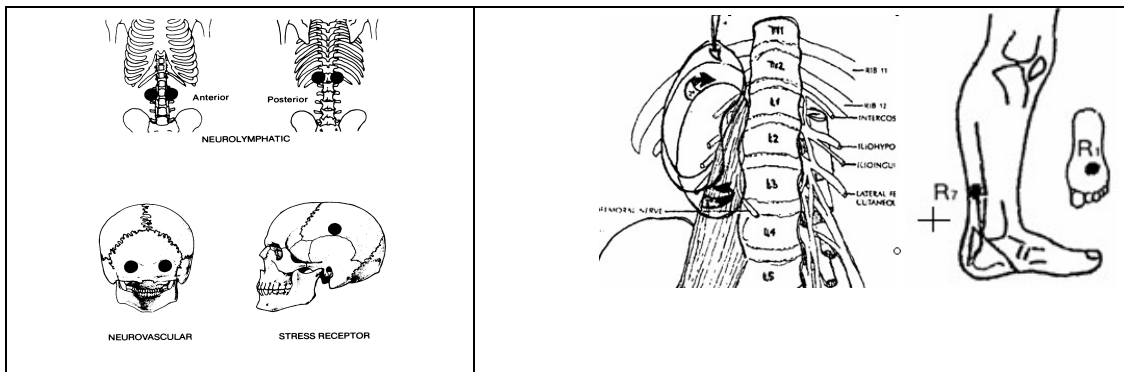
Neurolymphatic: **Anterior:** 3rd intercostal space near sternum. **Posterior:** between T3, 4 near laminae.

Neurovascular: bregma.

Nutrition: lung concentrate or nucleoprotein extract, vitamin C, RNA. **Meridian association:** lung. **Organ association:** lung.

Iliopsoas





Iliacus

Origin: upper two-thirds of the iliac fossa; internal border iliac crest; anterior sacroiliac, lumbosacral and iliolumbar ligaments; ala of sacrum. **Insertion:** lesser trochanter of the femur with psoas major.

Action: with the psoas, flexes thigh; minimal activity on rotation of thigh.

Test: The supine patient places the leg in a position similar to that for the psoas test, only with greater hip flexion and abduction. The examiner makes contact at the anteromedial distal femur or at the ankle, depending on the amount of leverage required. The force is directed toward hip abduction and extension.

Nerve supply: femoral nerve, L1, 2, 3.

Neurolymphatic:

Anterior: 1" above umbilicus and 1" from midline.

Posterior: T12, L1 between spinous and transverse

processes. **Neurovascular:** 1-1/2" lateral to external occipital protuberance.

Nutrition: vitamins A and E, kidney concentrate or nucleoprotein extract. **Meridian association:** kidney.

Organ association: kidney.

Psoas

Origin: anterior surface of transverse processes, lateral border of vertebral bodies and corresponding intervertebral discs T12 through L5.

Insertion: lesser trochanter of the femur with the iliacus. **Action:** flexes and gives minimal action in external rotation and abduction of the thigh. **Test:** The supine patient flexes and

abducts the hip with external thigh rotation. Force is directed against the anteromedial aspect of the leg in a direction of extension and slight abduction. The point of the examiner's contact on the leg depends on the amount of leverage required for the test. On most individuals, adequate leverage is achieved by contacting slightly proximal to the knee. On very strong individuals use a longer leverage, contacting at the ankle. The direction of pressure should be vectored between the activity of the rectus femoris and the adductors.

Nerve supply: lumbar plexus, L1, **2, 3, 4.**

Neurolymphatic:

Anterior: 1" above umbilicus and 1" from midline.

Posterior: T12-L1 between spinous and transverse processes.

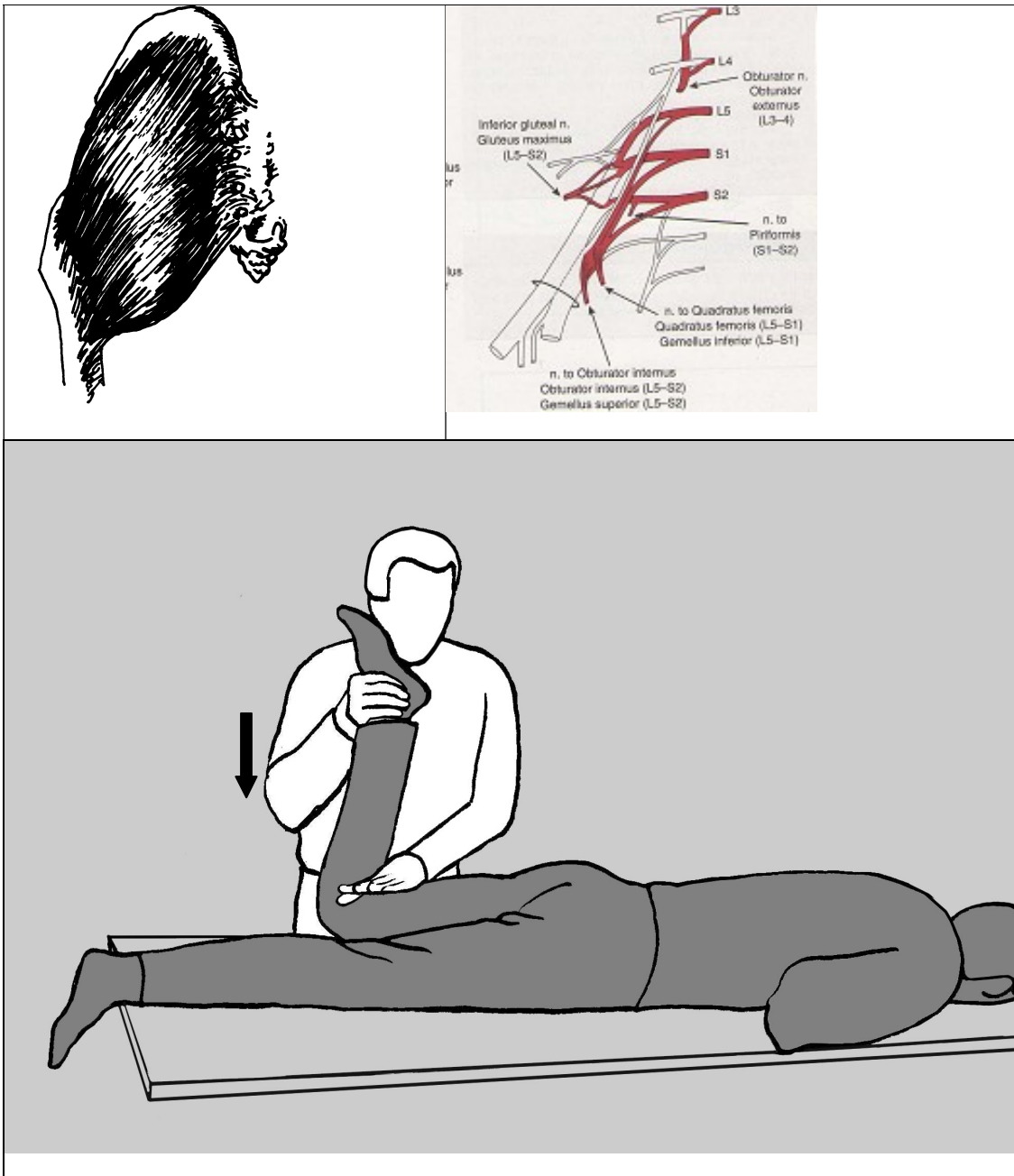
Neurovascular: 1-1/2" lateral to external occipital protuberance.

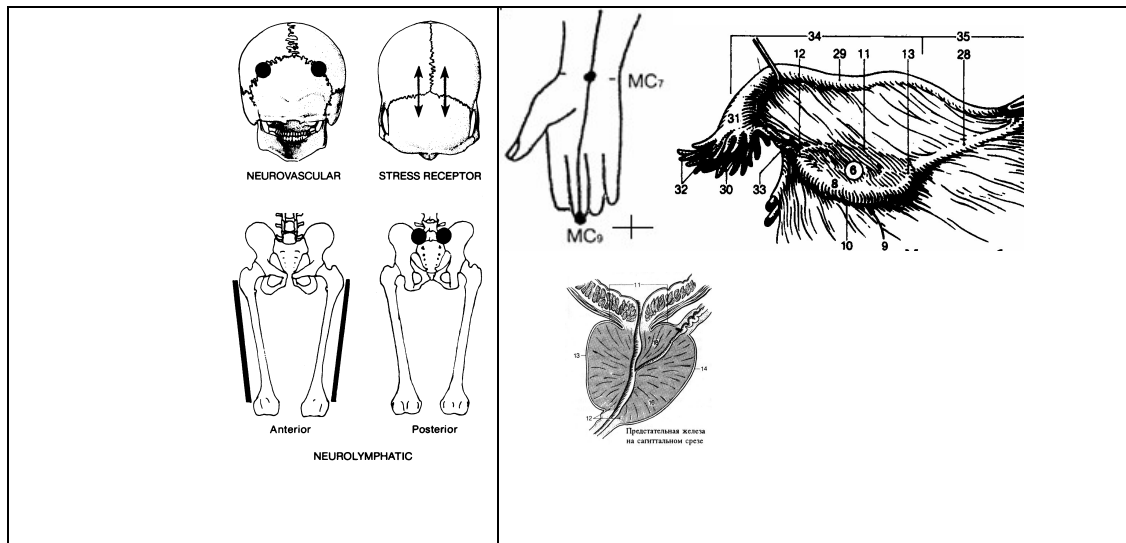
Nutrition: vitamins A and E, kidney concentrate or nucleoprotein extract.

Meridian association: kidney.

Organ association: kidney.

Gluteus maximus





Origin: posterior gluteal line of ilium, tendon of sacrospinal, dorsal surface of sacrum and coccyx, and sacrotuberus ligament.

Insertion: gluteal tuberosity of femur and iliotibial tract of fascia lata.

Action: extends hip, assists in externally rotating the thigh. **Test:** The supine patient flexes the knee and extends the hip. The knee flexion is necessary to help take the hamstrings out of the test. The examiner directs pressure on the distal one-third of the femur in a direction of hip flexion. Observe for adequate pelvic fixation to the trunk by the trunk extensors and oblique abdominal musculature.

Nerve supply: inferior gluteal, L4, 5, SI, 2. **Neurolymphatic:**

Anterior: anterolateral thigh.

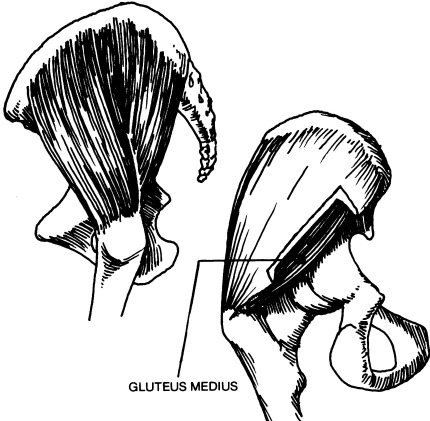
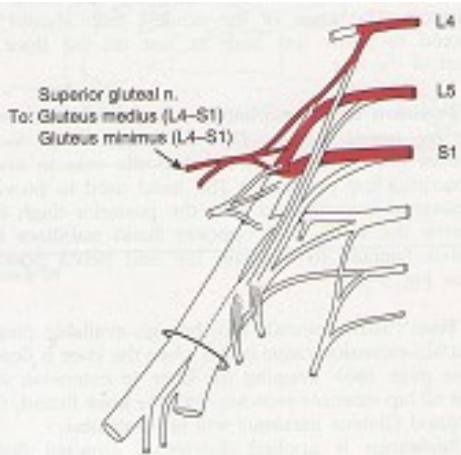
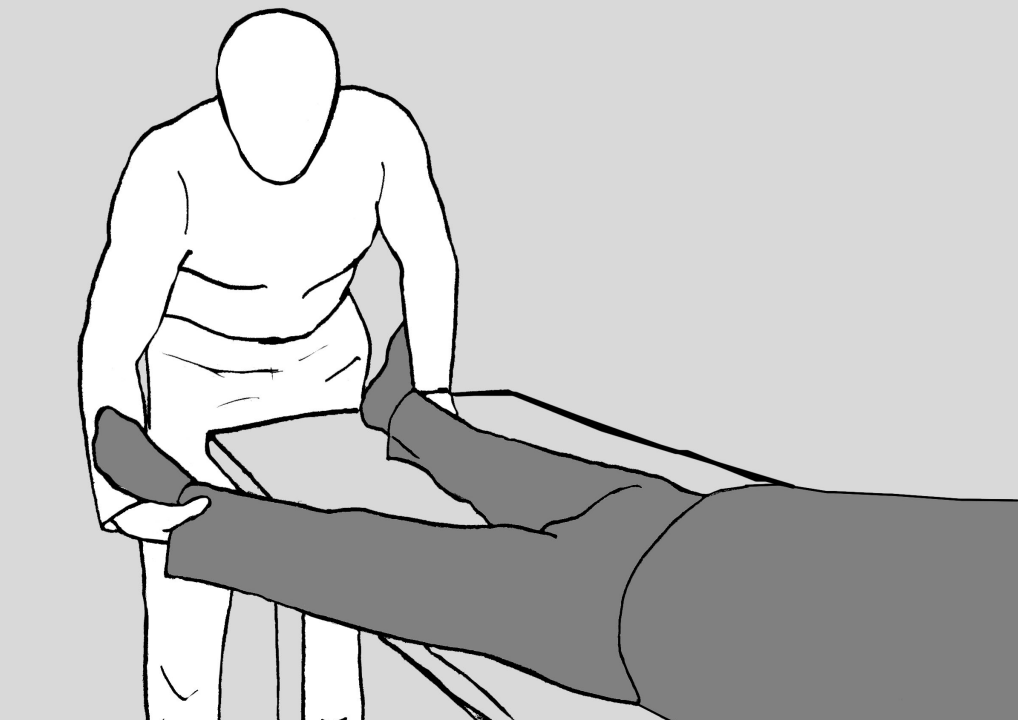
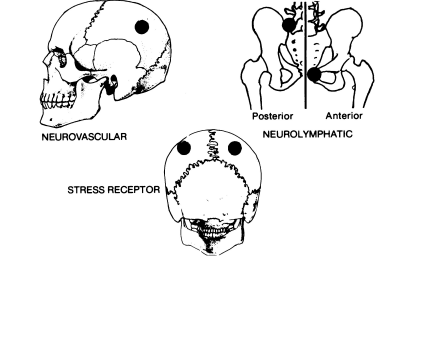
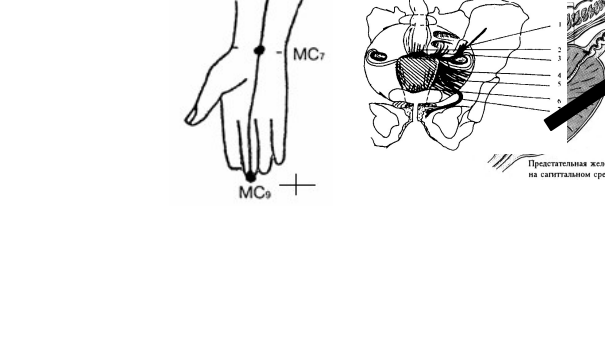
Posterior: between posterior superior iliac spine and

L5 spinous. **Neurovascular:** on the lambdoidal suture midway between lambda and asterion.

Nutrition: vitamin E, male or female endocrine concentrates or nucleoprotein extracts.

Meridian association: circulation sex. **Organ/gland association:** reproductive organs or glands.

Gluteus Medius/Gluteus Minimus

 <p>GLUTEUS MEDIUS</p>	 <p>Superior gluteal n. To: Gluteus medius (L4-S1) Gluteus minimus (L4-S1)</p>
	
 <p>NEUROVASCULAR STRESS RECEPTOR</p> <p>Posterior Anterior NEUROLYMPHATIC</p>	 <p>MC₇ MC₉</p> <p>Предстательная железа на сагиттальном срезе</p>

Gluteus Medius Origin: outer surface of ilium from iliac crest and posterior gluteal line above, to anterior gluteal line below, gluteal aponeurosis.

Insertion: lateral surface of greater trochanter. **Action:** abducts thigh and rotates it internally. With gluteus minimus is major lateral pelvic stabilizer. Aids in early activity of hip flexion.

Gluteus Minimus Origin: outer surface of ilium between anterior and inferior gluteal lines and margin of greater sciatic notch. **Insertion:** anterior border of greater trochanter. **Action:** abducts thigh and rotates it internally; assists gluteus medius in most functions. **Test (both):** The side-lying patient flexes the hip and knee of the lower non-tested leg for stability. The examiner stabilizes the pelvis to prevent rotation. The patient abducts the hip with slight extension, keeping the knee in extension. Pressure is directed against the knee or ankle, depending on leverage required, in a direction of adduction and slight flexion. The patient's effort to shift the pelvis indicates substitution of the tensor fascia lata or gluteus maximus muscle.

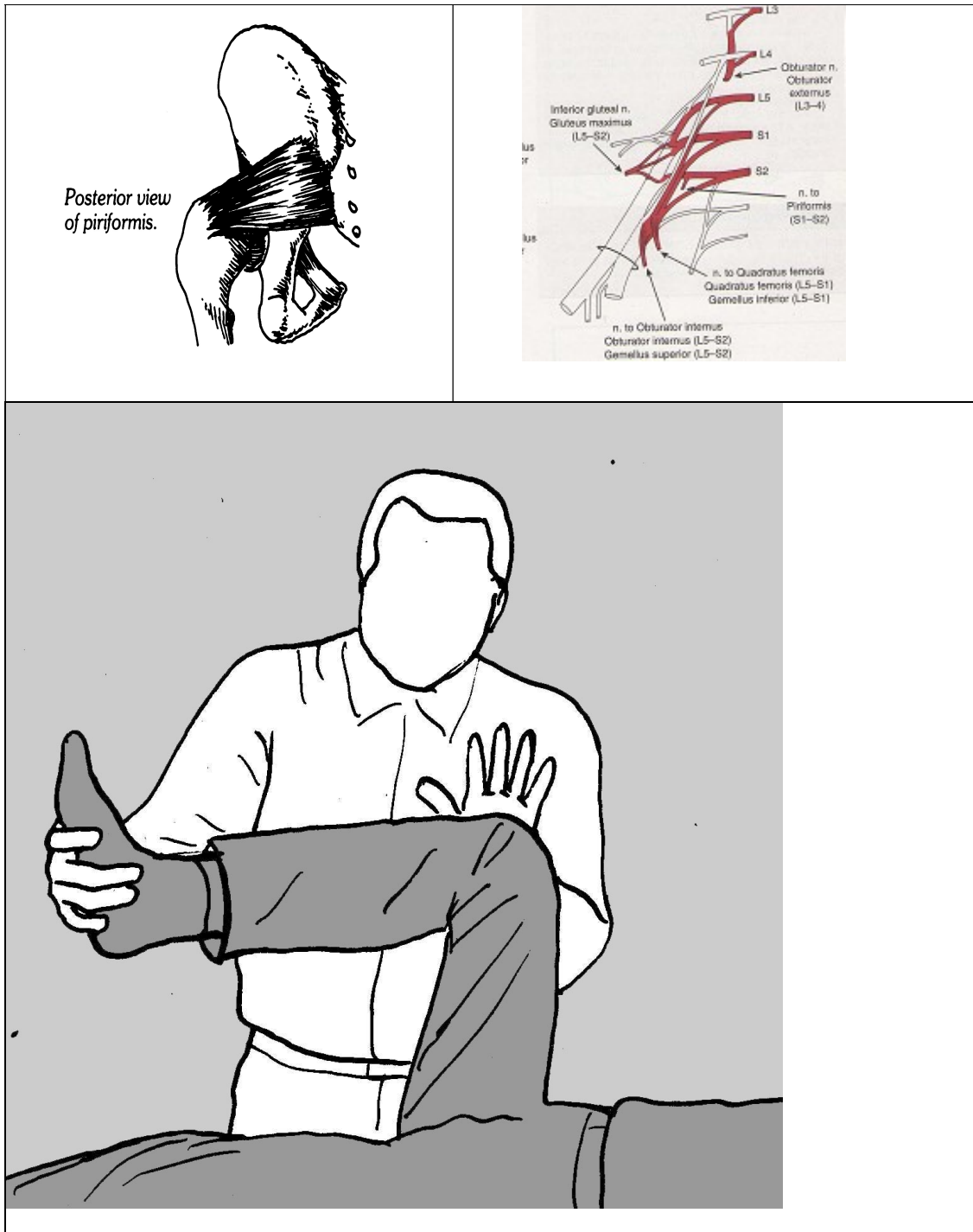
Nerve supply: superior gluteal, L4, 5, SI. **Neurolymphatic:**

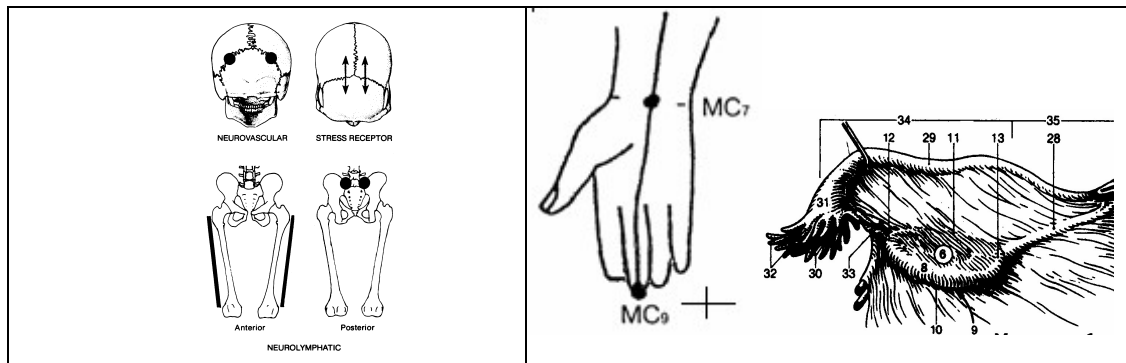
Anterior: upper symphysis pubis.

Posterior: between posterior superior iliac spine and

L5 spinous process. **Neurovascular:** on parietal eminence, posterior aspect. **Nutrition:** vitamin E, male or female endocrine nucleo-protein extracts or concentrates. **Meridian association:** circulation sex. **Organ/gland association:** reproductive organs and glands.

Piriformis





Origin: anterior surface of sacrum between — and lateral to — anterior sacral foramen, capsule of sacroiliac articulation, margin of greater sciatic foramen, and sac-rotuberous ligament.

Insertion: superior border of greater trochanter of femur. **Action:** rotates thigh externally, abducts thigh when limb is flexed. **Test:**

Sitting: The patient's knee is flexed to 90°, and the thigh is externally rotated. Pressure is directed toward the distal leg to internally rotate the thigh while the patient resists.

Prone: The patient flexes the knee to 90° and externally rotates the thigh. The thigh is stabilized by the examiner while pressure is directed to the lower leg to internally rotate the thigh.

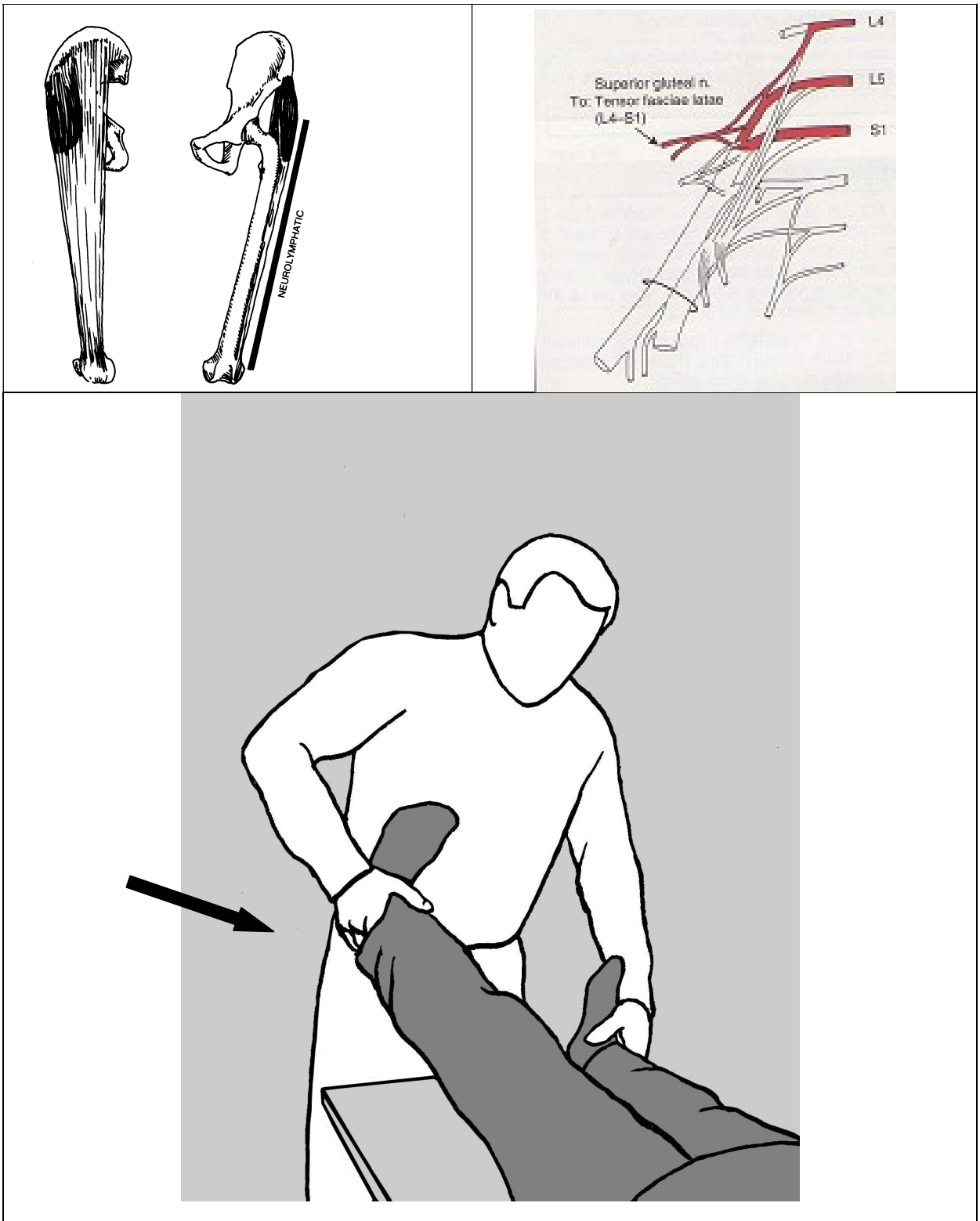
Nerve supply: Sacral plexus, L5, **SI, 2.**

Neurolymphatic:

Anterior: upper symphysis pubis.

Posterior: between posterior superior iliac spine and L5 spinal pr

Tensor Fascia Lata



Origin: anterior part of the outer lip of the iliac crest, anterior border of the ilium.

Insertion: middle one-third of the iliotibial tract of the fascia lata.

Action: thigh flexion, abduction, and internal rotation. Tenses fascia lata along with the gluteus maximus, pulling on the iliotibial band and stabilizing the knee laterally. **Test:** The supine patient holds the leg in a position of abduction, medial rotation, and hip flexion, with the knee in hyperextension. Testing pressure is directed against the lower leg in a direction of adduction and extension. Observe that the patient does not flex the knee during the test.

Nerve supply: superior gluteal, **L4, 5, S1.**

Neuro lymphatic:

Anterior: anterolateral thigh bilaterally. This neurolymphatic reflex is divided into sections correlating with the sections of the large intestine. **Right thigh:** upper portion, cecum; middle three-fifths, ascending colon; lower portion, first portion of transverse colon.

Left thigh: lower portion, last three-fifths of transverse colon; lower middle portion, descending colon; upper middle portion, upper sigmoid colon; upper area, junction of sigmoid colon with rectum.

Posterior: triangular area with apexes at L2, L4, and the crest of the ilium.

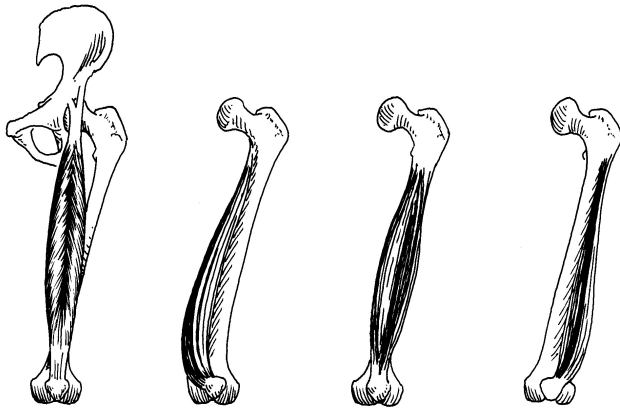
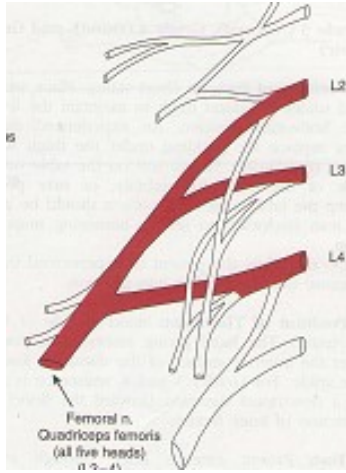
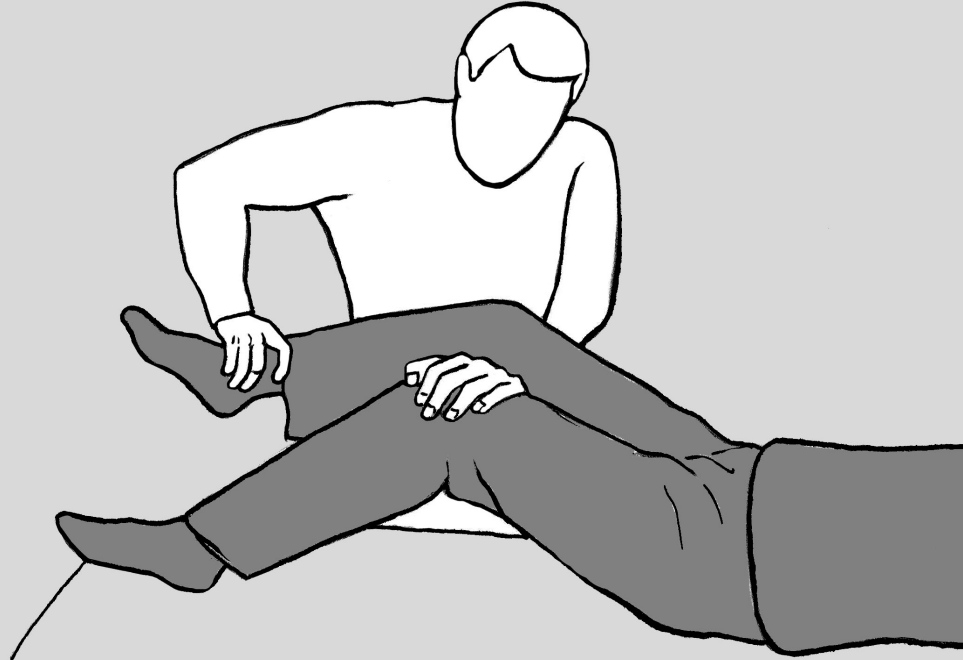
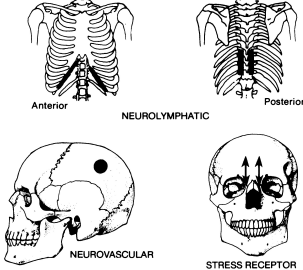
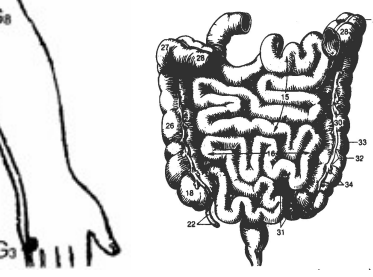
Neurovascular: parietal eminence at the posterior aspect.

Nutrition: acidophilus, vitamin D. If bilateral, evaluate for iron deficiency anemia.

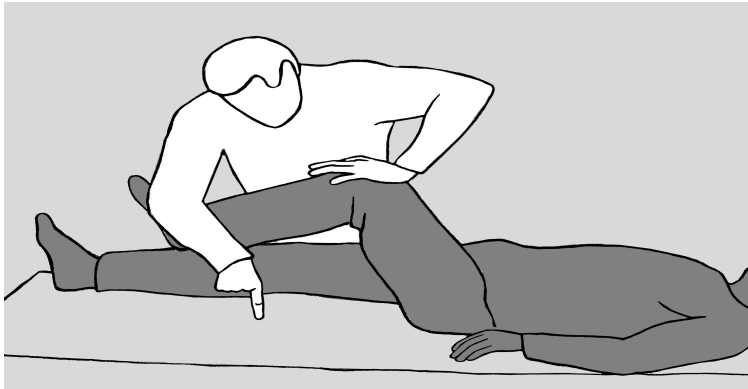
Meridian association: large intestine.

Organ association: large intestine.

Rectus Femoris / Quadriceps

 <p><i>Rectus femoris</i> <i>Vastus medialis</i> <i>Vastus intermedius</i> <i>Vastus lateralis</i></p>	 <p>Femoral n. Quadriceps femoris (all five heads)</p>
	
 <p>Anterior Posterior NEUROLYMPHATIC</p> <p>NEUROVASCULAR STRESS RECEPTOR</p>	





Rectus Femoris Origin:

Straight head: from anterior inferior iliac spine.

Reflected head: from groove on upper brim of

acetabulum. **Insertion:** upper border of patella with the ligamentum patellae extending to tibial tubercle. **Action:** extends the leg and flexes the thigh. **Test:** The examiner directs force against the anterior thigh just proximal to the knee in a direction toward hip extension, ascertaining that no thigh rotation is present and that the knee stays flexed approximately 90°. A slightly built examiner may need to hold the side of the table to provide added power in this test. The psoas is very active in this test and must be evaluated separately to make a comparison with the rectus femoris. Observation of the patient going into the test position reveals considerable information regarding his hip flexor strength.

Vastus Medialis Origin: lower half of the intertrochanteric line, linea aspera, medial supracondylar line, medial intermuscular septum, tendons of adductor magnus and adductor longus. **Insertion:** medial border of the patella with the ligamentum patellae extending to the tibial tubercle. **Action:** extends the leg and draws the patella medially.

Vastus Intermedius Origin: proximal two-thirds of the anterolateral surface of the femur, lower half of the linea aspera, upper part of the lateral supracondylar line, lateral intermuscular septum. **Insertion:** by tendons of the rectus and vastus muscles into the superior border of the patella with the ligamentum patellae extending to the tibial tubercle. **Action:** extends the leg.

Vastus Lateralis Origin: intertrochanteric line, greater trochanter, gluteal tuberosity, linea aspera, lateral intermuscular septum, capsule of the hip joint.

Insertion: lateral border of the patella with the ligamentum patellae extending to the tibial tubercle. **Action:** extends the leg and draws the patella laterally. **Test (as a group):** With the patient seated, the examiner directs pressure against the distal anterior leg just above the ankle in the direction of knee flexion. Care must be taken not to allow the patient to lock the knee in extension. If the table edge is sharp, the examiner should place his hand under the knee to cushion it. The examiner should observe for change of pelvic position during the testing procedure.

Nerve supply: femoral, **L2, 3, 4.**

Neurolymphatic:

Anterior: along costochondral junction of the 8th-11th ribs. Activity of this linear neurolymphatic is inverse to involvement of the quadriceps muscle divisions. In other words, for the vastus lateralis, neurolymphatic activity will be medial; for the vastus medialis, the activity will be lateral on the reflex area.

Posterior: T8-11 laminae.

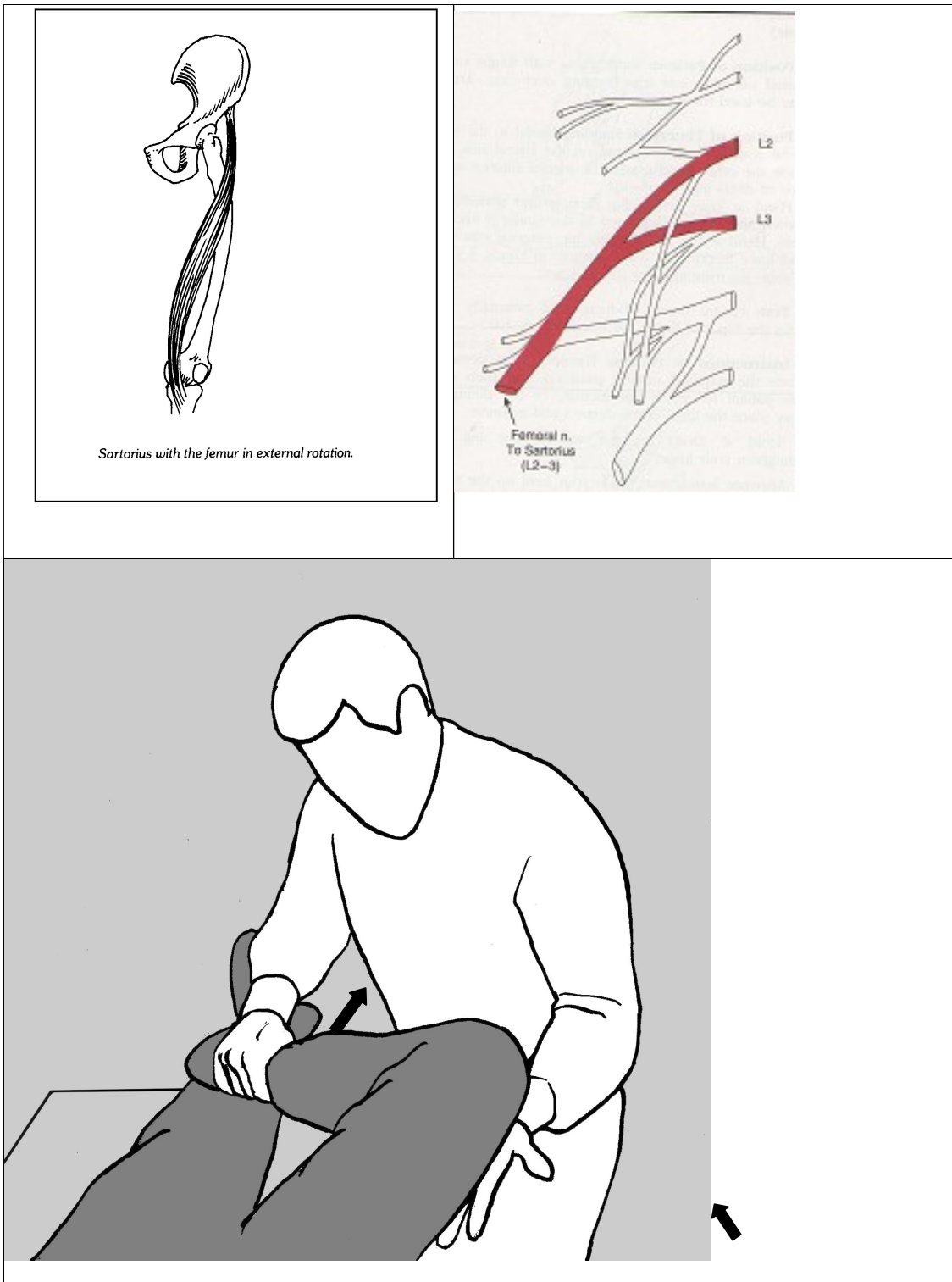
Neurovascular: parietal eminence, posterior aspect.

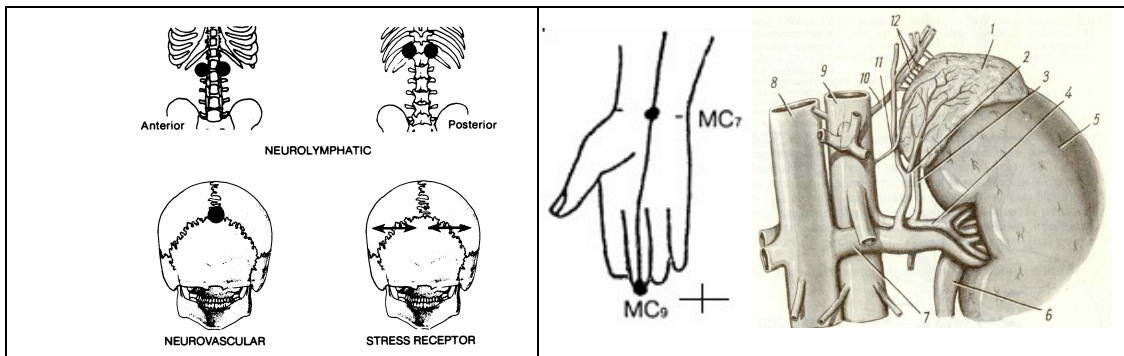
Nutrition: vitamin D, vitamin B complex, small intestine nucleoprotein extract or concentrate.

Meridian association: small intestine.

Organ association: small intestine.

Sartorius





Origin: anterior superior iliac spine, upper half of the iliac notch.

Insertion: upper part of medial surface of the tibia, near the anterior border.

Action: flexes knee and hip, rotates the thigh externally. When knee is flexed, rotates tibia internally. Gives medial support to the knee.

Test: The supine patient flexes the hip and knee with abduction of the hip. The examiner directs force against the anterolateral leg, just proximal to the knee, in a direction of hip extension, adduction, and medial rotation. With the other hand he grasps the posterior ankle and extends the knee. **Nerve supply:** femoral, **L2, 3.** **Neurolymphatic:**

Anterior: 2" above the umbilicus and 1" from the midline.

Posterior: T11, 12 bilaterally near laminae.

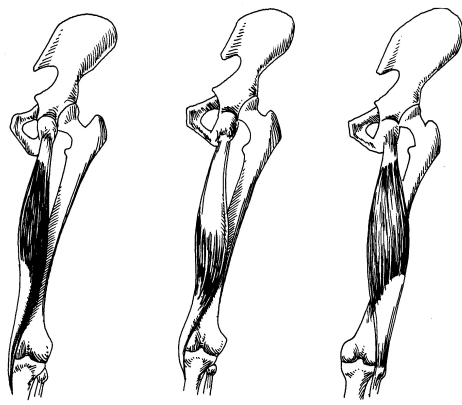
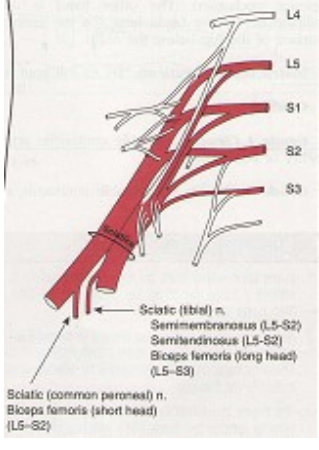
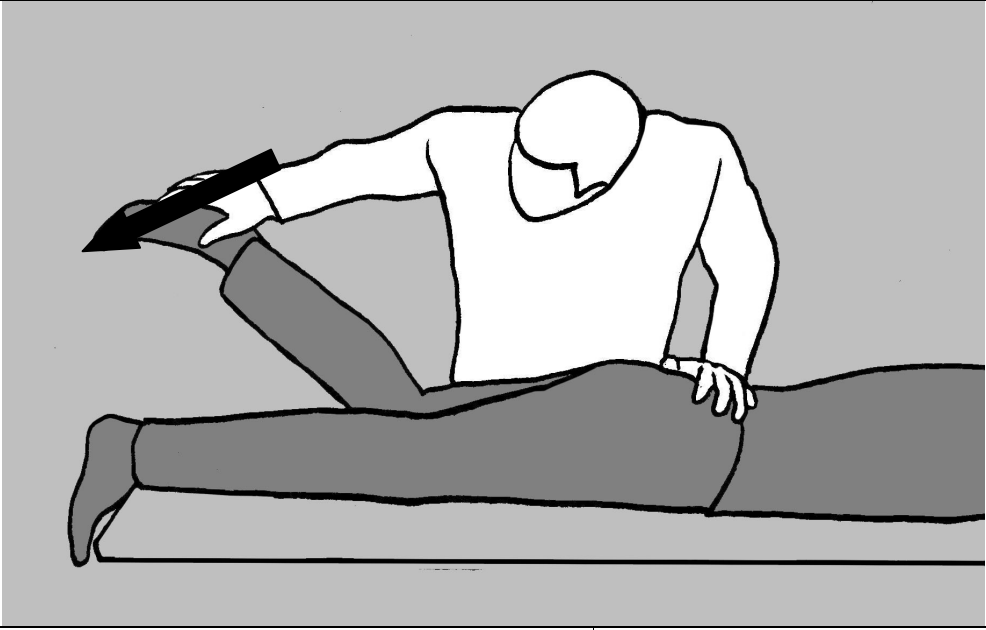
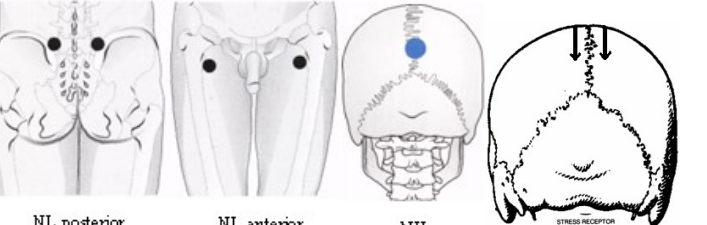
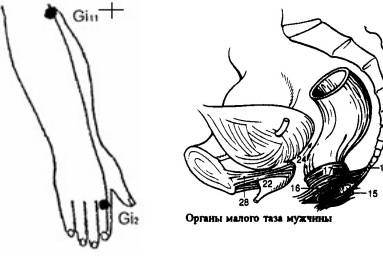
Neurovascular: lambda.

Nutrition: adrenal nucleoprotein extract or concentrate, vitamin C, pantothenic acid.

Meridian association: circulation sex (occasionally triple heater).

Gland association: adrenal.

Hamstrings

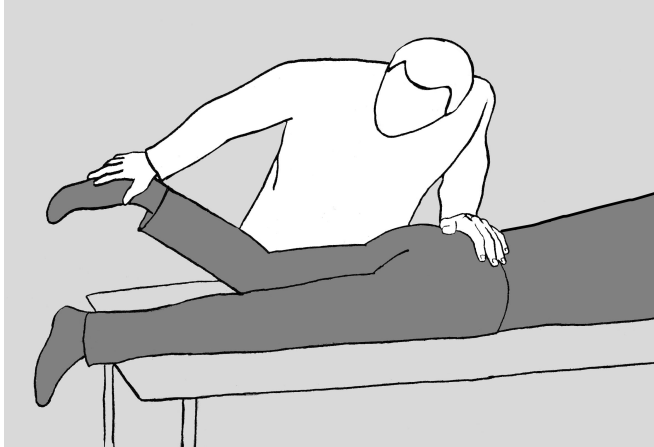
 <p>Semitendinosus Semimembranosus Biceps femoris</p>	 <p>L4 L5 S1 S2 S3</p> <p>Sciatic (tibial) n. Semimembranosus (L5-S2) Semitendinosus (L5-S2) Biceps femoris (long head) (L5-S3) Sciatic (common peroneal) n. Biceps femoris (short head) (L5-S2)</p>
	
 <p>NL posterior NL anterior NV stress receptors</p>	 <p>G11+ G12</p> <p>Orgаны малого таза мужчины</p>

Semitendinosus — Medial Hamstring Origin: ischial tuberosity with tendon of biceps femoris.
Insertion: proximal portion of medial surface of the tibia and deep fascia of the leg.

Nerve supply: sciatic (tibial branch, which develops two branches), L4, 5, SI, 2.

Semimembranosus — Medial Hamstring Origin: upper and lateral aspect of ischial tuberosity.
Insertion: posteromedial surface of the medial condyle of the tibia.

Action of medial hamstrings: flexes and internally rotates the knee; extends, adducts, and internally rotates the thigh.

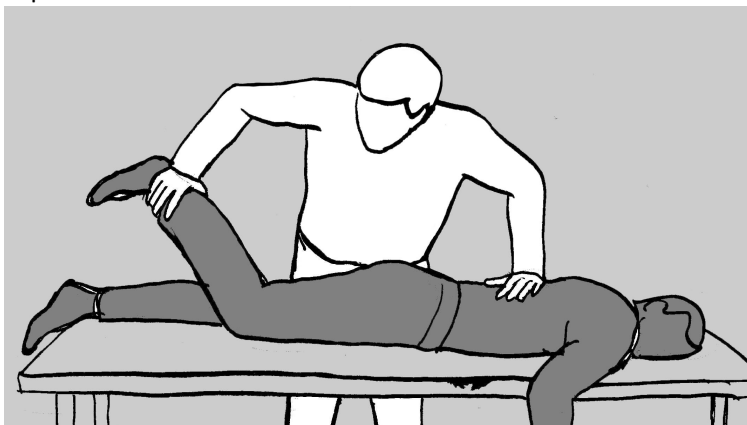


Nerve supply: sciatic (tibial branch), L4, 5, SI, 2. **Test for medial hamstrings:** Pressure is directed against the distal leg in a direction of knee extension, slightly laterally. The examiner should note the direction of pressure that best raises the medial hamstring tendons and minimizes the raising of the lateral hamstring tendon.

Biceps Femoris — Lateral Hamstring Origin:

Long head: ischial tuberosity and sacrotuberous ligament.

Short head: lateral lip of linea aspera, lateral supracondyle of femur, and lateral intermuscular septum.



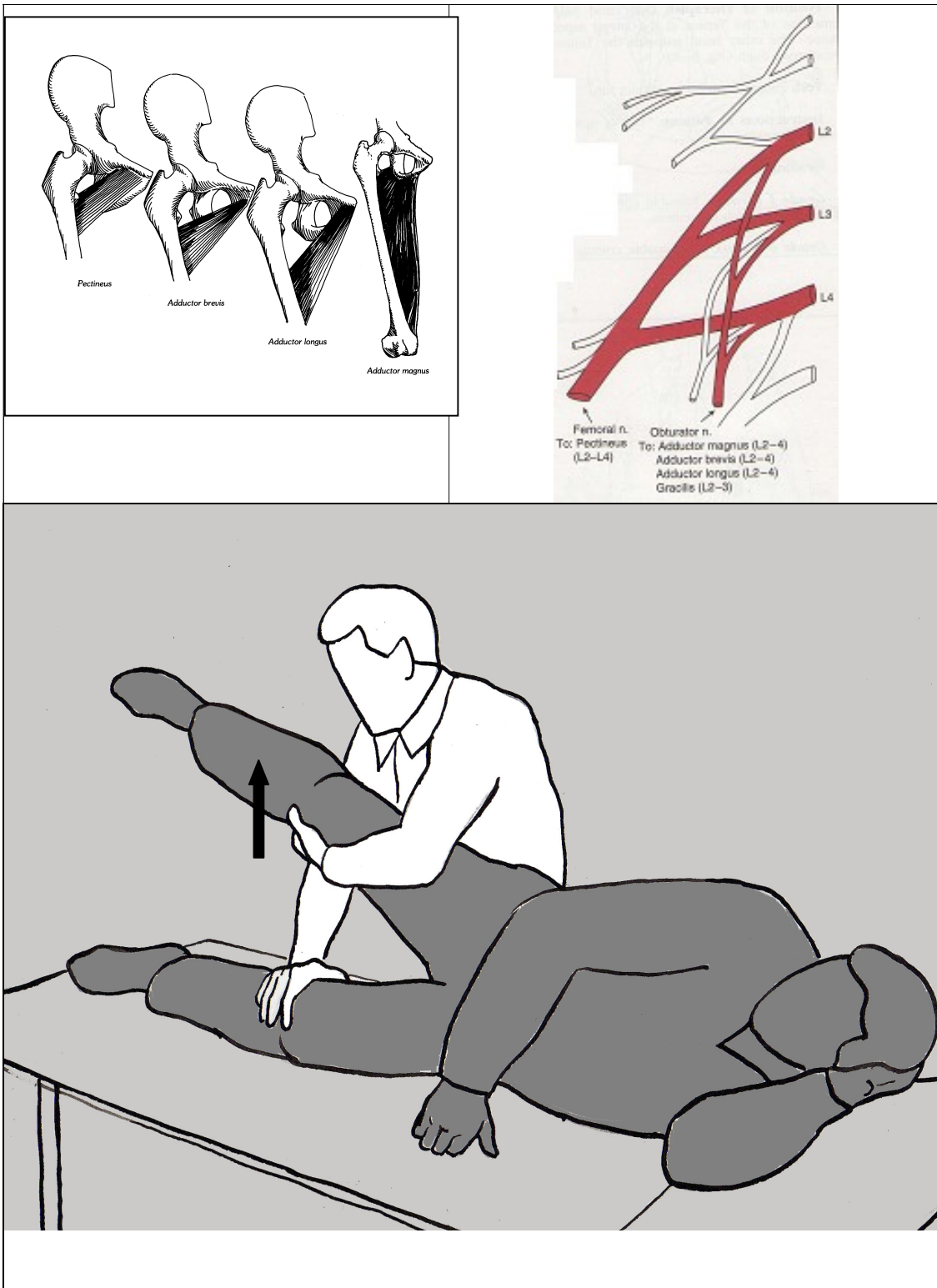
Insertion: lateral side of the head of the fibula, lateral condyle of the tibia, deep fascia on the lateral side of the leg.

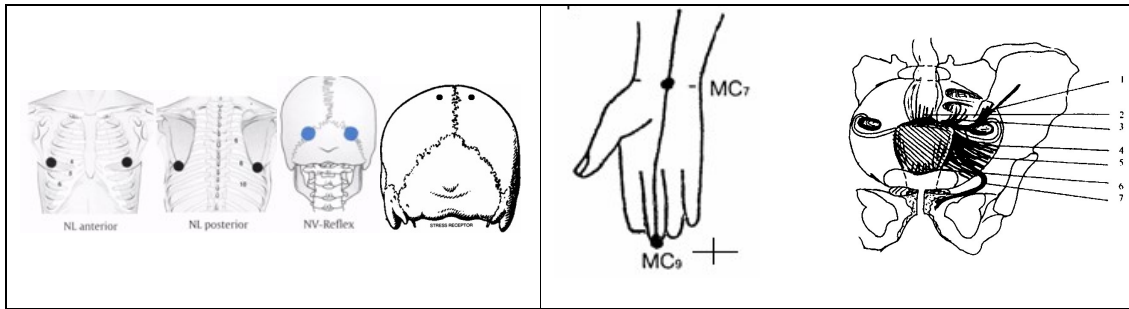
Action: flexes knee, extends thigh, externally rotates the knee joint, externally rotates and adducts thigh. **Nerve supply:**

Long head: sciatic, tibial branch, L5, SI, 2, 3. **Short**

head: sciatic, peroneal branch, L5, SI, 2. **Test:** During the test, the examiner should observe for the direction of pressure that best puts tension on the tendon of the biceps femoris and less tension on the tendons of the semimembranosus and semitendinosus. Observe for muscular contraction of the biceps femoris and diminished contraction of the semimembranosus and semitendinosus muscles by palpation.

Adductors





Pectineus Origin: superior surface of the pubis between iliopedineal eminence and pubic tubercle.

Insertion: pectineal line from lesser trochanter to linea aspera.

Action: adduction, flexion, and internal rotation of the thigh.

Adductor Brevis Origin: outer surface of inferior ramus of pubis. **Insertion:** on a line extending from lesser trochanter to linea aspera.

Action: hip adduction, with some assistance in hip flexion.

Adductor Longus Origin: anterior of pubis in angle between crest and symphysis.

Insertion: middle one-third of medial lip of linea aspera.

Action: adducts thigh with some assistance in hip flexion.

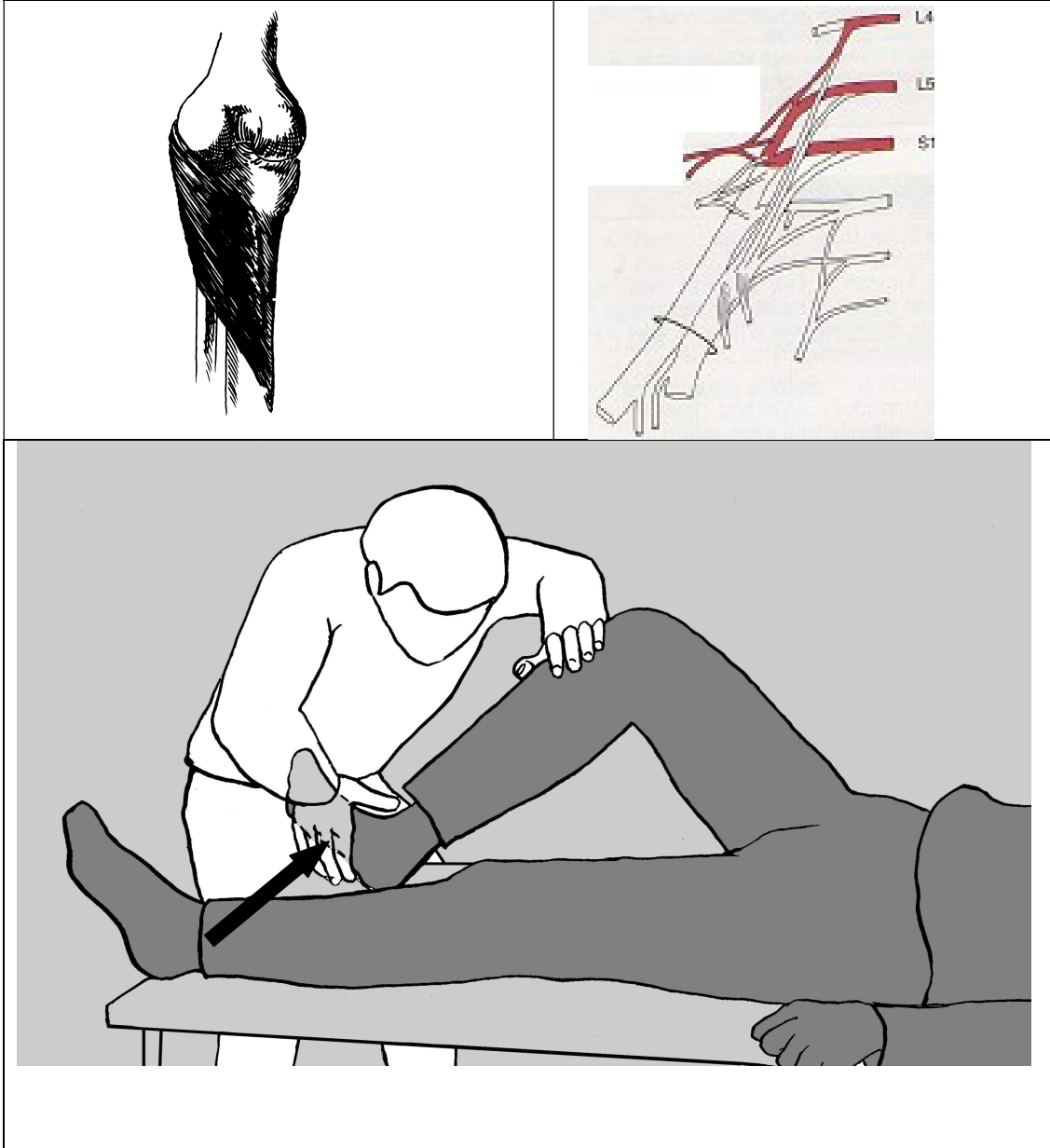
Adductor Magnus Origin:

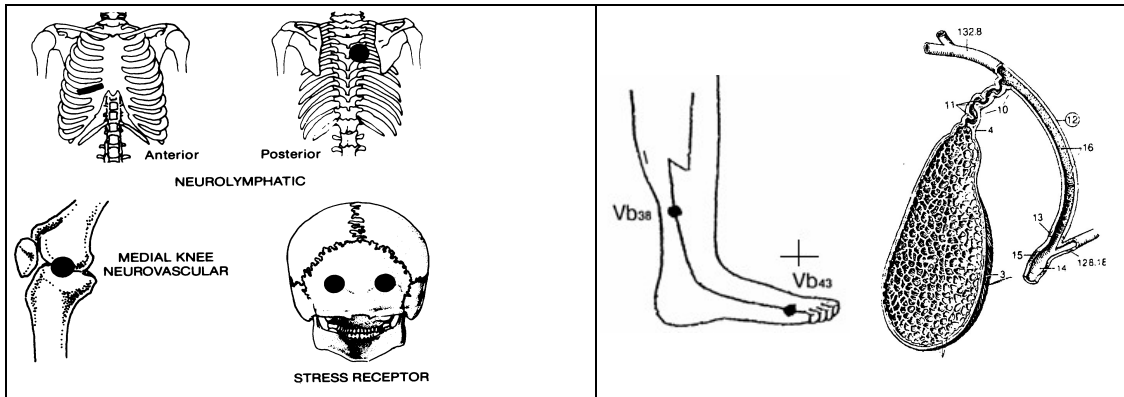
Posterior fibers: ischial tuberosity.

Anterior fibers: ramus of ischium and pubis. **Insertion:** from a line extending from the greater trochanter along linea aspera, medial supracondylar line, and ending at the adductor tubercle of the medial condyle of the femur.

Action: adduction in combination with other hip adductors. Fibers arising from ischium and ramus of ischium primarily insert distally and aid in hip extension. Fibers arising from ramus of pubis insert proximally and aid in hip flexion.

Popliteus





Origin: lateral condyle of femur, posterior horn of lateral meniscus, fibular head.

Insertion: triangular area on posterior surface of tibia above soleal line.

Action: rotates the tibia internally on the femur or the femur externally on the tibia, depending upon the one fixed; withdraws the meniscus during flexion, and provides rotatory stability to the femur on the tibia²; brings the knee out of the "screw-home" position of full extension; helps with posterior stability of the knee. **Test:** With the patient's knee flexed to 90°, pressure is directed on the distal medial foot, with counter-pressure on the calcaneus to impart lateral rotation of the tibia on the femur. The actual testing motion is slight and can be evaluated only by observing the tibia rotating on the femur and watching for motion of the tibial tubercle. It is quite possible for the examiner to obtain foot rotation, appearing to be a weak popliteus; in fact, it may be a twisting of the tibia and fibula. **Nerve supply:** tibial, **L4, 5, S1.** **Neurolymphatic:**

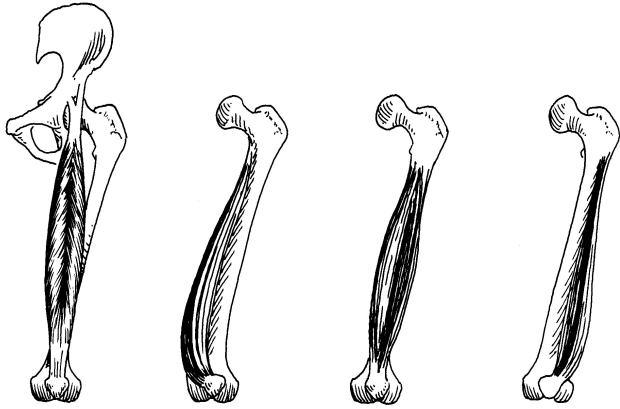

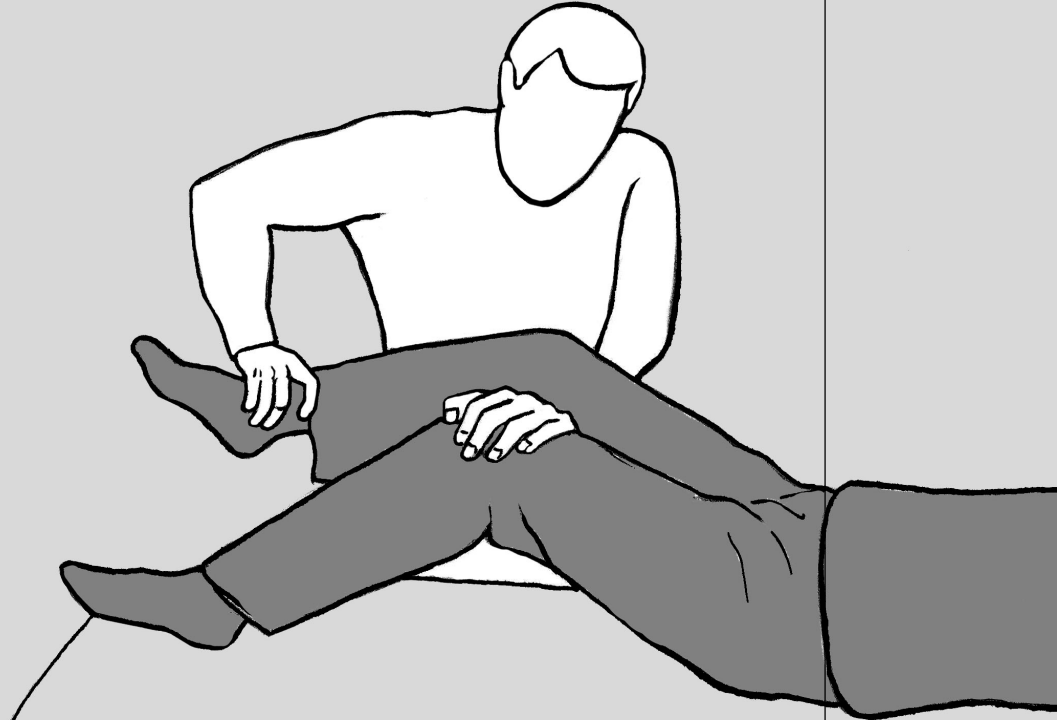
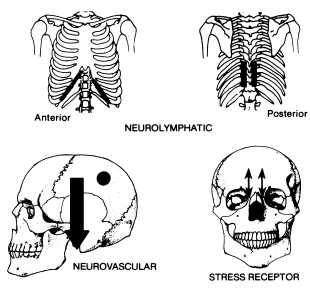
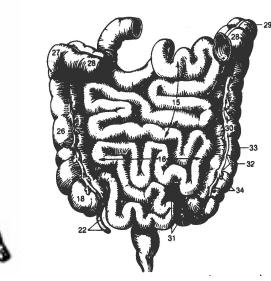
Anterior: 5th intercostal space from mid-mamillary

line to sternum on the right.

Posterior: between T5-6 laminae on right. **Neurovascular:** medial aspect of knee at meniscus.

Nutrition: vitamin A. **Meridian association:** gallbladder. **Organ association:** gallbladder.

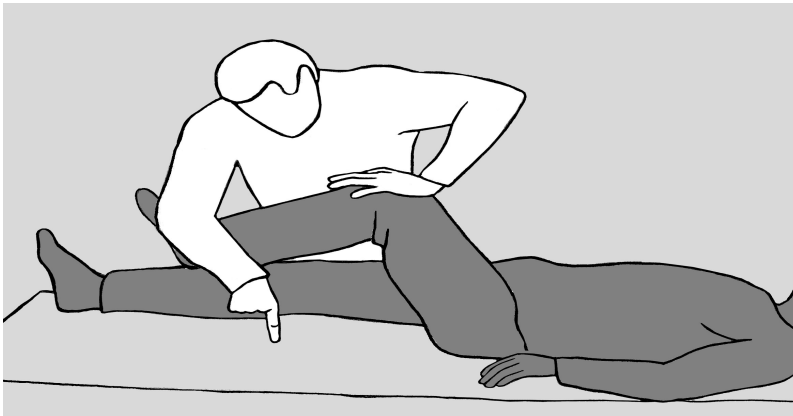
Quadriceps

 <p>Rectus femoris Vastus medialis Vastus intermedius Vastus lateralis</p>	 <p>Femoral n. Quadriceps femoris (all five heads) (L2-L4)</p>
	
 <p>Anterior Posterior NEUROLYMPHATIC</p> <p>NEUROVASCULAR STRESS RECEPTOR</p>	

Rectus Femoris Origin:

Straight head: from anterior inferior iliac spine.

Reflected head: from groove on upper brim of acetabulum. **Insertion:** upper border of patella with the ligamentum patellae extending to tibial tubercle. **Action:** extends the leg and flexes the thigh. **Test:** The examiner directs force against the anterior thigh just proximal to the knee in a direction toward hip extension, ascertaining that no thigh rotation is present and that the knee stays flexed approximately 90°. A slightly built examiner may need to hold the side of the table to provide added power in this test. The psoas is very active in this test and must be evaluated separately to make a comparison with the rectus femoris. Observation of the patient going into the test position reveals considerable information regarding his hip flexor strength.



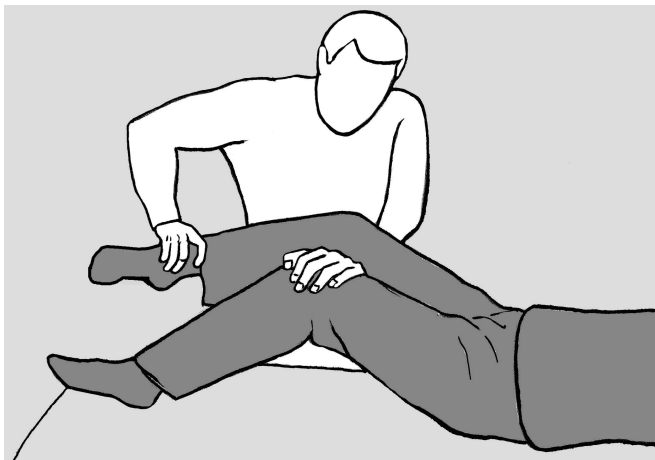
Vastus Medialis Origin: lower half of the intertrochanteric line, linea aspera, medial supracondylar line, medial intermuscular septum, tendons of adductor magnus and adductor longus. **Insertion:** medial border of the patella with the ligamentum patellae extending to the tibial tubercle. **Action:** extends the leg and draws the patella medially.



Vastus Intermedius Origin: proximal two-thirds of the anterolateral surface of the femur, lower half of the linea aspera, upper part of the lateral supracondylar line, lateral intermuscular septum. **Insertion:** by tendons of the rectus and vastus muscles into the superior border of the patella with the ligamentum patellae extending to the tibial tubercle. **Action:** extends the leg.

Vastus Lateralis Origin: intertrochanteric line, greater trochanter, gluteal tuberosity, linea aspera, lateral intermuscular septum, capsule of the hip joint.

Insertion: lateral border of the patella with the ligamentum patellae extending to the tibial tubercle. **Action:** extends the leg and draws the patella laterally. **Test (as a group):** With the patient seated, the examiner directs pressure against the distal anterior leg just above the ankle in the direction of knee flexion. Care must be taken not to allow the patient to lock the knee in extension. If the table edge is sharp, the examiner should place his hand under the knee to cushion it. The examiner should observe for change of pelvic position during the testing procedure.



Nerve supply: femoral, L2, 3, 4.

Neurolymphatic:

Anterior: along costochondral junction of the 8th-11th ribs. Activity of this linear neurolymphatic is inverse to involvement of the quadriceps muscle divisions. In other words, for the vastus lateralis, neurolymphatic activity will be medial; for the vastus medialis, the activity will be lateral on the reflex area. **Posterior:** T8-11 laminae.

Neurovascular: parietal eminence, posterior aspect.

Nutrition: vitamin D, vitamin B complex, small intestine nucleoprotein extract or concentrate.

Meridian association: small intestine.

Organ association: small intestine.

Functional muscle connections

Muscle	subluxation	Fixation	Connected to organ	Connected to meridian	Meridian activation time	Connected to teth
Subscapularis	Th II	Sternum	Heart	C	11-13	2 upper
Deltoid	Th III	servico-thoracic junction	Lungs	P	3-5	3 upper
Popliteus	Th IV	C III-VI	Gall Bladder	VB	21-1	4 upper
Pec Maj Clavicular	Th V		Stomach	E	7-9	5 upper
Latissimus Dorsi	Th VI		Pancreas	Rp	9-11	6 upper
Middle trapezius	Th VII		Spleen	Rp	9-11	8 upper
Lower Trapezius		Th XII -L1	Spleen	Rp	9-11	
Pec Maj Sternal	Th VIII		Liver	F	1-3	5 upper
Sartorius	T IX		Adrenal	TR	19-21	6 lower
Quadriceps	Th X		Small intestine	Ig	13-15	7 lower
Ilio-psoas	Th XII	C 0-1 Gluteus medius	Kidney	R	17-19	8 lower
Hip extensors	L1		Rectum	Gi	5-7	5 lower
Quadratus lumborum	L II		Appendix	Gi	5-7	4 lower
Gluteus maximus	L III	C I-III	Reproductive organs	MC	19-21	3 lower
TFL	L IV		Large intestine	Gi	5-7	2 lower
Piriformis	LV		Reproductive organs	MC	19-21	2 lower
Teres Major		Th I - XII		VG		
Neck extensors		L I-II PKC		E	7-9	1 lower