

## CHAPTER FOUR

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# The Lower Extremities

The lower extremities are among the most important structures of the body and yet are often overlooked. Each lower extremity contains two of the major transverse planes in the body, that is, the foot and the knee. If these transverse planes are dysfunctional, they can act as baffles,<sup>2</sup> which may result in a blockage of fluid flow from the lower extremity, producing both local and systemic effects. Another neglected aspect of the lower extremities is the connection between their fascial compartments and muscles and the lower back. For example, it is not rare for lower back pain to be due to a dysfunction of the popliteal fascia.

In addition, as the lower extremities are the foundation for the rest of the body, an imbalance in either of the lower extremities can affect the musculature of the trunk or the viscera. The effects of lower extremity problems can be far reaching. For example, arrhythmia can occur after a knee injury due to the center of gravity moving forward, causing the pelvis to tilt and resulting in mild scoliosis. This in turn can lead to an impingement of cranial nerve X (vagus), which innervates the heart. Treatment of all the dysfunctional structures, starting with the knee, can resolve the arrhythmia.

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<sup>1</sup> William Garner Sutherland called the LAS techniques he used general osteopathic techniques.

<sup>2</sup> This concept appears again in Chapter 11. Briefly, baffles are obstructions to flow within a structure. In a gas tank baffles keep the fluid from sloshing around. However, for optimal health fluids should slosh around the body. Therefore if structures are acting as baffles, we turn them back into diaphragms. You want everything working together and everything moving.

# Foot

## *Plantar Fascia*

TECHNIQUE: Supine direct myofascial release

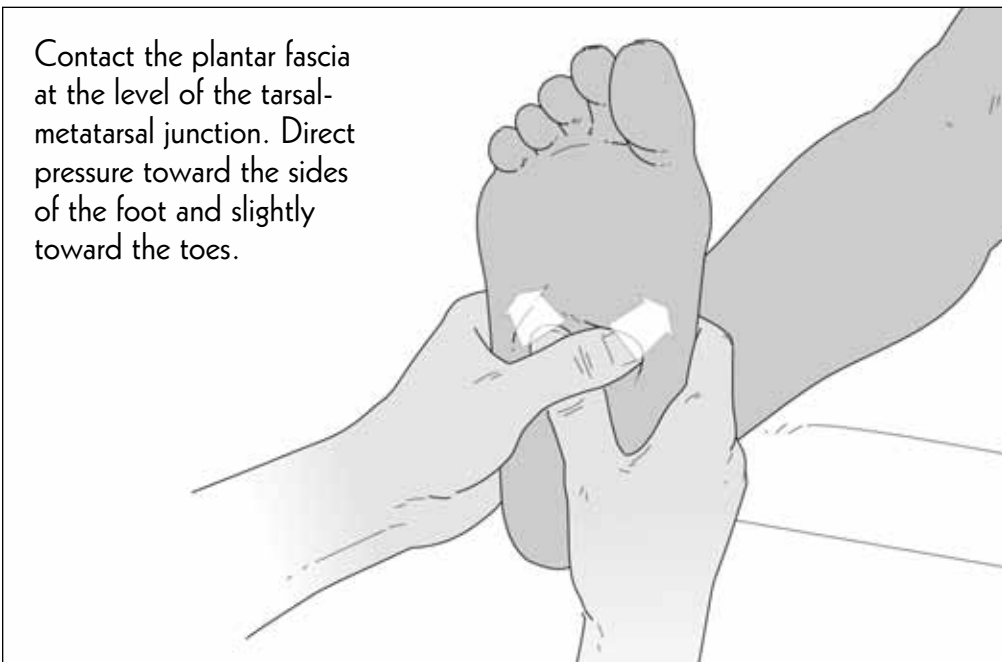
SYMPTOMS/DIAGNOSIS: Pain on the bottom of the foot, heel spurs, or plantar fasciitis

PATIENT: Supine

PHYSICIAN: Seated at the foot of the table

PROCEDURE: Your thumbs are crossed and the pads are pressed into the plantar fascia at the level of the tarsal-metatarsal junctions with your fingers interlaced across the dorsum of the foot. The pads of the thumbs press in the direction the thumbs are pointed, that is, toward either side of the foot and slightly toward the toes, and are taken to a point of balanced tension. Once a release occurs, your thumb tips seem to slip across the fascia. Repeat the same procedure with the toes in plantar flexion. Once that release occurs, repeat the procedure with the toes in dorsiflexion. The treatment of the plantar fascia is complete once you have accomplished all three releases.

**Figure 4.1** Plantar fascia technique

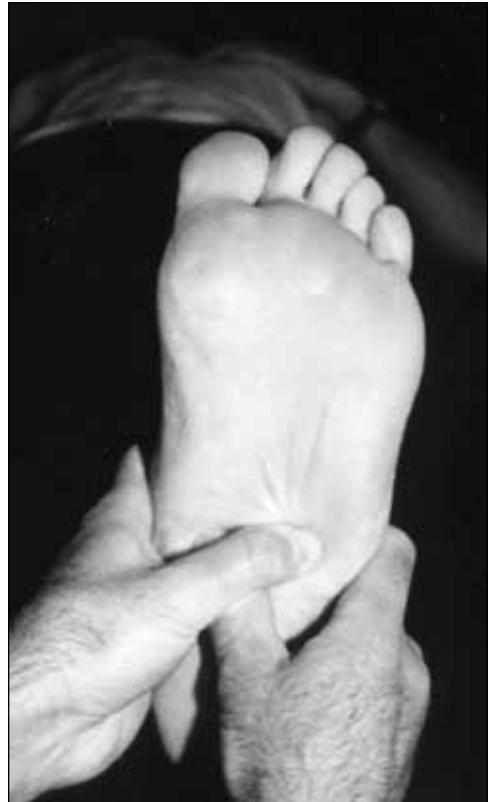


**Figure 4.2** Plantar flexion



Instruct the patient to “step on the gas,” forcing the foot into plantar flexion.

**Figure 4.3** Dorsiflexion



Instruct the patient to bend the toes toward the head.

## ***Metatarsals, Tarsals, and Toes***

TECHNIQUE: Supine indirect ligamentous articular release

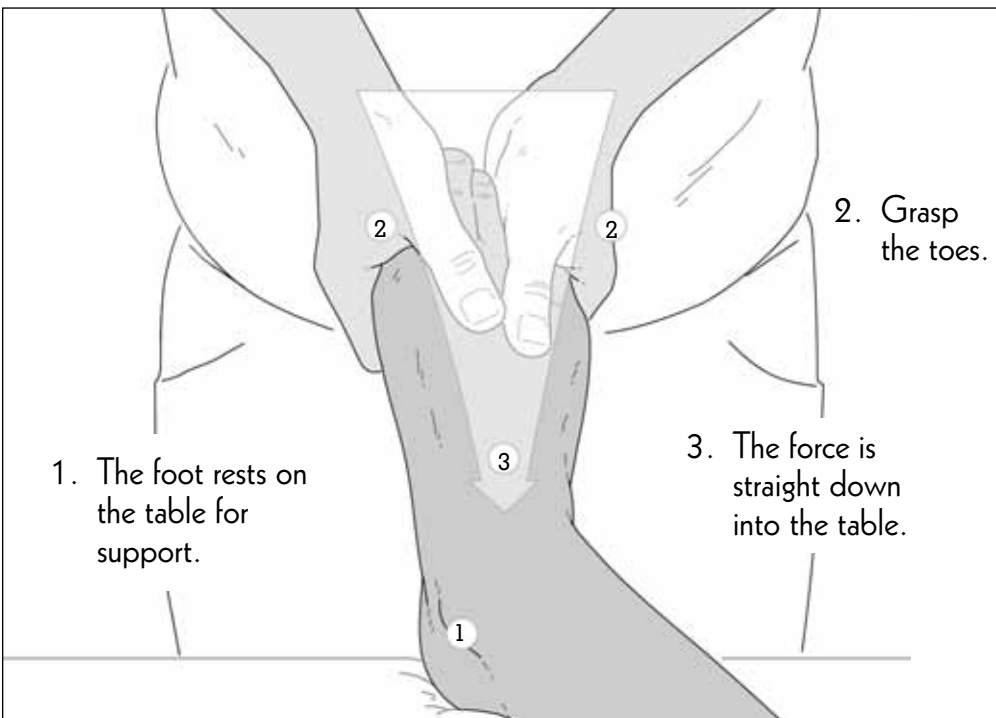
SYMPTOMS/DIAGNOSIS: Pain in the middle of the foot or in the toes

PATIENT: Supine with the heels on the table

PHYSICIAN: Standing at the foot of the table, facing toward the head of the table

PROCEDURE: While bending forward above the patient's foot, wrap both your hands around the affected foot from either side with the distal toes imbedded in the palms of your hands and the foot drawn into slight plantar flexion by contracting your fingers under the distal metatarsals. The thumbs are on the dorsum of the foot. With your weight, compress the phalanges, metatarsals, and tarsals directly into the table, balancing on top of the rod-like vector force felt between your hands and the table. When the release occurs, the tissue softens under your fingers.

**Figure 4.4** Metatarsals, tarsals, and toes technique



**Figure 4.5** Metatarsals hand placement (plantar view)



### ***Calcaneus (Bootjack Technique)***

**TECHNIQUE:** Supine combination ligamentous articular release (direct on calcaneus and indirect on forefoot)

**SYMPTOMS/DIAGNOSIS:** Heel or foot pain, or heel spurs

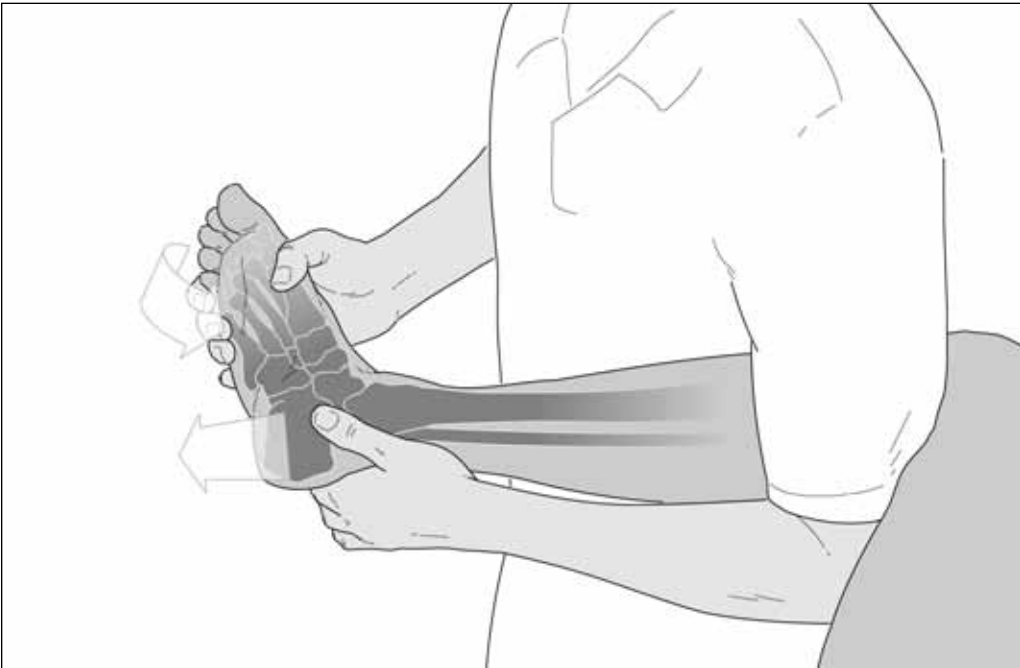
**PATIENT:** Supine

**PHYSICIAN:** Standing on the same side of the table as the affected heel, facing toward the foot of the table

**PROCEDURE:** Externally rotate and abduct the patient's femur and flex the knee. Place the posterior distal humerus of the arm you have closest to the table across the patient's distal femur just above the popliteal fossa. Your humerus and the patient's femur should be approximately 90° to each other. Grasp their calcaneus with your thumb and the proximal interphalangeal joint of the bent index finger of the same hand. Lean toward the patient's head, carrying the knee into deeper flexion to exert traction on the heel. While carrying the heel distally, balance the front of the foot with your other hand. Grasp under the distal first metatarsal with the thumb of that hand, the fingertips wrapping around the little toe and lateral aspect of the foot.

Balance the tension in the metatarsals and tarsals between your two hands while you carry the calcaneus inferiorly, away from the head. When the release at the heel occurs, it feels like your thumb and index finger slip off the calcaneus. You will also feel a softening in the forefoot when it releases. Both releases may occur at the same time or independently.

**Figure 4.6** Bootjack technique



## Ankle

### *Unstable Ankle*

The function of the ankle is closely tied to the function of the knee. When the fibular head is subluxed at the knee, the head rides on the rim of its socket. This drives the distal end inferiorly and makes the ankle joint not level, that is, the fibular side is more inferior. As a result, the ankle mortise is unstable, and the patient chronically rolls off the outside of the foot, respraining the ankle. To stabilize an ankle, the fibula must be returned to its socket at the knee. Utilize the fibular head technique, which is described later in this chapter, to treat the unstable ankle. Once the fibula is returned to its normal position and the ankle mortise is level, the ligaments can begin their three month healing process. If it is not reinjured, the ankle will once again be stable.

## *Talus Anterior*

TECHNIQUE: Supine indirect ligamentous articular release

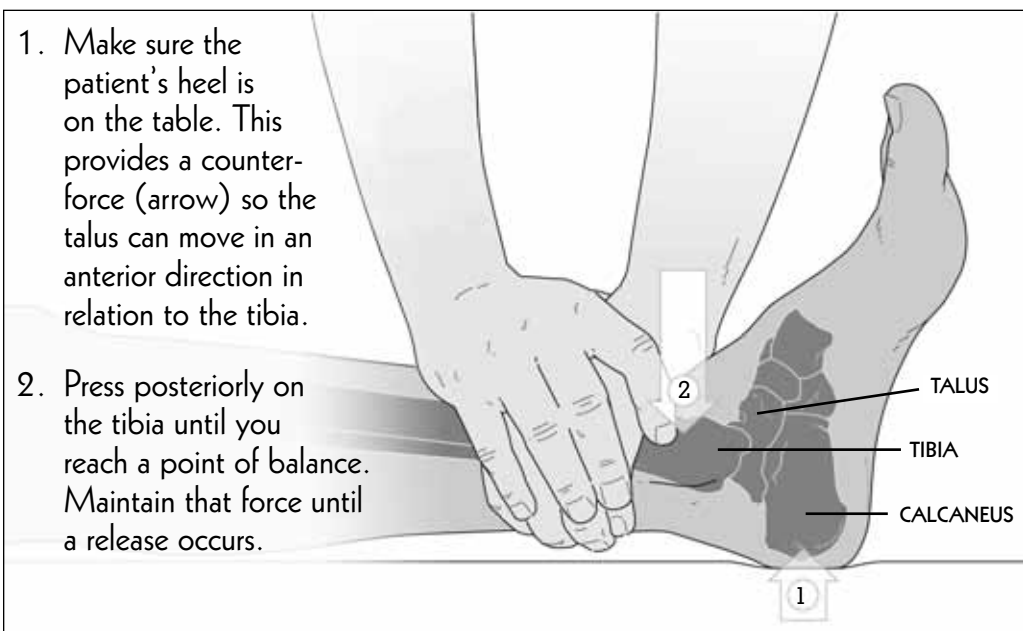
SYMPTOMS/DIAGNOSIS: Ankle pain or difficulty dorsiflexing the foot, such as when going up stairs. This can be diagnosed by sweeping your palpating thumb down the front of the tibia. The anterior talus feels like a shelf in front of the tibia.

PATIENT: Supine with the heel on the table

PHYSICIAN: Standing at the side of the table, at the level of the affected ankle

PROCEDURE: Place the palm of your distal hand across the distal tibia with the hypothenar side of the palm located within one-fourth to one-half inch of the talus. Compress the tibia directly down toward the table. You should feel tension coming up through the heel and directly through the tibiotalar joint. Roll the lower leg slightly internally to bring the force to its exact balance point (where the tension is most intense). It will feel like you have met a barrier with the rotation. Your other hand can be placed over the top of the treating hand to reinforce it. The amount of pressure will be in the 10 to 40 pound range. Maintain this balance point until the release occurs, at which time the palpable tension will soften and the lower leg will roll through the barrier. Slowly remove the pressure, allowing the tibia to move back over the talus in an anterior direction. The treatment is complete. Remember to recheck the foot to see that the shelf- or step-like projection is gone.

**Figure 4.7** Talus anterior technique





## ***Talus Posterior***

**TECHNIQUE:** Supine indirect ligamentous articular release

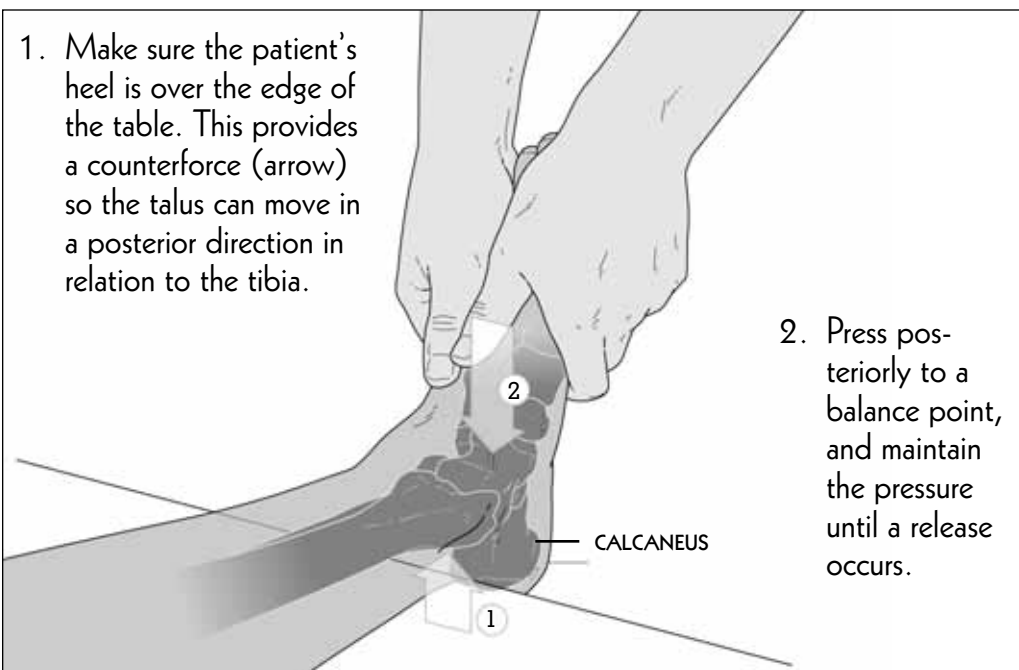
**SYMPTOMS/DIAGNOSIS:** Ankle pain or difficulty plantar flexing the foot (such as when going up or down stairs). The cause is posterior subluxation of the talus on the tibia. This can be diagnosed by drawing the thumb superiorly on the anterior tibiotalar junction and feeling a small shelf-like projection of the distal tibia that has shifted anteriorly on the talus.

**PATIENT:** Supine with the heel just off end of table. The heel should clear the end of the table by approximately one inch.

**PHYSICIAN:** Standing at the foot of the table, facing the head of the table

**PROCEDURE:** Using the table to support the distal tibia, carry the foot toward the floor. To accomplish this, bend forward above the patient's foot, wrapping both your hands around the foot from the sides with the distal toes imbedded in the palms of your hands and the foot drawn into slight extension. Your thumbs are on the dorsum of the foot. Apply pressure downward to the entire foot, directly past the end of the table toward the floor to a balance point. When the release occurs, it feels like the foot shifts more posteriorly on the ankle. Slowly decrease the downward pressure, allowing the foot to move anteriorly on the ankle joint and to recenter itself.

**Figure 4.8** Talus posterior technique



# The Leg

## *Dorsiflexors of the Foot and Pretibial Fascia*

TECHNIQUE: Supine direct myofascial release

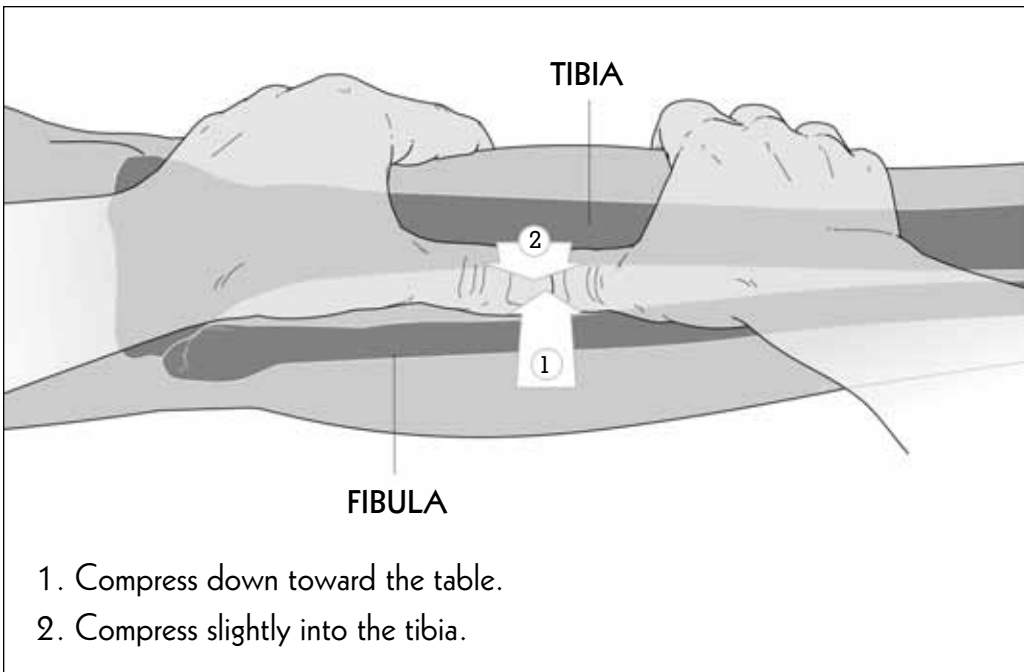
SYMPTOMS/DIAGNOSIS: Pain down the front of the lower leg, shin splints, or dorsi-cramping of toes. The most common type of shin splints can be attributed to strains of the pretibial fascia and spasm of the dorsiflexors of the foot.

PATIENT: Supine

PHYSICIAN: Standing, facing the side of the table, at the level of the lower leg

PROCEDURE: Place the pad of the thumb of your more distal hand on the anterior surface of the dorsiflexor muscles and pretibial fascia just lateral to the tibia. Find the tightest point in the fascia and muscle, and maintain a balanced compressive force (in the range of 20 to 40 pounds of pressure) medially and posteriorly with your thumb, parallel and just lateral to the tibia, until you feel a release. Reinforce your distal thumb with your more proximal thumb to avoid fatigue of the treating thumb. When the release occurs, the hard spasm will melt—the muscle and fascia have relaxed. This treats the dorsiflexor muscles of the foot and toes.

**Figure 4.9** Dorsiflexors of the foot and pretibial fascia technique



## *Plantar Flexors of the Foot and Calf*

TECHNIQUE: Supine direct myofascial release

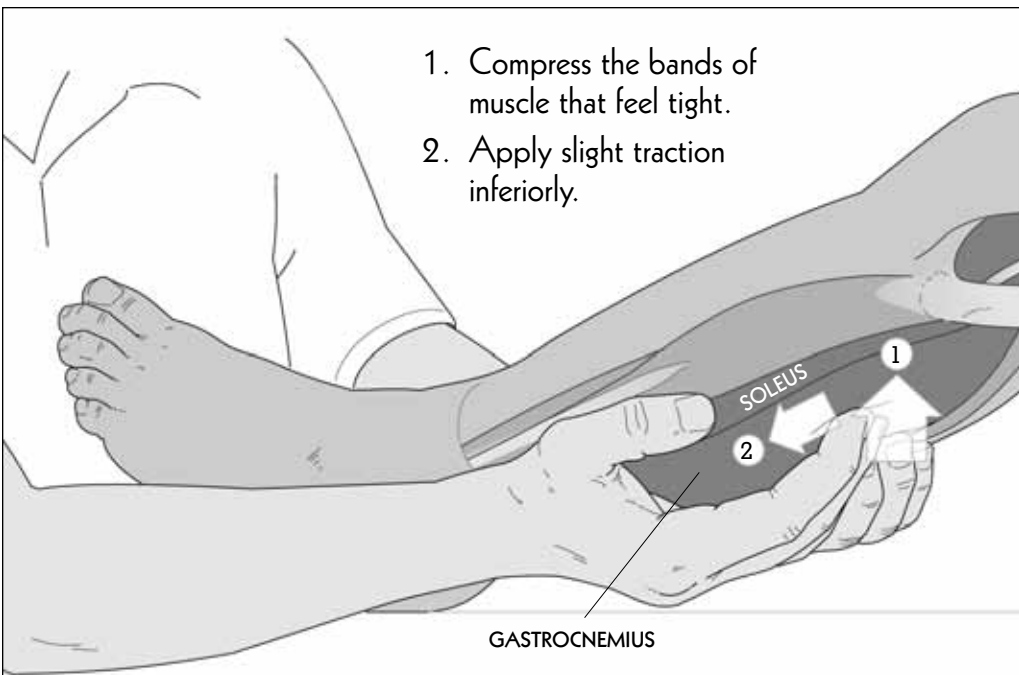
SYMPTOMS/DIAGNOSIS: Calf pain, cramping of the foot, and/or cramping of the plantar aspect of the toes

PATIENT: Supine

PHYSICIAN: Sitting at the side of the table just distal to patient's calf, facing the head of the table

PROCEDURE: With the fingers bent, line up the fingertips of both your hands side by side with your eight fingers under and transverse to the gastrocnemius and soleus muscles, allowing the weight of the leg to rest on your fingertips. Press into the tight flexor muscle, which feels like a tight guitar string, with the finger that is directly under the tight spot. With the weight of the leg applying the needed pressure, slightly draw that finger inferiorly toward the foot. Maintain that balanced tension until the release occurs.

**Figure 4.10** Plantar flexors of the foot and calf technique



# Knee

## *Fibular Head*

TECHNIQUE: Supine direct ligamentous articular release

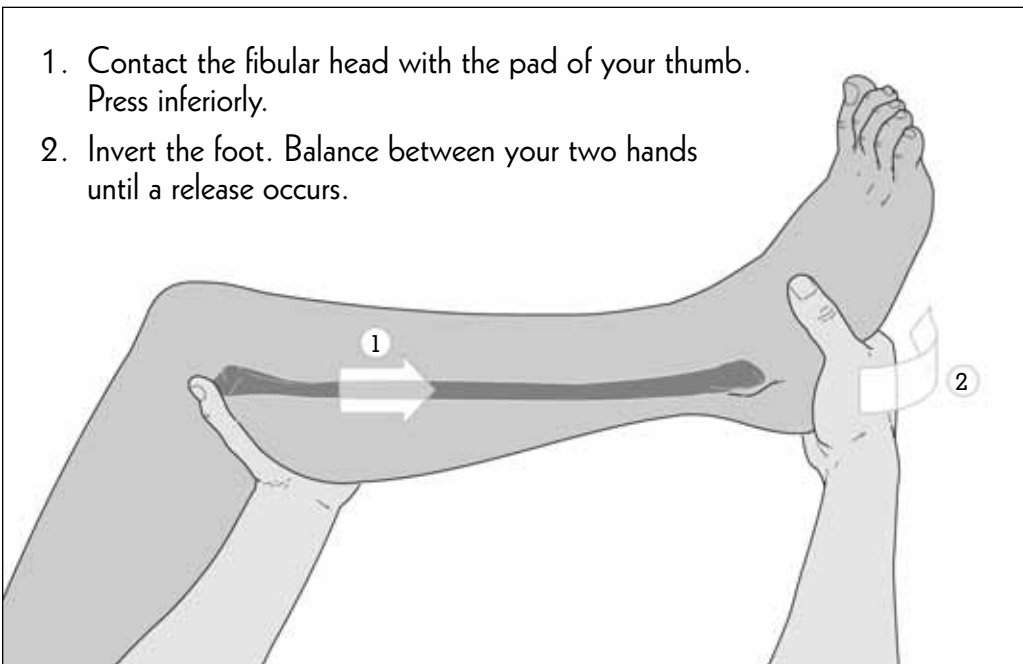
SYMPTOMS/DIAGNOSIS: Posterior and lateral knee pain or unstable ankle with chronic spraining of the ankle. The latter is a result of an unstable ankle mortise with the fibula displaced at the knee.

PATIENT: Supine

PHYSICIAN: Seated, facing the side of the table at the level of the affected knee

PROCEDURE: Flex the hip and the knee to approximately 90°. Slightly externally rotate the femur. With the arm closest to the patient's head, bend your elbow to 90° and prop it on the table, making a vertical pedestal with your forearm and thumb. With the pad of this thumb, push the posterior superior portion of the fibular head inferiorly toward the foot. The distal hand inverts the foot and slightly rotates the foot medially. This pulls on the distal end of the fibula. Balance the connective tissue surrounding both ends of the fibula and the interosseous membrane between the tibia and fibula until a release occurs. The fibular head moves inferiorly and anteriorly and slides back into its socket.

**Figure 4.11** Fibula technique hand placements



## ***Lateral (Fibular) Collateral Ligament of the Knee***

**TECHNIQUE:** Supine combination ligamentous articular release (direct on the lateral collateral ligament)

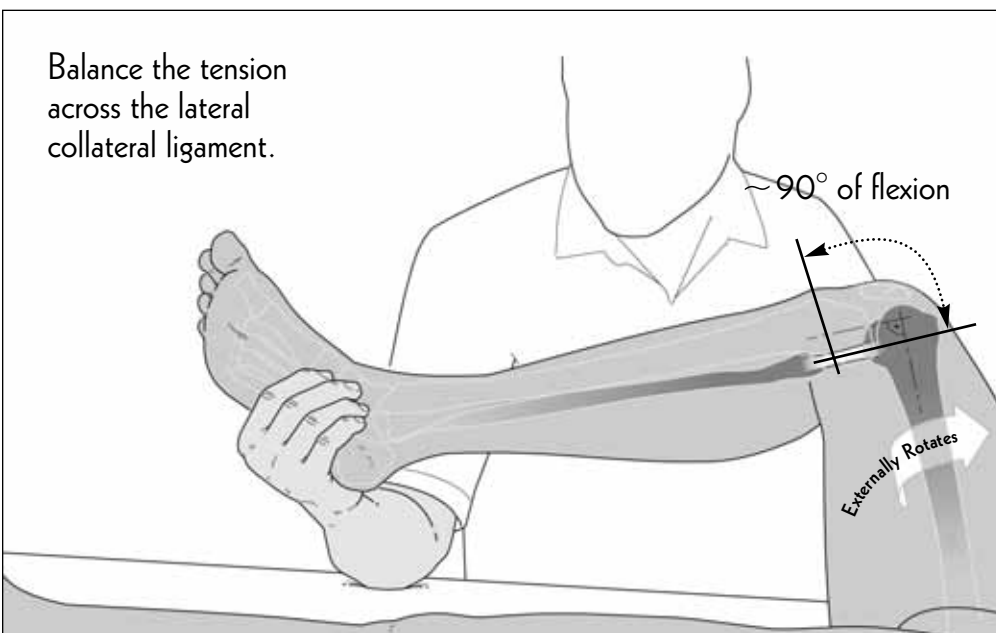
**SYMPTOMS/DIAGNOSIS:** Pain on the lateral aspect of the knee from a strained lateral collateral ligament

**PATIENT:** Supine

**PHYSICIAN:** Seated, facing the side of the table at the level of the knee

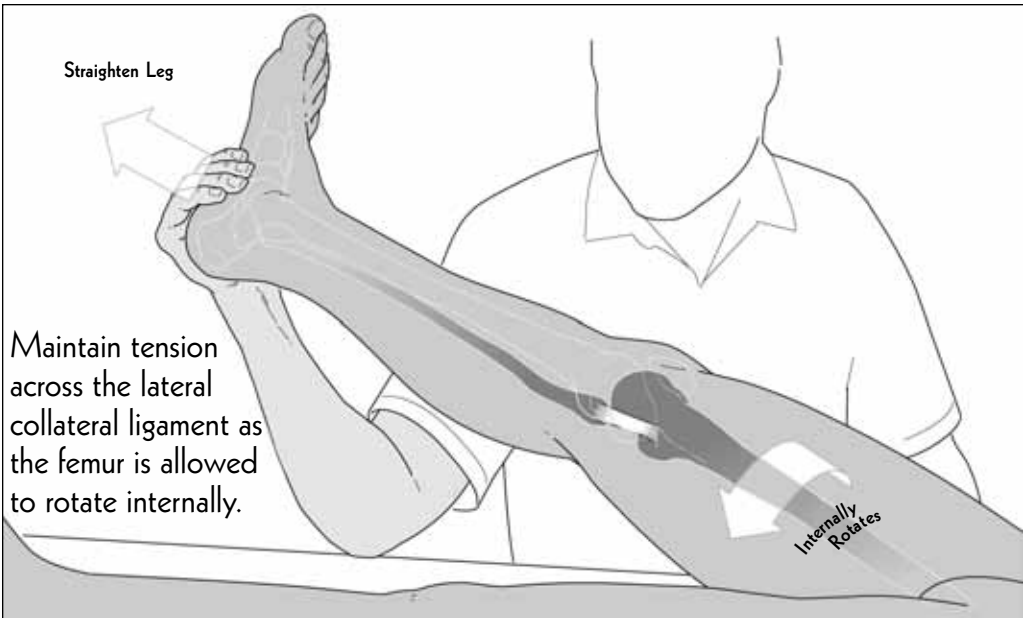
**PROCEDURE:** Externally rotate and abduct the hip on the affected side. Bring the knee into approximately 90° of flexion. (The patient's other leg remains straight.) With the hand closest to the end of the table, grasp the patient's foot with your fingers in the instep and your thumb on the lateral dorsum of the foot. The hypothenar eminence supports the lateral aspect of the calcaneus, and the thenar eminence is directly inferior to the distal fibula. Prop that elbow on the table, and without supporting the knee with the other hand, allow the knee to drop laterally toward the floor. With your hand holding the foot, invert the foot at the ankle and internally rotate it (which slightly internally rotates the lower leg). Draw the foot inferiorly, straightening the knee while maintaining the balanced tension across the lateral collateral ligament. The hand on the foot monitors the tension on the knee. When the knee catches at a barrier, maintain balanced tension at that barrier or still point until a release occurs and the knee straightens further.

**Figure 4.12** Lateral collateral ligament set-up



There may be multiple barriers. Maintain steady tension against each barrier encountered until the knee straightens completely. Once the knee has completely straightened, the lateral collateral ligament has returned to its normal physiologic condition and the femur internally rotates to align with the tibia.

**Figure 4.13** Lateral collateral ligament technique



### ***Medial Collateral Ligament***

**TECHNIQUE:** Supine combination ligamentous articular release (direct on the medial collateral ligament)

**SYMPTOMS/DIAGNOSIS:** Pain on the medial aspect of the knee as a result of a strained medial collateral ligament

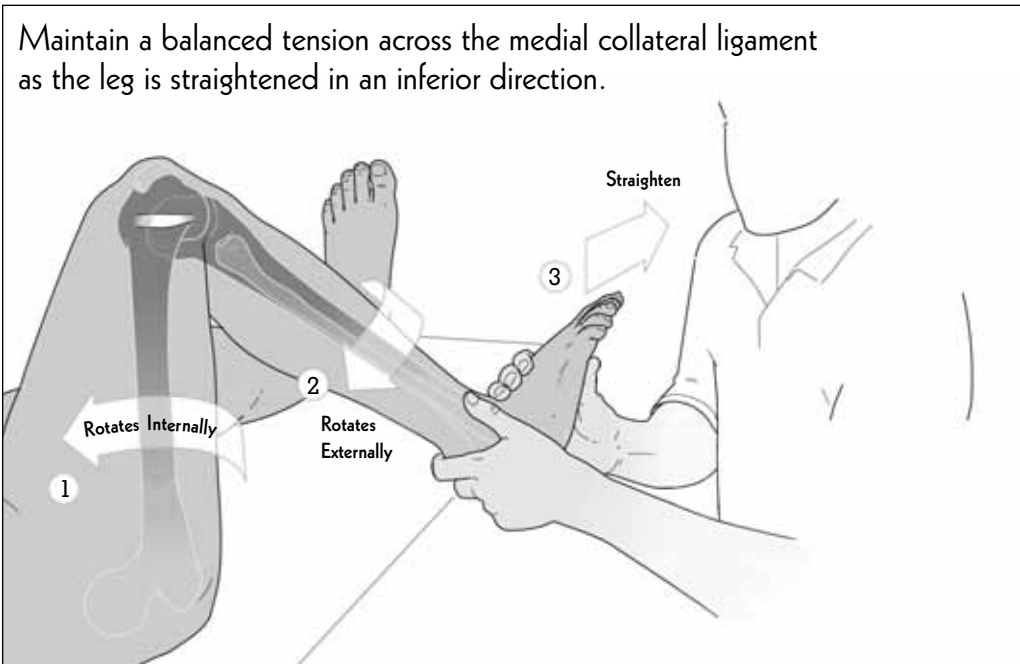
**PATIENT:** Supine

**PHYSICIAN:** Sitting just beyond the corner of the foot of the table on the same side as the affected knee, facing the head of the table

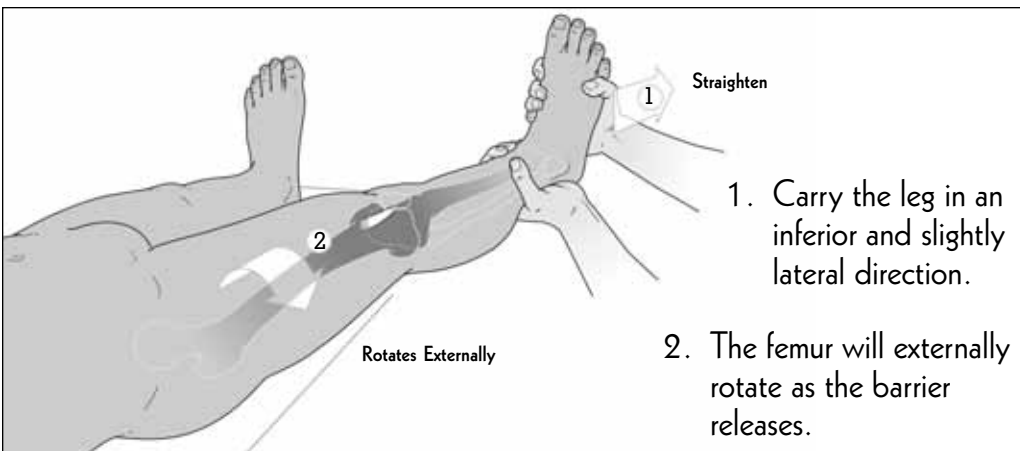
**PROCEDURE:** Grasp the foot with both hands. Your lateral hand grasps the calcaneus with the fingers on the medial aspect and the thenar eminence on the lateral aspect. Your medial hand grasps the forefoot with the distal end of the first metatarsal in that palm. The hip is flexed and adducted, causing the femur to internally rotate. The knee is bent approximately 90° and is now above the opposite femur. With both hands on the foot, externally rotate the foot and attempt to straighten the leg. Draw the foot inferiorly,

straightening the knee while maintaining the balanced tension across the medial collateral ligament. When the knee catches at a barrier, maintain balanced tension at that barrier or still point until the knee straightens further. There may be multiple barriers. Maintain steady pressure against each barrier encountered until the knee straightens completely. When this has occurred, the medial collateral ligament has returned to its normal physiologic condition and the femur externally rotates to align with the tibia.

**Figure 4.14** Medial collateral ligament set-up



**Figure 4.15** Medial collateral ligament technique



## ***Popliteal Fascia***

TECHNIQUE: Supine direct myofascial release

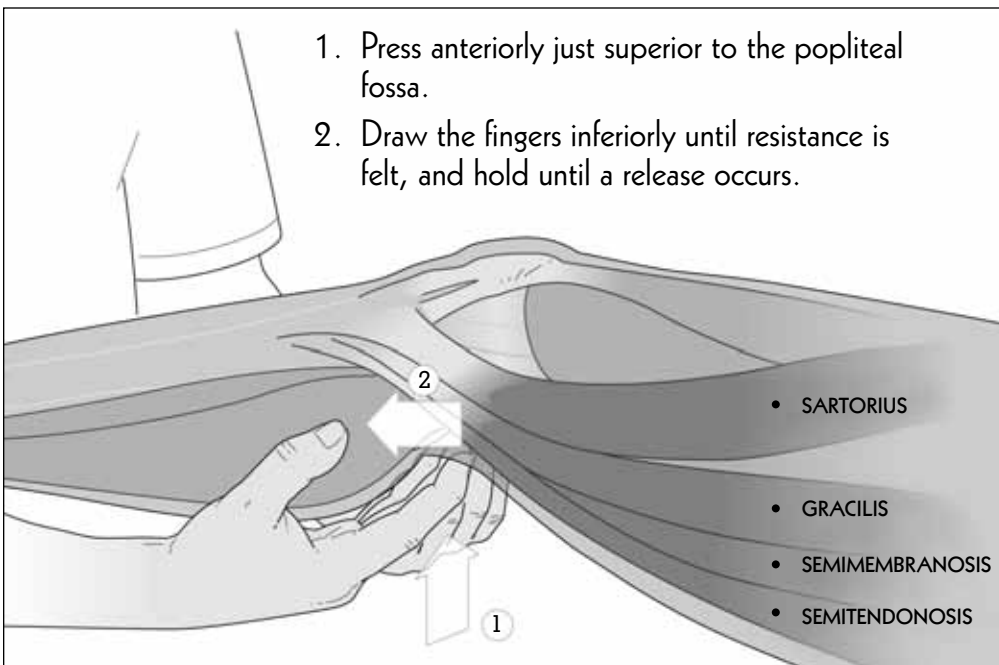
SYMPTOMS/DIAGNOSIS: Pain behind the knee or Baker's cyst

PATIENT: Supine

PHYSICIAN: Seated at the side of the table inferior to the patient's knee, facing the head of the table

PROCEDURE: With the patient's leg relaxed, place your fingertips just above the popliteal fossa. The fingers of both hands are bent with the lateral fingernails of your little fingers and ring fingers touching and the heels of your hands approximately three inches apart. The fingers will form a plough- or wedge-like shape. Grasp the tissue under your fingertips and draw them inferiorly toward the foot. If resistance is met, maintain balanced tension inferiorly and anteriorly until this barrier "melts" and your fingers slide inferiorly with the popliteal fascia melting ahead of the little fingers.

**Figure 4.16** Popliteal fascia technique



## ***Meniscus***

TECHNIQUE: Supine direct ligamentous articular release

SYMPTOMS/DIAGNOSIS: Pain in the knee, quite often anterior and inferior to the patella, and either lateral or medial. There may be pain deep in the middle of the knee.

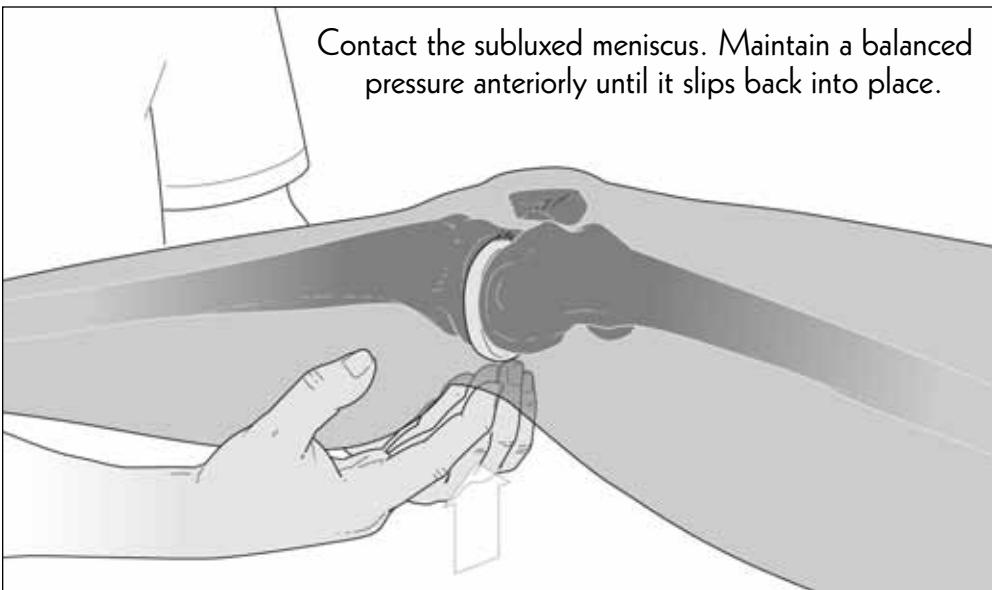


**PATIENT:** Supine with legs straight and relaxed

**PHYSICIAN:** Sitting at the side of the table inferior to patient's knee, facing the head of the table

**PROCEDURE:** Once all the strains in the popliteal fascia have been released, palpate the back of the knee for any firm or tender lumps (posteriorly subluxed menisci). A lump that is found toward the medial popliteal fossa is a posteriorly subluxed medial meniscus, while a lump that is found toward the lateral popliteal fossa is a posteriorly subluxed lateral meniscus. If either condition or a combination of both conditions is encountered, use the tip of the pad of the middle finger of your dominant hand reinforced with the pad of the middle finger of your other hand to maintain steady balanced pressure anteriorly on the meniscus until it slips back into its normal position and the lump disappears.

**Figure 4.17** Meniscus technique



## ***Cruciate Ligaments***

**TECHNIQUE:** Supine indirect ligamentous articular release

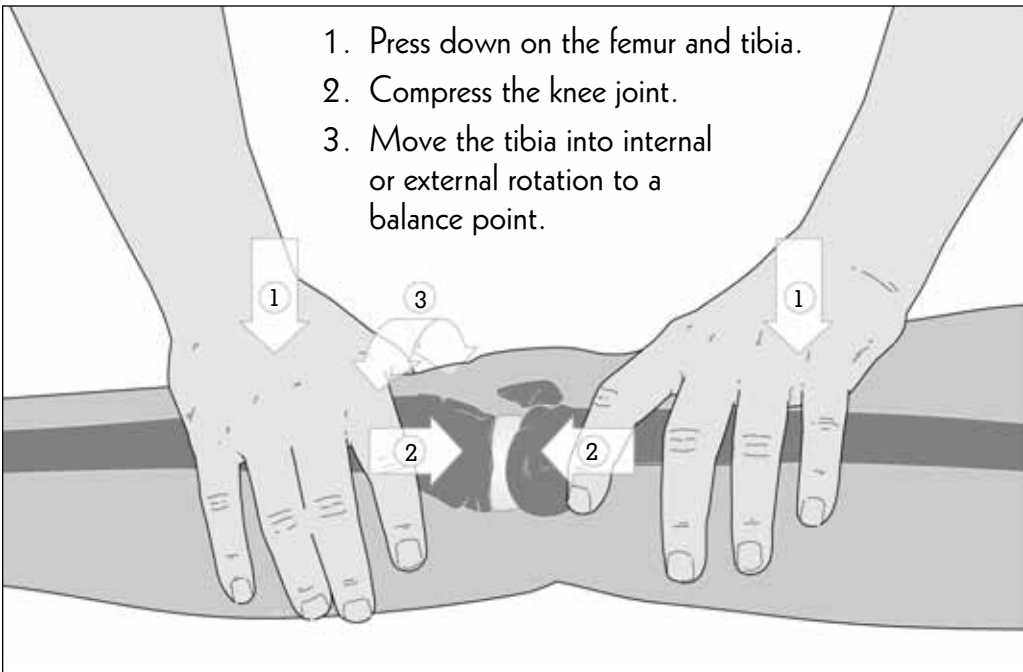
**SYMPTOMS/DIAGNOSIS:** Pain or swelling in the knee or knee hyperextension. The pain in the knee often occurs when climbing or descending stairs or standing up from a seated position. These symptoms may be a result of a strained anterior or posterior cruciate ligament. The tibial tuberosity is not centered below the midline of the patella, that is, the tibia is either externally or internally rotated on the femur.

PATIENT: Supine

PHYSICIAN: Standing at the side of the table, facing the patient's knee

PROCEDURE: With the hand closest to the patient's head, grasp the thigh approximately five inches above the knee to stabilize the femur. With your other hand, grasp the lower leg approximately four inches below the knee. Press down on the tibia and femur, then compress your hands toward each other. With the femur stabilized, first rotate the tibia laterally, then medially, to evaluate in which direction it most easily moves. Maintain the rotation in that direction. Maintain a balance point on all three forces—pressure down, compression together, and rotation of the tibia—until the release occurs and the lower leg rotates slightly further in the direction in which the rotation was maintained. When you slowly decrease the rotation and compression, the knee will return to its normal physiologic position, and the tide, that is, the cranial rhythmic impulse (discussed in Chapter 3), will flow through the knee. Reevaluate the centering of the tibial tubercle, which will have moved toward the midline of the patella. Note that the transverse ligament of the knee will correct itself when you have treated the strained cruciate ligaments.

**Figure 4.18** Cruciate ligaments technique



# The Thigh Region

## *Tensor Fascia Latae*

TECHNIQUE: Supine direct myofascial release

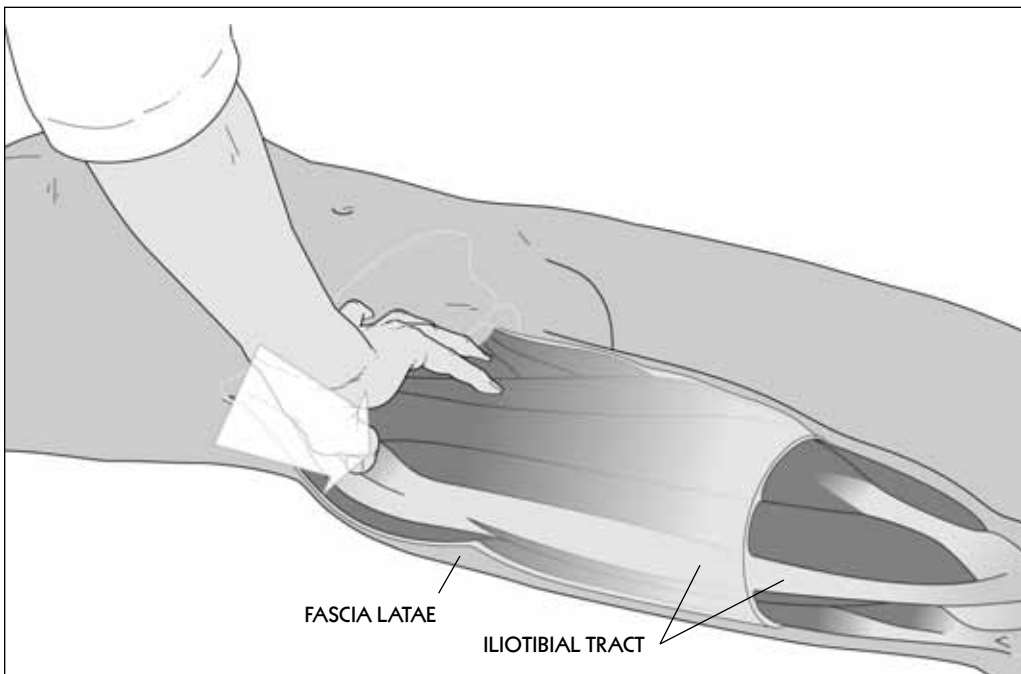
SYMPTOMS/DIAGNOSIS: Pain in the lateral groin area on flexing the thigh. Pain is just superior and anterior to the greater trochanter of the femur.

PATIENT: Supine

PHYSICIAN: Standing, facing the affected hip

PROCEDURE: Locate the center of the spasm in the tensor fascia latae just anterior and superior to the greater trochanter. Contact the strain with your thumb and push posteriorly and medially, maintaining steady balanced pressure, until a release occurs.

**Figure 4.19** Tensor fascia latae technique



## ***Iliotibial Tract (Band)***

TECHNIQUE: Supine direct myofascial release

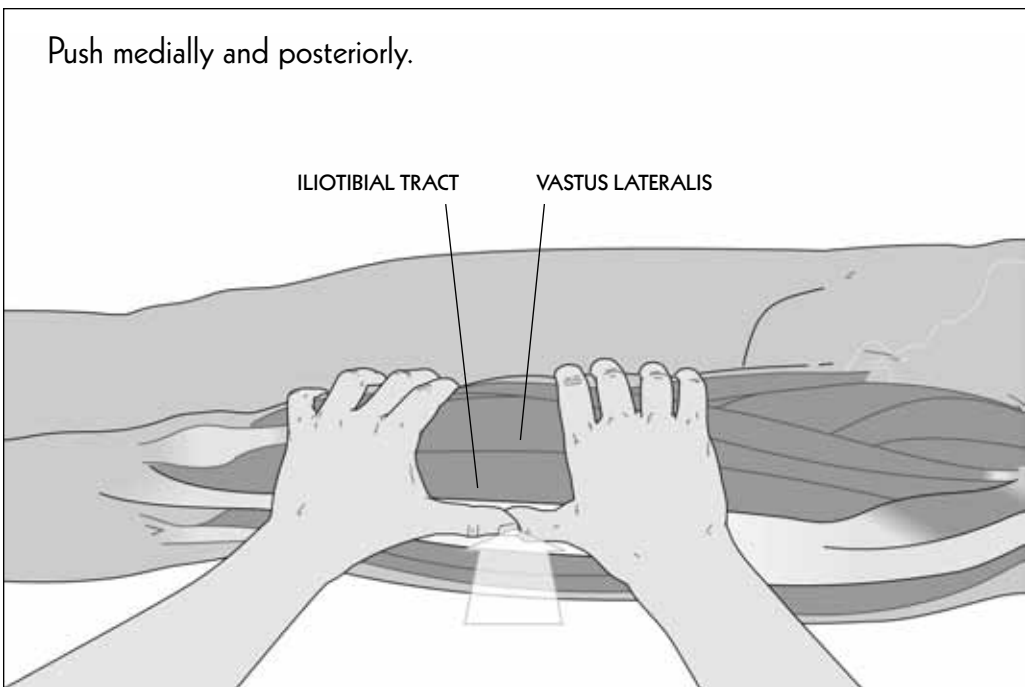
SYMPTOMS/DIAGNOSIS: Pain down the lateral aspect of the thigh

PATIENT: Supine

PHYSICIAN: Standing or seated, facing the affected thigh

PROCEDURE: Locate the tightest point in the tract along the lateral aspect of the thigh. Using the pad of your dominant thumb, reinforced by your other thumb, press medially and posteriorly on this point. Maintain this balanced pressure until a release occurs. The pressure is in the 10- to 30-pound range.

**Figure 4.20** Iliotibial tract technique



# Adductors of the Femur

## *Pectineus, Adductor Brevis, Adductor Longus, Adductor Magnus, and Gracilis*

**TECHNIQUE:** Supine direct myofascial release

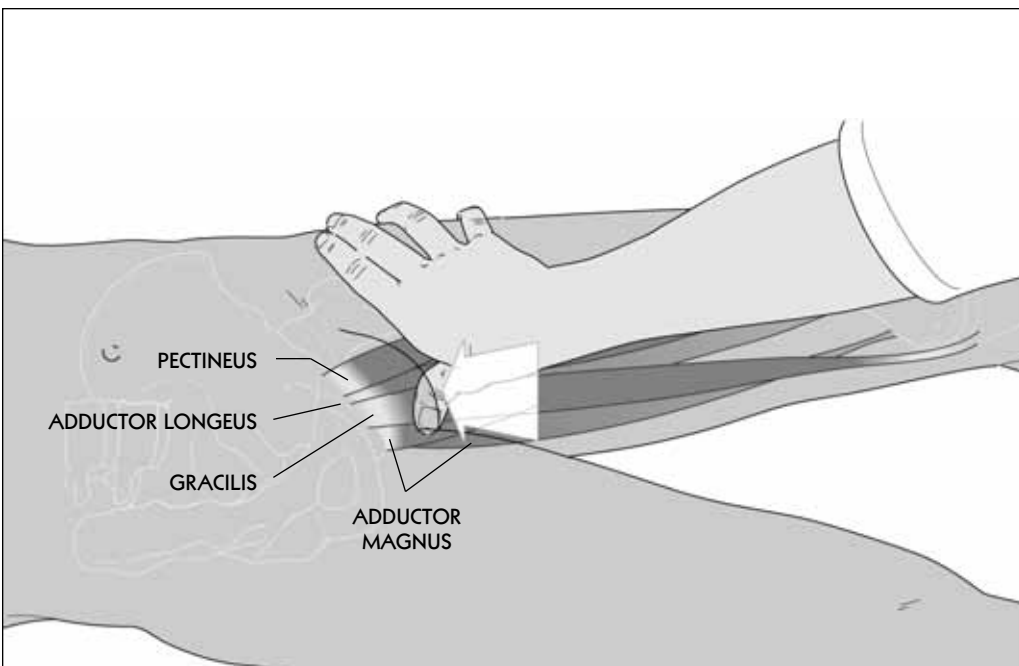
**SYMPTOMS/DIAGNOSIS:** Groin pain or pain in the medial thigh as a result of strained groin muscles. The foot on the affected side will be relatively internally rotated (pigeon-toed).

**PATIENT:** Supine with the leg slightly abducted

**PHYSICIAN:** Standing on the opposite side of the table from the medial aspect of the affected thigh

**PROCEDURE:** Locate the specific muscle or muscles that are in spasm on the upper medial aspect of the thigh. With the pad of your thumb on the tightest point of spasm, press toward the femur superiorly, slightly posteriorly, and laterally. Maintain this steady, balanced, perpendicular pressure to the fibers until the muscle relaxes. This area is very tender, and if you let the patient know that you are aware of this tenderness, he or she can better tolerate the discomfort until a release occurs. Treat each muscle that is in spasm. When the groin muscles and external hip rotators are all balanced and the patient is fully relaxed, both feet will turn out equally.

**Figure 4.21** Adductors of the femur technique



## External Hip Rotators and Abductors of the Femur

### *Gluteus Minimus, Superior Gemellus, Obturator Internus, Inferior Gemellus, Quadratus Femoris, Piriformis, and Gluteus Medius*

SYMPTOMS/DIAGNOSIS: Sciatica, hip pain, pain in the gluteal area, or pain down the back of the leg

PATIENT: Lateral recumbent position with the affected hip up and both hips flexed to approximately 90 to 120°. Knees bent to approximately 90°. The patient's back is approximately four inches from the edge of the table.

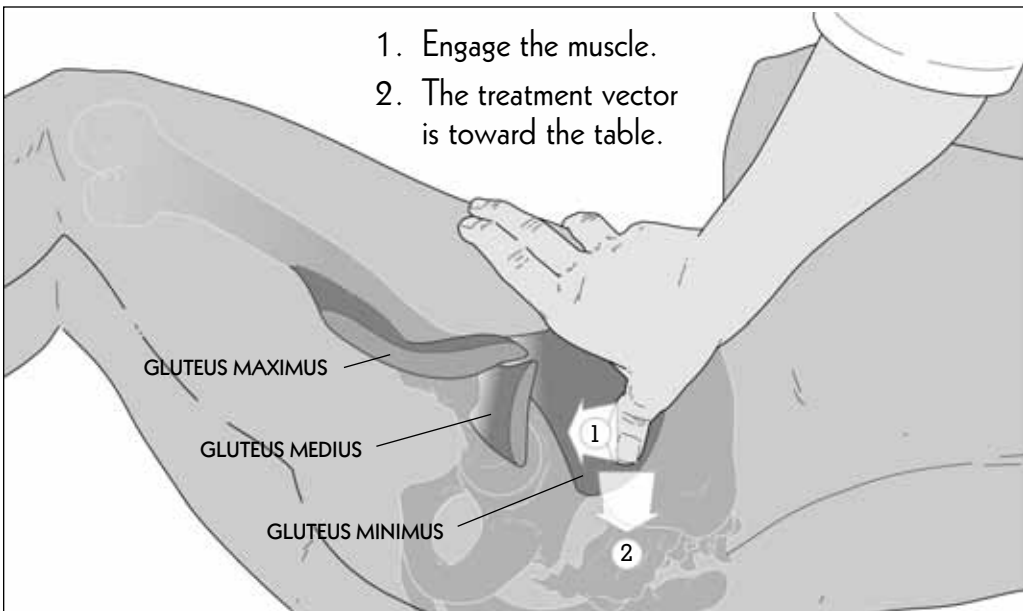
PHYSICIAN: Standing behind patient at the level of patient's hip, facing the table

### *Gluteus Minimus*

TECHNIQUE: Lateral Recumbent Direct Myofascial Release

PROCEDURE: If the gluteus minimus is in spasm, there will be a tender lump just lateral to the upper one-third of the sacroiliac joint. With the pad of your thumb, first press slightly anteriorly and medially on the tightest point in this muscle. Maintain this balanced pressure until the release occurs and the muscle relaxes.

**Figure 4.22** Gluteus minimus technique



## ***Superior Gemellus***

TECHNIQUE: Lateral recumbent direct myofascial release

PROCEDURE: Palpate for deep muscle spasm on a direct line halfway between the greater trochanter and the lower portion of the sacroiliac joint. With the pad of your thumb lying across the fibers of the middle of the superior gemellus muscle, maintain firm, steady pressure in a medial, anterior, and slightly inferior direction. Maintain this steady pressure until the muscle relaxes.

## ***Obturator Internus***

TECHNIQUE: Lateral recumbent direct myofascial release

PROCEDURE: Moving inferiorly to the superior gemellus muscle, the next muscle that is encountered is the obturator internus. Move the pad of your thumb just inferior to the superior gemellus muscle, halfway between the greater trochanter and the inferior pole of the sacroiliac joint. If a spasm is found, maintain firm, steady pressure with the pad of your thumb perpendicular to the muscle fibers in a medial, anterior, and slightly inferior direction until the muscle relaxes.

## ***Inferior Gemellus***

TECHNIQUE: Lateral recumbent direct myofascial release

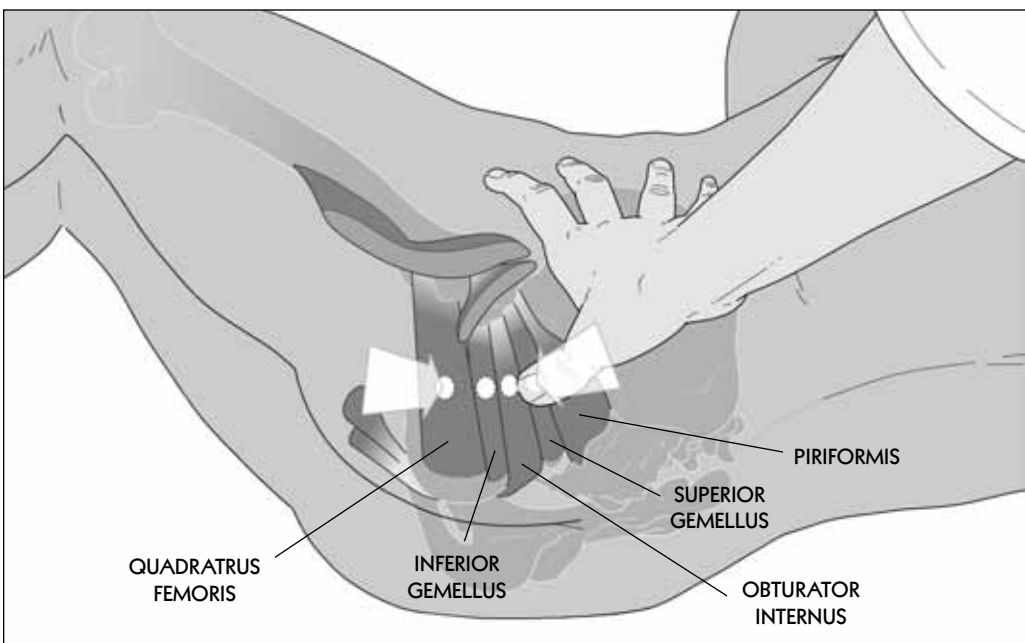
PROCEDURE: Move the pad of your thumb even further in an inferior direction down the depression between the greater trochanter and the ischium, and palpate for spasm in the inferior gemellus muscle (halfway between the upper portion of the ischial tuberosity and the midportion of the greater trochanter). Treat with the pad of your thumb perpendicular to the fibers, maintaining firm, steady pressure anteriorly and medially.

## *Quadratus Femoris*

TECHNIQUE: Lateral recumbent direct myofascial release

PROCEDURE: Using the pad of your thumb, palpate the groove in which the sciatic nerve is found, halfway between the ischial tuberosity and the lesser trochanter. A muscle spasm at the lateral inferior portion of the buttocks indicates that the quadratus femoris muscle is involved. With the pad of your thumb perpendicular to the fibers, press in a superior, medial, and anterior direction. Maintain this balanced pressure until a release occurs.

**Figure 4.23** Quadratus femoris technique



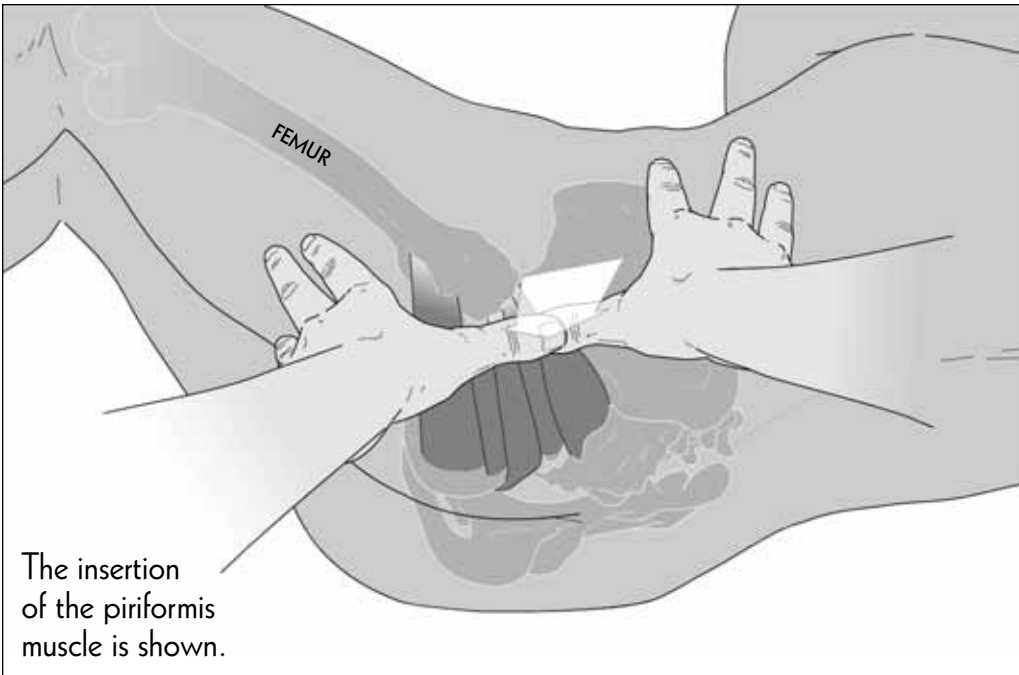


## *Piriformis*

TECHNIQUE: Lateral recumbent direct myofascial release

PROCEDURE: Locate spasms of the piriformis muscle very close to its point of insertion on the femur, slightly posterior and inferior to the superior portion of the greater trochanter. Maintain balanced firm pressure with the pad of your thumb medially (down toward the table) on this spasm until a release occurs.

**Figure 4.24** Piriformis technique

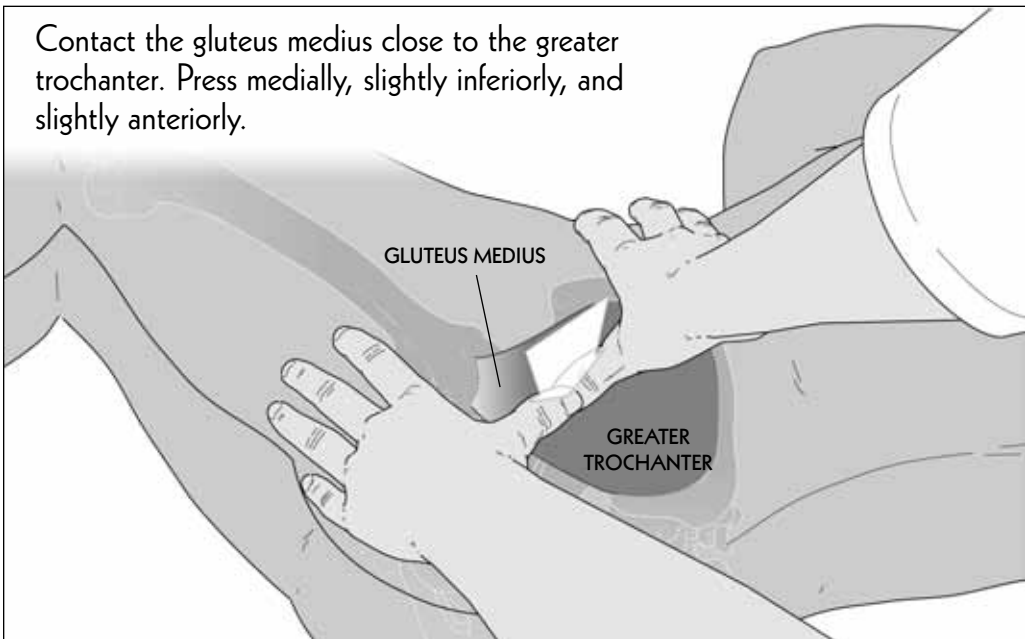


## *Gluteus Medius*

TECHNIQUE: Lateral Recumbent Direct Myofascial Release

PROCEDURE: The gluteus medius attaches to the superior portion of the greater trochanter. Locate the muscle spasm just superior to the greater trochanter of the femur. Using the pad of your thumb(s), maintain firm balanced pressure in a medial, slightly inferior, and slightly anterior direction close to the point of the hip. Maintain this steady balanced pressure until a release occurs. **Note:** treating all the previously described external hip rotators usually corrects sciatica.

**Figure 4.25** Gluteus medius technique



**Figure 4.26** Gluteus medius hand placement



# Hip

## *Centering the Femur in the Acetabulum*

**TECHNIQUE:** Lateral recumbent indirect ligamentous articular release

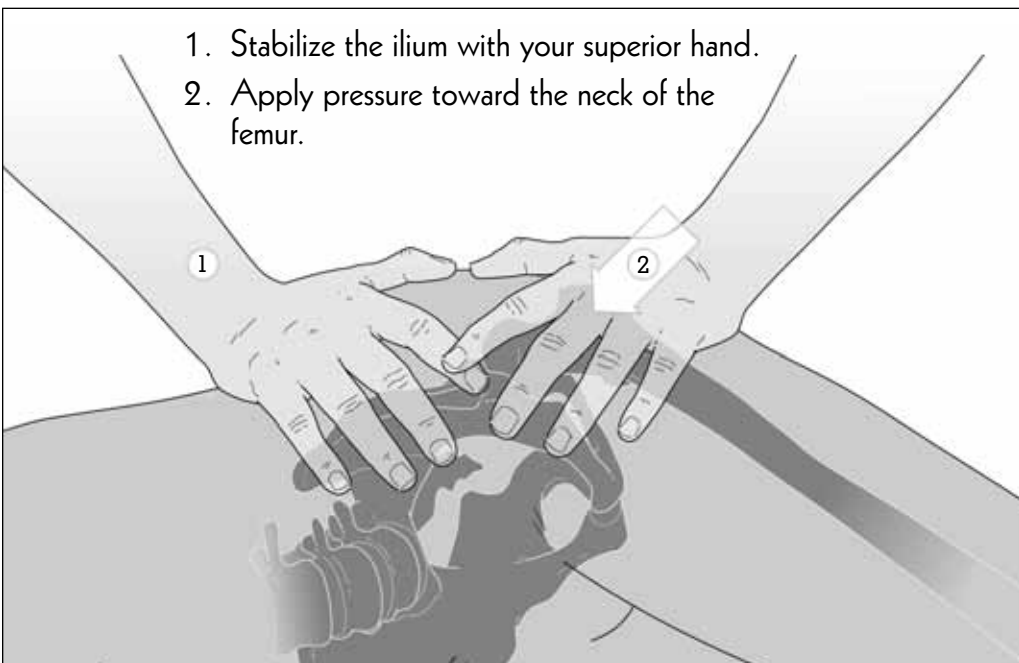
**SYMPTOMS/DIAGNOSIS:** Hip pain, often due to a force transferred up from the lower extremity, or a fall directly on the hip

**PATIENT:** Lateral recumbent position with the hips and knees flexed. The affected hip is on top.

**PHYSICIAN:** Standing, facing the table behind the hip to be treated

**PROCEDURE:** Stabilize the ilium with the palm of your superior hand. With the greater trochanter centered in the palm of your inferior hand, generate a force directly down the neck of the femur to center the femoral head in the acetabulum. This involves a compression between your hands directed medially and slightly superiorly on the femur. Maintain this balanced force until the injury softens, and the tide begins to flow through the hip joint.

**Figure 4.27** The femur in the acetabulum technique



## ***Second Hip Technique***

TECHNIQUE: Supine indirect ligamentous articular release

SYMPTOMS/DIAGNOSIS: Hip pain, often due to a force transferred up from the lower extremity, or a fall directly on the hip

PATIENT: Supine with the affected hip flexed 90° and the knee flexed. The other leg is straight.

PHYSICIAN: Standing at the side of the hip to be treated at the level of the knee, facing the head of the table

PROCEDURE: Roll the knee medially to raise the affected hip slightly off the table. Place the thenar eminence of your hand farthest from the table between the greater trochanter and the table, with your fingers pointing medially. Place the patient's knee in the depression just below your coricoid process to control the distal femur. Grasp the medial proximal aspect of the femur close to the femoral head with the middle finger, index finger, and thumb of your other hand. Use your shoulder to increase or decrease the



**Figure 4.28** Second hip technique hand placement

flexion at the hip and to slightly internally or externally rotate the femur. The patient's foot is dangling just off the table. Compress the hip slightly anteriorly and medially with your thenar eminence on the greater trochanter. With your medial hand grasping the femur close to the femoral head, generate pressure posteriorly and laterally with your middle finger, index finger, and thumb. Using your shoulder, locate the direction of balanced tension in the hip by slightly increasing or decreasing the flexion of the femur and slightly rotating the femur internally or externally. Balance the forces at the hip joint from all three contact points. When the release occurs, the connective tissue surrounding the head of the femur will readjust itself, all three vectors of force will melt, the femur will move back to its functional physiologic position, and the tide will begin flowing through the joint.

**Figure 4.29** Second hip technique

