OSTEOPATHIC APPROACH TO PELVIC DYSFUNCTION & RELATED ANATOMY

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No financial relationships or interests to disclose

"Under disclosure rules, I'm required to tell you I own stock in the company whose drug I'm prescribing."
Objectives

• Address certain anatomical relationships surrounding our center of gravity
• Reinforce our philosophy (and science) that the body is a unit and everything is connected
• Explore common medical complaints by addressing specific anatomical areas
• Discuss pain referral patterns and their relationship to treatment using *Ligamentous Articular Strain/Balanced Ligamentous Tension*
Introduction

-Pelvic girdle foundation for body support and locomotion

-Alterations & restrictions can have a profound effect on vertebral function, thoracoabdominal diaphragm, pelvic/urogenital diaphragm, the lower extremities, and the craniosacral mechanism

-Somatic dysfunction may be causative, contributory, or diagnostic for a wide range of patient complaints
Common complaints requiring evaluation of pelvis include abdominal pain, pelvic pain, dysmenorrhea, dyspareunia, low back pain, urinary tract issues, lower gastrointestinal issues, and neuralgia of the lower extremities.

Lumber spine evaluation is integrated into sacral/pelvic diagnosis.

Goal is restoration of functional symmetry between arthrodial, neural, vascular, lymphatic, and connective tissue elements.

Complaints may be somatic, visceral, or emotional in nature.
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Low back pain

- Lifetime prevalence is 70%
- Most frequent cause of activity limitation in people 45 years of age and older
- Second most frequent reason for physician visits
- Fifth most frequent for hospitalization
- Third ranking reason for surgical procedures
- Sacroiliac joint often implicated
History of SI dysfunction

- No pathognomonic clinical picture
- Pain referral to groin is suggestive
- Pain referred to medial buttock, lateral to sacrum, and below iliac crest is a reasonable indication of SIJ problem
- Quality of pain is usually described as sharp, dull, or aching
- Can also refer to posterior thigh, and occasionally below the knee
- Symptoms usually unilateral, aggravated by sitting and relieved by standing or walking
• **Hamstring tightness** is frequently present in SIJ dysfunction
• If **short leg syndrome** and sacral base un-leveling are present, will complain of low back pain and SIJ pain that is *worse as the day goes on*
• Describe SI pain to the physician as **“hip” pain**
• Since hip joint affects position and motion of the ilium, it also affects the sacrum and therefore lumbar distribution.
Hip Joint related groin pain-when to image?

Diagnosis uncertain AND will affect management decisions

- Diagnosis is obvious, but EXTENT of injury is unclear
- Options: Plain X-Ray (weight bearing and then supine)
- MRI/MR arthrography (offers greater specificity for Labral pathology)
- CT scan
- Ultrasound
Hip Joint

Stability of joint provided by bony configuration; specifically the depth of the joint augmented by the labrum and strong capsular ligaments.

Labrum contains free nerve endings which has potential to be source of pain.

- Creates a suction effect on femoral head, generation a negative atmospheric pressure, enhancing stability.

Joint capsule reinforced by ligaments; strongest superiorly where under most loads during gait and stance.
Functional anatomy

- True pelvis located inferior and posterior to abdomen
- Begins at level of sacral promontory, pectinate line, and pubic bones
- Ends w/ inferior fascia of pelvic diaphragm
Accessory ligaments

- Iliolumbar ligament
- Sacrotuberous ligament - biceps femoris, piriformis, and gluteus maximus
- Sacrospinous ligament
Muscles and Connective Tissue

- **Thoracoabdominal wall** aids in coordinating movements and pressures between the thoracic cage and pelvic girdle.
- **Muscles acting on or through the pelvis** can be classified as primary, Intrinsic muscles of the pelvic diaphragm and secondary, muscles considered to have partial attachment to the true pelvis.
Primary Intrinsic Pelvic Muscles

Pelvic diaphragm: muscular partition formed by *levator ani* (pubococcygeus, puborectalis, and iliococcygeus)

Urogenital Diaphragm: Spans area between the ischiopubic rami and formed by deep transverse perineal and sphincter urethrae muscles and their fascia
Pelvic diaphragm
Pelvic Diaphragm

- Slants downward from the lateral wall to the midline perineal membrane
- Provides support during defecation, inhibit bladder activity, and assist in providing lumbosacral pelvic support.
Urogenital diaphragm

- Rather level
- Creates a small potential space (ischiorectal fossa) bilaterally
Secondary muscles

- Partial pelvic attachment
- Rectus abdominus, Transverse abdominus, Internal/External oblique, Quadratus lumborum
- **External oblique**: forms inguinal ligament as it courses between ASIS and pubic tubercle.
- Each compartment of LE has unique actions on the sacrum and pelvis
Fascia and aponeurosis

- Latissimus dorsi
- Serratus posterior inferior
- 11th rib
- 12th rib
- Aponeurotic origin of transversus abdominis in superior lumbar triangle
- External oblique
- Internal oblique
- Thoracolumbar fascia
- Lateral cutaneous branch of nerve T12
- Lateral cutaneous branch of nerve L1
- Cutaneous branches of posterior rami of nerves L1, L2, L3

(C) Posterolateral view
Fascia and aponeurosis

- Erector spinae
- Thoracolumbar fascia, middle and posterior layers
- Kidney
- Perinephric fat
- Renal fascia
- Quadratus lumborum
- External oblique
- Subcostal nerve (T12)
- Internal oblique
- Free posterior border of external oblique
- L1 anterior ramus
- Aponeurotic origin of transversus abdominis

(A) Posterolateral view
Anterior & medial compartments of thigh may affect iliac and pubic motion
- Quadriceps femoris
- Pectineus
- Sartorius
- Gracilus
- Adductor group
- Iliopsoas
Anterior & Medial Compartment

Can give rise to pain referral pattern
Pectineus
Adductor Magnus       Longus/Brevis
Adductor muscle injury

- Common in sports w/ sudden change in direction (hockey, soccer, rugby, etc.)
- Adductor Longus (70%), Magnus (15%), other (Gracilus, Pectineus, Brevis = 15%)
- May be local tenderness, pain on passive abduction, pain on resisted adduction or combined flexion/adduction
- Types of adductor injury include:
  1) Bony avulsion
  2) Avulsion of fibrocartilage (enthesis)
  3) Partial or complete tear and M-T junction
Adductor injury

- Sports hernia patient w/ associated R adductor longus origin tendonitis
- Hypoechoic thickening that most involved the more superficial fibers (ARROWS) and could be seen to merge superiorly w/ conjoint insertion

- Dotted arrow indicates a further small area of accentuated tendon hypoechogenicity that reflects an additional component of focally more severe tendinosis
Conjoint tendon

-Previously known as inguinal aponeurotic falx

-Formed from lower part of the common aponeurosis of internal oblique and transversus abdominis as it inserts into crest of pubis and pectineal line immediately behind superficial inguinal ring

Forms medial part of posterior wall of inguinal canal
Myositis ossificans

- Formation of bone tissue inside muscle tissue after trauma
- Can present as warmth, swelling, a lump, decreased ROM
- Somewhat common sports injury sustained at any level of competition
- Treatment tends to be conservative: NSAIDs, topical treatments, heat, gentle stretching
- If problem persists, treatment may include physical therapy for stretching and strengthening exercises to help decrease size of bony deposit
- Surgery rarely needed
- If calcification is removed too early and before it’s “mature” (6 to 12 months), it’s highly likely the deposit will form again in muscl
Myositis ossificans
Lateral compartment

Tensor fascia lata and Iliotibial band

The deep fascia of the thigh (fascia lata) is continuous with the superficial thoracolumbar fascia of thorax and spits to form the compartments of the LE.
Iliotibial Band Syndrome (ITBS)

Inflammation of the iliobibial band (ITB) causes outer knee pain and possible pain in the hip.
Posterior compartment

- Gluteus maximus, medius, and minimus
- Piriformis
- Obturator externus
- Gemelli Sup/Inf
- Biceps femoris
- Semimembranosus
- Semitendinosus

Dysfunction of muscles or fascia may affect function of the pelvic girdle

Fascia covering post aspect of piriformis and biceps femoris have been found continuous w/ SI ligament
Implications

• Physical activity and diagnostic tests, such as straight leg raising could stress the SIJ
• Inflammation of SIJ could affect the piriformis and biceps femoris through reactive muscle spasm
• Collectively, the muscles of gluteal region, the quadratus femoris, and iliopsoas comprise the *rotator cuff* of the hip
“Rotator Cuff” of hip

Greater Trochanter--Lateral View

- Gluteus medius muscle
- Gluteus minimus muscle
- Obturator externus muscle
- Iliopsoas muscle
- Quadratus femoris muscle
- Obturator internus with superior and inferior gemelli muscles
- Piriformis muscle
- Psoas muscle
Acetabular--Lateral View

- Gluteus medius muscle
- Gluteus minimus muscle
- Piriformis muscle
- Obturator internus and superior and inferior gemelli muscles
- Quadratus femoris muscle
- Iliopsoas muscle
- Obturator externus muscle
(B) Posterior view

Piriformis

Obturator internus

Sciatic lig.
Pain patterns produced by myofascial trigger points
Anatomic dissections

• Traction on the posterior layer of thoracolumbar fascia transmitted force to the contralateral side, specifically into the fascia of the gluteus maximus

• Contralateral latisimus dorsi to the involved gluteus maximus could affect stability of SIJ owing to the connecting fascia

• Stability of SI region is achieved by a combination of ligamentous and dynamic muscular function crossing the SIJs

• Tendons of the Erector spinae run inferiorly from the paraspinal areas to attach to the posterior surface of sacrum directly through the perimysial membranes of the multifidus
Latissimus Dorsi and contralateral gluteus maximus function together

Together, the latissimus dorsi and opposite gluteus maximus muscles create a force that induces counternutation on the latissimus dorsi side and nutation on the gluteal side. In a right SI lesion, the right GM and left LD will be inhibited and the left GM and right LD will contract.
Multifidus takes its origin from medial sacral crest and runs laterally to attach to medial PSIS
Erector spinae
Integrated function

Pelvic diaphragm forms a basin. When relaxed it works synchronously with the abdominal diaphragm.

Absolutely necessary for efficient movement of lymphatic fluid away from pelvis and perineal tissues.

Somatic dysfunction of pubic symphysis or innominate can place asymmetric tensions (on pelvic and urogenital diaphragm).

→ Pain: pelvic, low back, dyspareunia, painful defecation w/ associated constipation.
Tension of pubovesicular, puborectalis, and pub prostatic fascia from innominate dysfunction can produce UTI symptoms such as burning, frequency, fullness, and a weak stream.

Puborectalis responsible for maintaining tone for ano-rectal angle
Muscles compressing uterus and vagina

Muscles that compress the vagina and act as sphincters include the pubovaginalis, external urethral sphincter, and bulbospongiousus.

Compressor urethrae and external urethral sphincter compress the urethra.
Pelvic fascial ligaments

Fascial ligaments supporting vagina and cervix

Since posterior part of urinary bladder rests on anterior wall of vagina, the paracolpium supports the vagina and contributes to support of bladder
Innervation of bladder and urethra

- White rami communicantes (communicating branches)
- Presynaptic sympathetic fiber (lumbar splanchnic nerve)
- Postsynaptic sympathetic cell body
- Postsynaptic sympathetic fiber entering superior hypogastric plexus
- Aortic plexus
- Lumbar splanchnic nerves
- Right common iliac artery
- Right hypogastric nerve
- Lumbosacral trunk (L4–L5)
- Inferior hypogastric plexus
- Pelvic splanchnic nerves arising from anterior rami of S2–S4 spinal nerves
- Vesical (pelvic) nerve plexus
- Sympathetic fiber to internal urethral sphincter
- Presynaptic parasympathetic fiber from inferior hypogastric plexus
- Intrinsic postsynaptic parasympathetic ganglion
- Postsynaptic parasympathetic fiber
- Abdominal aorta
- Sympathetic trunk
- Inferior mesenteric (prevertebral) ganglion
- Paravertebral sympathetic ganglion
- Superior hypogastric plexus
- Left hypogastric nerve (cut end)
- Left common iliac artery
- Gray rami communicantes (postsynaptic fibers to lower limb)
- Sciatic nerve
- Urinary bladder
- Pelvic pain line
- Pudendal nerve (S2–S4)
- Internal urethral sphincter
- Prostate and prostatic nerve plexus
- Somatic motor fiber
- Somatic sensory fibers
- External urethral sphincter
# Muscles of pelvic walls and floor

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<th>Boundary</th>
<th>Muscle</th>
<th>Proximal Attachment</th>
<th>Distal Attachment</th>
<th>Innervation</th>
<th>Main Action</th>
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<td>Lateral wall</td>
<td><strong>Obturator internus</strong></td>
<td>Pelvic surfaces of ilium and ischium; obturator membrane</td>
<td>Greater trochanter of femur</td>
<td>Nerve to obturator internus (L5, S1, S2)</td>
<td>Rotates thigh laterally; assists in holding head of femur in acetabulum</td>
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<tr>
<td>Postero-superior wall</td>
<td><strong>Piriformis</strong></td>
<td>Pelvic surface of S2–S4 segments; superior margin of greater sciatic notch and sacrotuberous ligament</td>
<td>Greater trochanter of femur</td>
<td>Anterior rami of S1 and S2</td>
<td>Rotates thigh laterally; abducts thigh; assists in holding head of femur in acetabulum</td>
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<tr>
<td>Floor</td>
<td><strong>Coccygeus</strong> (ischiococcygeus)</td>
<td>Ischial spine</td>
<td>Inferior end of sacrum and coccyx</td>
<td>Branches of S4 and S5 spinal nerves</td>
<td>Forms small part of pelvic diaphragm that supports pelvic viscera; flexes coccyx</td>
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<td></td>
<td><strong>Levator ani</strong> (puborectalis, pubococcygeus, and iliococcygeus)</td>
<td>Body of pubis; tendinous arch of obturator fascia; ischial spine</td>
<td>Perineal body; coccyx; anococcygeal ligament; walls of prostate or vagina, rectum, and anal canal</td>
<td>Nerve to levator ani (branches of S4), inferior anal (rectal) nerve, and coccygeal plexus</td>
<td>Forms most of pelvic diaphragm that helps support pelvic viscera and resists increases in intra-abdominal pressure</td>
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Tensions on the inguinal ligament can affect the lateral femoral cutaneous nerve → anterior thigh pain
Thoracolumbar & lumbosacral fascia contribute to origin of Internal abdominal oblique and tranversus abdominus.

Fascial restrictions in these areas can restrict sacral motion.

The inner-membranous layer of superficial thoracolumbar (Scarpa) attaches to iliac crest and pubic symphysis.

Continuous w/ fascia of thigh inferior to inguinal ligament, the posterior perineal body, and tunica dartos of scrotum.

Fascial restrictions along its course may affect the thigh, perineum, or abdomen, as fluid collections can traverse along these planes.
Spermatic Cord

- Collection of vessels, nerves, and ducts that run to and from the testes
- Surrounded by fascia, forming a cord-like structure
- Short anatomical course
- Formed at opening of inguinal canal
- Opening located laterally to inferior epigastric vessels
- Passes through inguinal canal entering scrotum via superficial inguinal ring
- Terminates at posterior border of testes
- Contents disperse to supply the various structures of the testes
Fascial Coverings

Contents of cord are bound together by 3 fascial layers, all derived from anterior abdominal wall:

External spermatic fascia—derived from deep subcutaneous fascia
Cremaster muscle and fascia—derived from the internal oblique
Internal spermatic fascia—derived from the transversalis fascia

These 3 layers themselves are covered by a layer of superficial fascia, which lies directly below scrotal skin

The cremaster forms middle layer of spermatic cord fascia. It is a discontinuous layer of striated muscle, oriented longitudinally
Clinical Relevance: Cremasteric Reflex

Spinal reflex consists of two limbs:

1) Afferent(sensory) - ilioingunal nerve fibers from this nerve enter the spinal cord at L1

2) Efferent(motor) - genital branch of genitofemoral nerve (innervates cremaster muscle)
Pain in groin, swelling of scrotum, nausea, vomiting
-Ultrasound evaluation
-Treatment: Immediate surgical consult
-If treated within 6 hours, there is a nearly 100% chance of saving testicle
-Within 12 hours this rate decreases to 70%, within 24 hours is 20%, and after 24 hours the rate approaches zero.
-Once testicle is dead in must be removed to prevent gangrenous infection
Pampiniform Plexus

- Venous drainage of testes
- Wraps around testicular artery
- Acts as a heat exchanger, cooling arterial blood before reaching testes
- As it travels through inguinal canal it condenses into a single testicular vein
- Right testicular vein drains into Inferior Vena Cava
- Left drains to left renal vein
- Other anastomotic branches that allow communication with other veins such as cremaster, scrotal, and internal pudendal vein
Varicocele

- Gross dilation of veins draining testes
- Left testicle most commonly affected; left testicular vein is longer and drains into left renal vein at perpendicular angle
  - "Bag of Worms"
  - 15-20% prevalence (relatively common)
- Sperm quality affected in smaller proportion patients
Tunica Vaginalis

- Spermatic cord
- Epididymis
- Testis
- Tunica vaginalis
Hydrocele

- Collection of serous fluid within tunica vaginalis
- Canal b/w abdominal cavity (peritoneum) and scrotum remains open.

- Painless swelling of one or both testicles

- Congenital form is most commonly d/t a failure of processus vaginalis to close. Usually disappears on its own.

- Adult Hydrocele is often associated w/ trauma and rarely, testicular tumors

- Can also be associated w/ infection

- Check for inguinal hernia
Hydrocele
Ligamentous Articular Strain

• Balanced ligamentous and balanced membranous tension to treat LASs were concepts of A.T. Still.
• William Garner Sutherland, D.O., a student of Still, reinforced these concepts in his teaching.
• Rebecca and Howard Lippincott wrote the principles and techniques down and subsequently published them as “Osteopathic Technique of William Garner Sutherland in the 1949 Year Book of the Academy of Applied Osteopathy.”
• Dr. Anne Wales in the Northeast called what she was doing BLT techniques and Rollin Becker in Dallas called it LAS.
• The term *ligamentous articular strain* most accurately describes the somatic dysfunction that occurs in the ligamentous structures that surround a joint.
Principles of Corrective Technique

• The tension in all the ligaments of a normal joint is balanced and is used to center adjacent bones in their articular grooves and spaces
• This suspension system keeps the bones from being jammed too close together, pulled too far apart, shifted from one side to another, twisted, or bent sideways
• When an injury occurs, one bone in a joint can be compromised beyond physiologic position and some, if not all, of the ligaments become strained
• **Significant number of techniques could be considered examples of myofascial release.** Techniques are based on original principles used by Dr. Still and Sutherland
Ligamentous Articular Strain

Key Concepts

1) Disengage
2) Exaggerate
3) Balance

• Emphasizes the role of ligaments in maintaining articular dysfunction

• *Cardinal principles of approach:*

• **Disengagement** of dysfunctional area (compression/decompression),

• **Exaggeration** of dysfunctional pattern (returning to original position of injury), and

• **Balanced** tension of the ligaments (maintained until release)
Integrated history & physical exam

- Complete PE performed, w/ special emphasis on regions spotlighted in history
- Observation of gait, strength, reflexes, ROM
- Imaging
- Labwork? Inflammatory arthritis? Lyme’s disease?
- History of trauma? Surgeries?
- Car accidents?
Direct Myofascial Release

Technique: Direct Myofascial Release

Symptoms/diagnosis: Urinary frequency, pain in rectum, prostatitis, hemorrhoids, or dyspareunia

Patient: Supine, knees together, flexed to approx. 90 degrees

Physician: seated on opposite side to be treated at mid-thigh level, facing patient’s head

Procedure: check both sides and then treat the one that is tense.

1. Contact the pelvic diaphragm with your thumb. Follow the natural curve of the medial surface of the ischial tuberosity. The applied force should be in a superior and lateral direction.

2. Be sure to treat both layers.
Pelvic Diaphragm—continued

- To engage diaphragm, follow the natural curve of medial ischial tuberosity
- Press superiorly and laterally w/ tip of thumb
- If firm barrier is met, that layer of pelvic diaphragm is in spasm
- Maintain a steady balanced pressure until release occurs and layer softens
- When outer layer is released, be sure to treat inner layer by continuing to press more superior until a second release occurs
Presacral fascia

**Technique** - Direct Myofascial release

**Symptoms/diagnosis** - Pelvic Pain sacral restriction, low back pain, testicular swelling of hydroceles

**Patient:** Supine

**Physician:** Standing, facing the side of table at level of pelvis

**Procedure:** presacral fascia extends down to anterior surface of sacrum as continuation of pervertbral fascia and attaches to the anterior surface of S2

- Effecting change in presacral fascia by means of medial umbilical ligaments.

1. Engage the presacral fascia by contacting the abdomen at approximately the level of the deep inguinal rings.
2. Push posteriorly and slightly inferiorly. Maintain a balance point until a release occurs.
You will notice from the effect this technique has on testicular swelling that you are also effecting strains on inguinal rings

- Form a horseshoe w/ your thumb and middle finger
- Contact the medial umbilical ligaments at approximately the level of the deep inguinal rings
- Located about 2 inches above the pubes and two inches from midline
- Press posteriorly and slightly inferiorly, maintaining a balanced tension until the release occurs
- Should feel a caudad and cephalad pivoting motion. Follows the internal curve of sacrum
Sacroiliac Release

**Technique:** Direct ligamentous articular release

**Symptoms/Diagnosis:** SI pain, low back pain, “hip” pain, pain down the legs

**Patient:** Supine w/ hips and knees bents so that knees are together and feet flat on table, about 1 foot apart

**Physician:** Sitting at side of table
Cross hand sacral release

Technique: Indirect ligamentous articular release

Symptoms/diagnosis: SAME as previous

Patient: Supine

Physician: Sitting on patient’s right (if left handed switch sides)
Cross hand position

-Fingertips at level of sacral base and coccyx in proximal portion of palm

-left hand bridges PSISs w/ your finger tips contacting the left PSIS, and thenar eminence contacting the right PSIS

Compress the PSISs together w/ left hand

-Right hand pushes slightly anterior on sacrum to disengage it
-Carry it superiorly to a balance point w/ the two contact points of your left hand on the two PSISs...like putting equal pressure on feet of tripod
Pelvic Torsion Technique

**Technique:** Indirect ligamentous articular release

**Symptoms/Diagnosis:** Groin or pubic pain, apparent leg length difference, or torsion

**Patient:** Supine

**Physician:** Standing at side of table at mid-thigh level

**Procedure:** Determine in which direction the innominates move more easily by first rotating one side anteriorly and other side posteriorly, then reverse

After release, slowly decrease the rotational pressure and allow innominates to return to normal position

1. Cup the anterior superior iliac spines in your palms and compress them together.
2. Rotate the ilia in the direction of least resistance until a release is felt.
Inguinal ligament

**Technique:** Direct ligamentous articular release

**Symptoms/Diagnosis**
Groin pain, meralgia paraesthetica, torsion of pelvis can cause tight ligament, can impinge on femoral n, a, v. → Quadriceps weakness

**Patient:** Supine

**Physician:** at mid-thigh level on side being treated

**Procedure:**
- Contact middle of inguinal ligament w/ hypothenar eminence
- Press superior, medial, and posterior direction perpendicular to ligament
- Maintain steady, balanced pressure until it softens
Iliopsoas muscle

**Technique:** Direct myofascial release

**Symptoms/Diagnosis:**
Psoas spasms keep the hip flexed whether standing or supine. The patient pushes on thighs to stand up from seated; low back pain

**Patient:** Supine

**Physician:** Standing, facing the table at the level of pelvis, opposite the side being treated

**Procedure:** Contact the Iliopsoas lateral to femoral artery and just inferior and medial to ASIS

- Engage muscle first by directing force posteriorly, toward table, on medial aspect

1. Contact the iliopsoas just lateral to the femoral artery. Push straight down.
2. Once the muscle is engaged, carry it laterally to a balance point until a release is felt and the muscle relaxes.
**Iliolumbar ligament & Erector spinae**

**Technique:** Direct

**Symptoms/Diagnosis:** Pain in lower back, radicular pain down the back of leg, or restricted motion of SI joint and lumbar spine

**Patient:** Lateral recumbent position w/ knees and hips flexed, injured side up

**Physician:** at side, facing patient’s feet

**Procedure:** press anteriorly to contact ligament. Then press anteriorly and inferiorly

-essential to achieving a full release of sacrum and lumbar spine
Internal & external abdominal oblique

Technique: Direct MFR

Symptoms/diagnosis: lateral abdominal pain, groin pain, restricted motion of lumbar and lower thoracic spine

Contact the internal and external oblique muscles halfway between the iliac crest and the costal margin of the lowest rib. Push medially and slightly inferiorly until a release occurs.
ADductors of Femur

Pectineus, Adductors Brevis, Longus, Magnus, Gracilus

Technique: Direct MFR

Symptoms: Groin Pain, or medial thigh pain as a result of strained groin muscles

Foot on affected side will be relatively internally rotated (pigeon-toed)

Patient supine, slight leg abduction
Physician standing opposite
External Hip Rotators and Abductors of Femur

*Gluteus minimus, Superior Gemellus, Obturator internus, Inferior Gemellus, Quadratus Femoris, Piriformis, and Gluteus Medius*

Direct Myofascial release

Symptoms/Diagnosis: Sciatica/Pain down back of leg, hip pain, pain in gluteal area

Patient: lateral recumbent
External Hip Rotators and Abductors of Femur (cont.)

- **Gluteus Minimus**—tender lump just lateral to upper 1/3 of SI joint
- **Superior Gemellus**—Palpate for deep muscle spasm on a direct line halfway between greater trochanter and lower portion of SI joint
- **Obturator Internus**—Halfway between the greater trochanter and inferior pole of SI joint
- **Inferior Gemellus**—Halfway b/w the upper portion of ischial tuberosity and midportion of greater trochanter
- **Quadratus Femoris**—Palpate groove where sciatic n found; halfway b/w ischial tuberosity and lesser trochanter (lateral inferior buttocks)
- **Piriformis**—slightly posterior and inferior to superior portion of greater trochanter, very close to insertion.
Gluteus minimus

- If in spasm, there will be a tender lump just lateral to the upper 1/3 of SI Joint

- Press slightly anteriorly and medially
Piriformis

The insertion of the piriformis muscle is shown.
Hip Technique

Technique: Indirect ligamentous articular release

Symptoms/diagnosis: Hip pain, due to force transferred up from lower extremity, or direct fall on hip

Patient: Supine w/ affected hip flexed 90 degrees and knee flexed.

Physician: on same side as treated hip
  -Roll knee medially to raise hip slightly off table

1. Contact the greater trochanter with your thenar eminence.
2. Grasp the femur as close to the femoral head as possible.
3. Place the knee just below your coracoid process.
4. Balance all three forces along the vectors shown until a release occurs.
IT band

Direct MFR
Symptoms: pain down lateral aspect of thigh

Tensor fascia lata
-pain in lateral groin area

Push medially and posteriorly.
In Conclusion

• The Body is a unit, though it is made up of many parts; and though all its parts are many, they form one body.

1 Corinthians 12:12
References

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