ATSU | National Center for Osteopathic Principles and Practice Education

Introduction to OMM for MDs and DOs

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Counterstrain: Anterior Pelvis

Emily Gibson, DO

Karen Snider, DO, FAAO, FNAOME

– Presentation Preparation

Emily Gibson, DO

Emily Gibson, DO, graduated from Michigan State College of Osteopathic Medicine in 2020. Prior to a change of heart, she completed three years of an OB/GYN residency in Detroit, Michigan. She is now a second-year Osteopathic Neuromusculoskeletal Manipulative Medicine (ONMM) resident in Kirksville, MO, at Northeast Regional Medical Center and Still OPTI.

Karen Snider, DO, FAAO, FNAOME

Karen Snider, DO, FAAO, FNAOME, is a professor at A.T. Still University's Kirksville College of Osteopathic Medicine (ATSU-KCOM). Dr. Snider is board certified in Neuromusculoskeletal Medicine and Osteopathic Manipulative Medicine. She earned her Doctor of Osteopathic Medicine from West Virginia School of Osteopathic Medicine, and she completed her residency at Northeast Regional Medical Center. Dr. Snider has earned fellowship awards from the American Academy of Osteopathy and the National Academy of Osteopathic Medical Educators.

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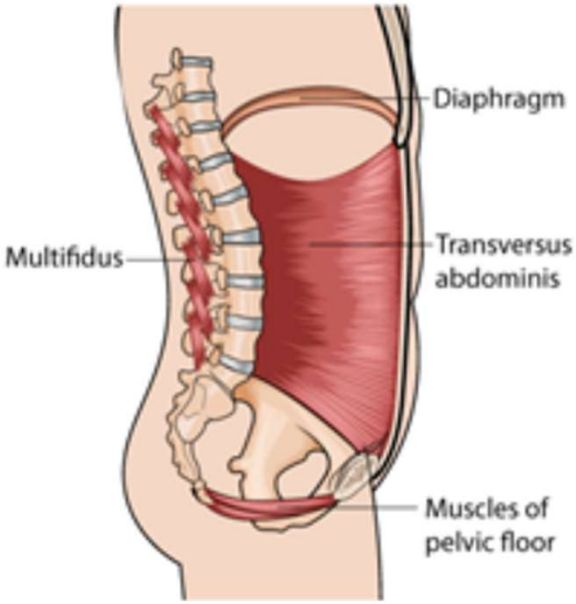
Objectives

- Understand pelvic anatomy and its relation to anterior pelvic tenderpoints
- Identify and treat dysfunction on the anterior pelvis with counterstrain
- Discuss clinical correlations to anterior pelvic tenderpoints
- Identify and treat dysfunction on the lower extremity that may be present with pelvic dysfunction

Pelvic Connections



-Foundation for body support and locomotion

-Central role of coupling mechanical forces of lower extremities with axial skeleton above

-Alteration or restriction of motion at the pelvic girdle could impact:

-vertebral motion

-thoracolumbar diaphragm motion

-urogenital diaphragm

-craniosacral mechanism

-lower extremities

Pelvic Somatic Dysfunctions

-Somatic dysfunction at the pelvis may be due to, contributory, or diagnostic for an array of patient complaints including:

Abdominal pain

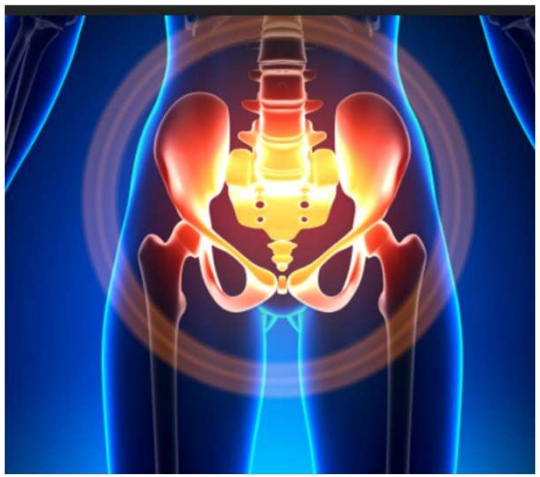
Pelvic pain

Dysmenorrhea

Lower back pain

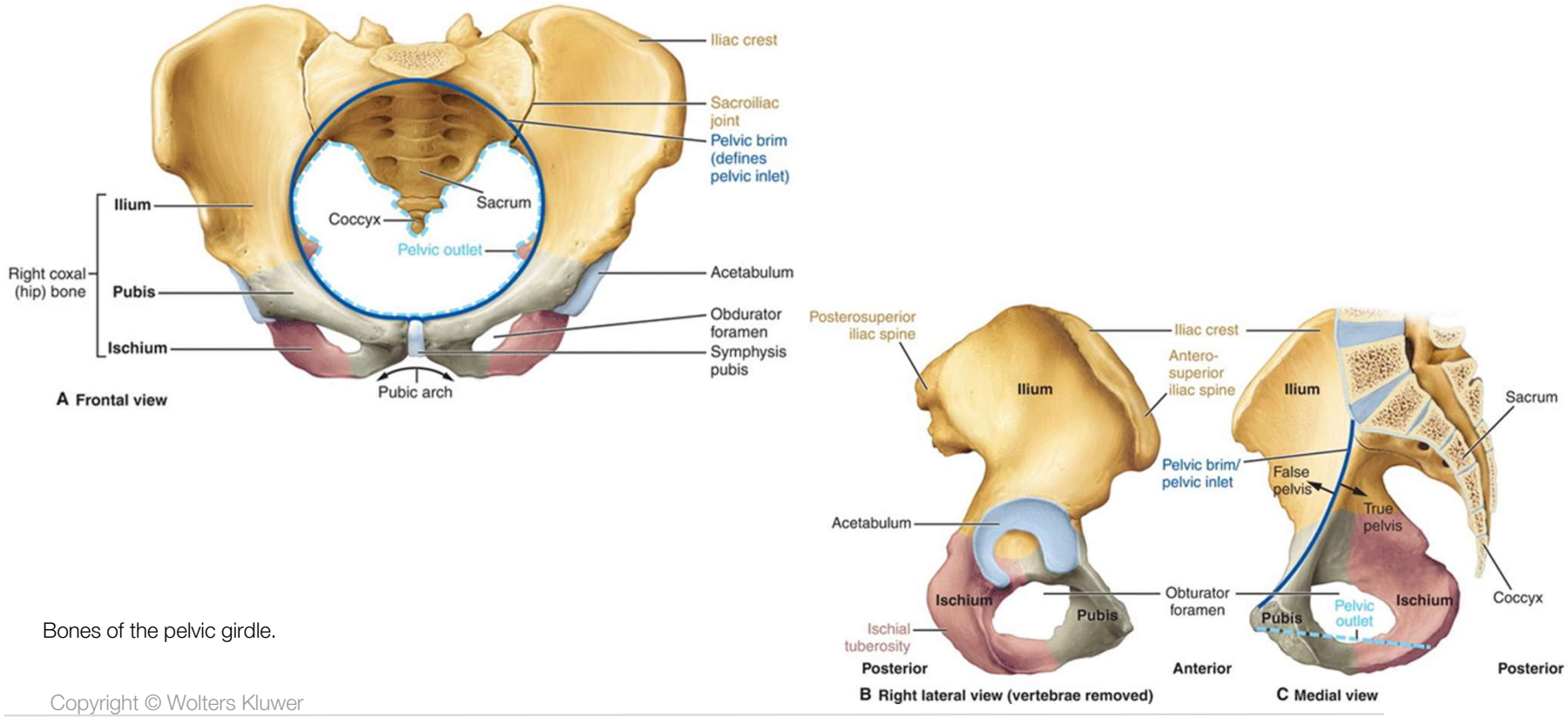
Urinary or GI complaints

Neuralgias of LE



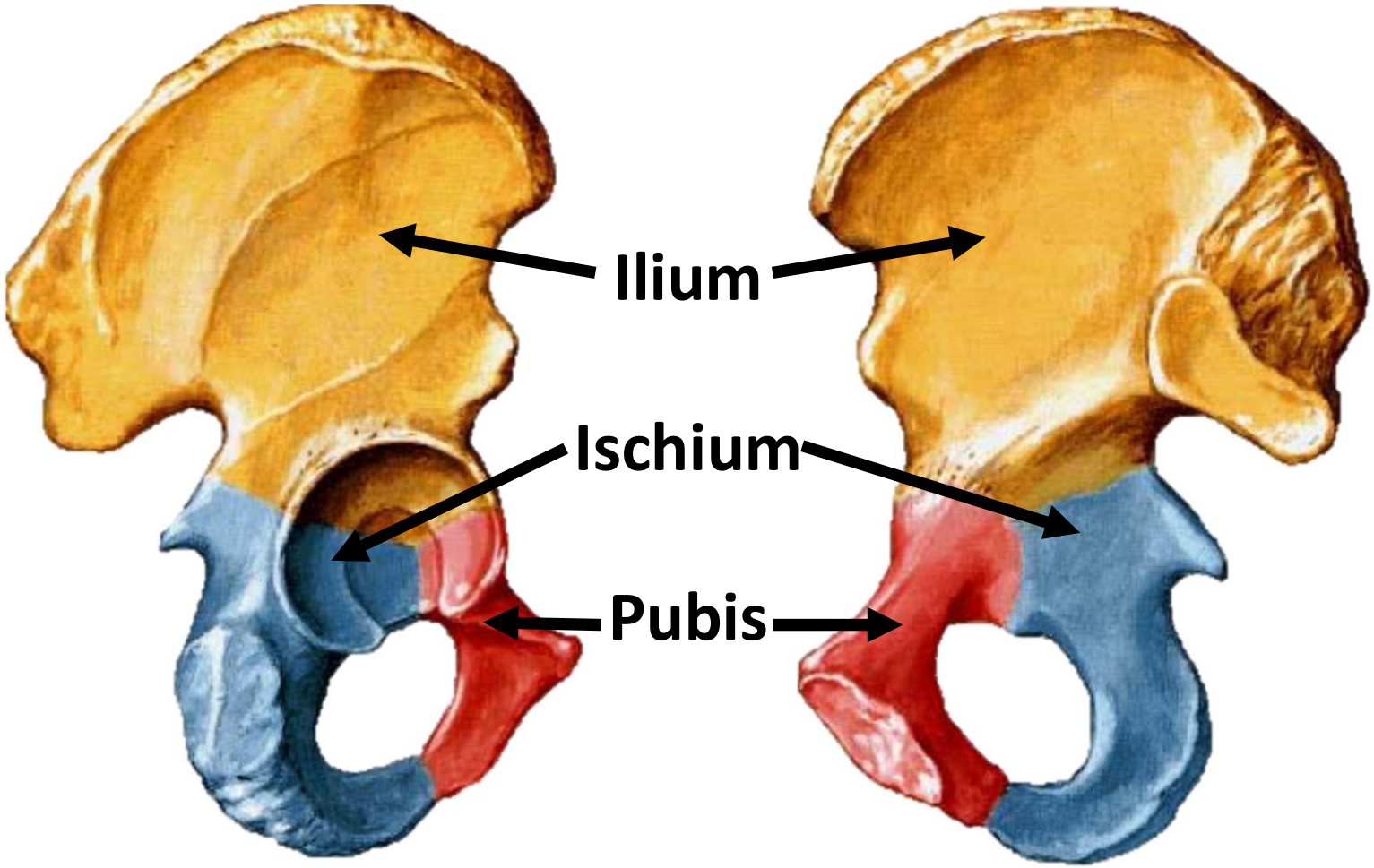
Treatment of pelvic somatic dysfunction can help to restore functional symmetry between arthrodial, neural, vascular, lymphatic, and connective tissue elements

Pelvic Anatomy

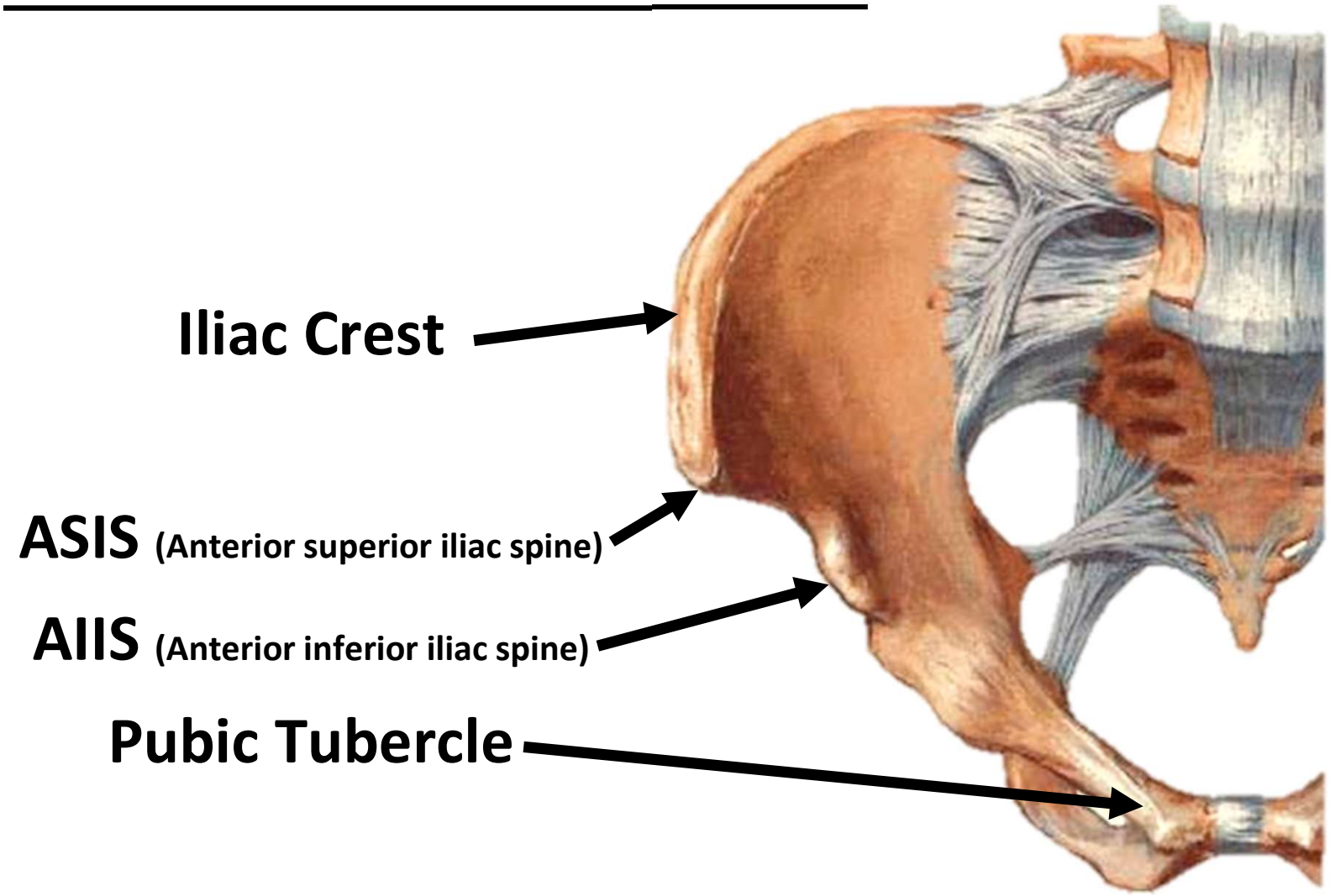


Bones of the pelvic girdle.

Pelvic Anatomy

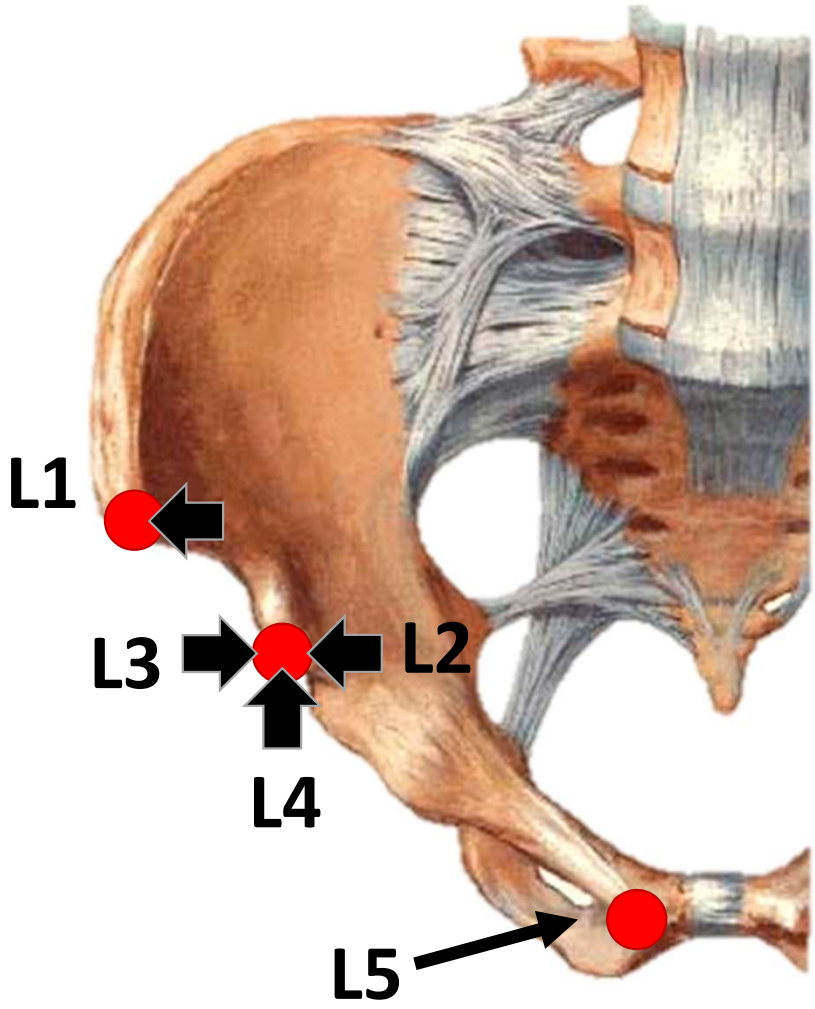


Anterior Pelvic Landmarks



Anterior Lumbar Tenderpoints

- **5 tenderpoints found on bony landmarks of the innominate**
- **correlate with lumbar vertebral dysfunction**



Counterstrain Treatment

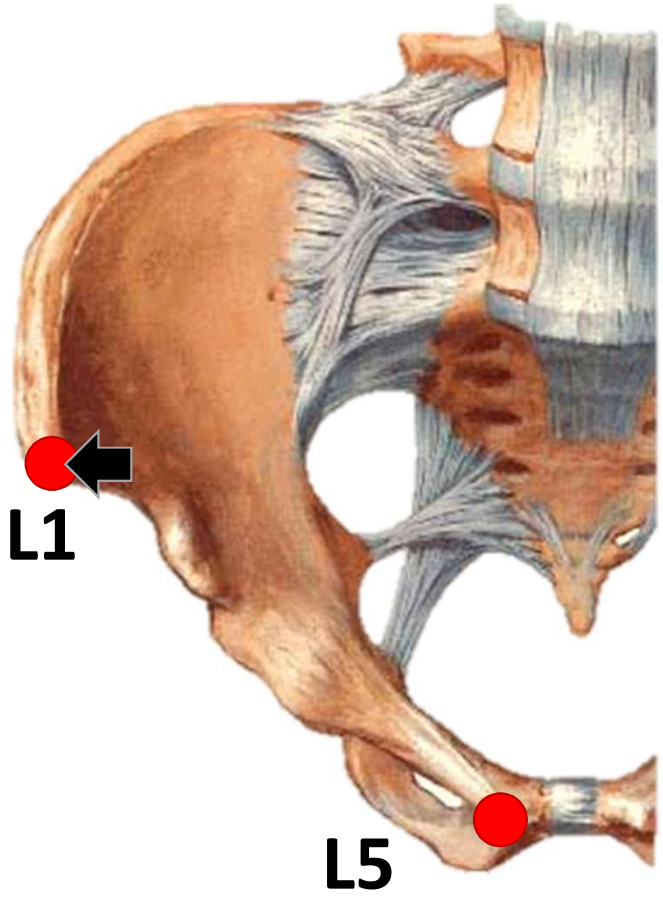
1. **Find the tender point**
2. **Establish a pain scale –**
   - Ex. “This is a 10/10 pain”
   - Position in standard treatment position – Usually wrap the body around the point or approximate the origin and insertion of the affected structure
3. **Recheck TP – “If you had a 10/10 pain before, how much is left now”**
   - Goal is Zero - **minimum is 30%** of original pain (3)
   - Fine tune position for maximum effect
4. **Hold treatment position for 90 seconds – patient must be relaxed**
5. **Slowly & passively return to neutral**
6. **Recheck point – Goal is Zero on pain scale; minimum is 30% of original pain**

Pelvic Landmarks

- **AL1 – Medial ASIS**
  - **Push medial to lateral**

- **L5 – Anterolateral Pub**
  - **Find anterior pubic rami, 1 cm lateral to pubic symphysis**
  - **Push anterior to posterior**

Check bilaterally



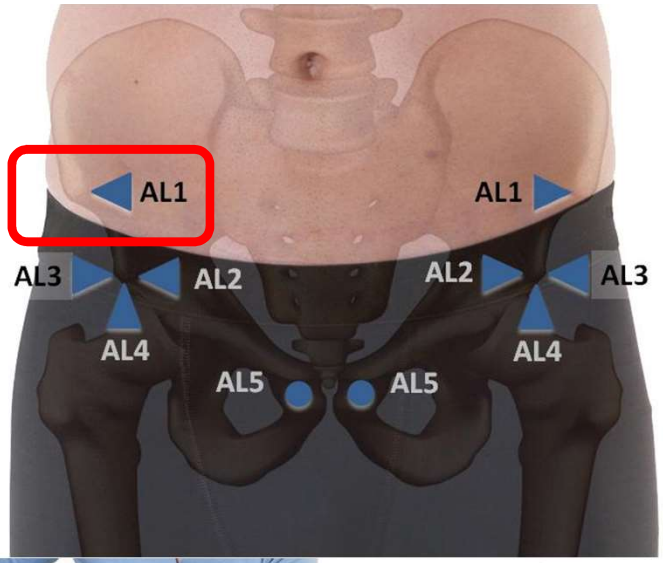
AL1 Locations

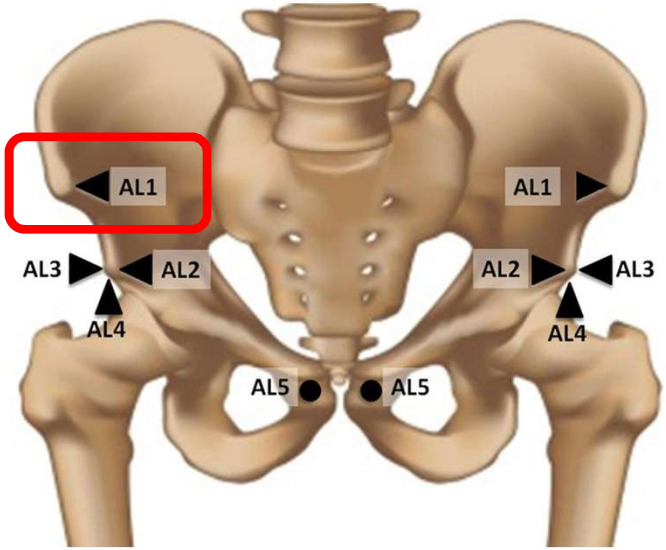
Found on medial aspect of ASIS – *push medial to lateral*

Treatment

1. Supine; Dr. standing on **same** side of dysfunction
2. Lumbar flexion with sidebending torso towards and rotating torso away by flexing hips and knees and pulling hips and legs towards point

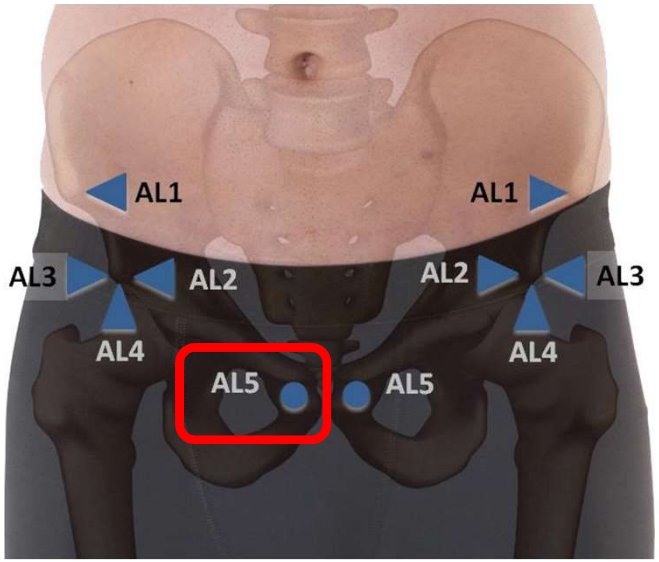
FStRa





AL5 Locations

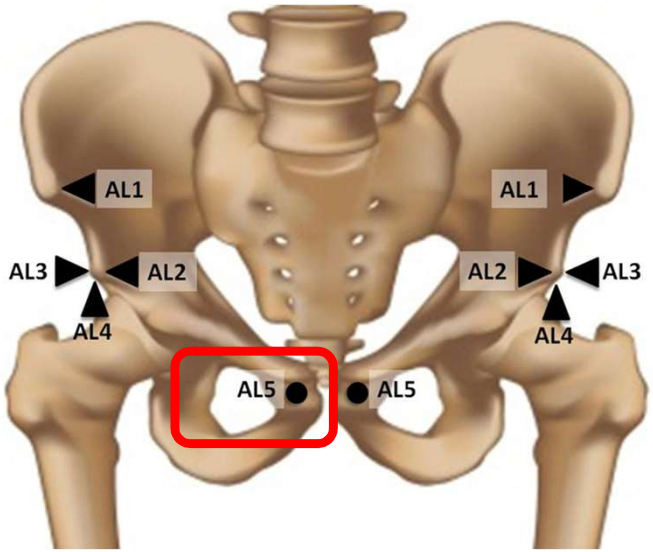
Found on anterior pubic rami 1 cm lateral to pubic symphysis – *push anterior to posterior*

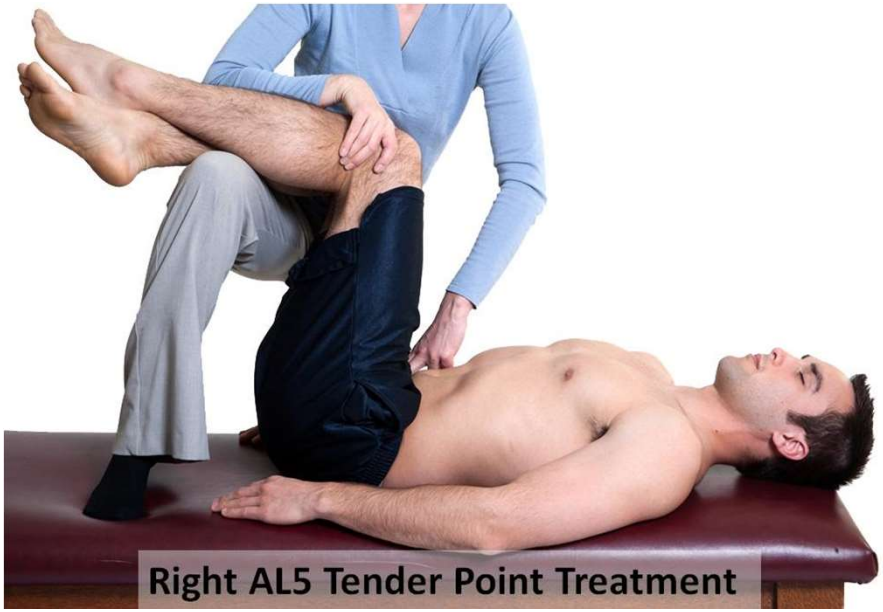


Treatment

1. Supine; standing on **same** side of dysfunction
2. Lumbar flexion with sidebending torso away and rotating torso away from point by flexing hips and knees and pulling hips towards you while swinging hips and feet away from you

FSaRa





Lab Practice 1

AL1= FStRa

Stand on **same** side

Bilateral hip flexion

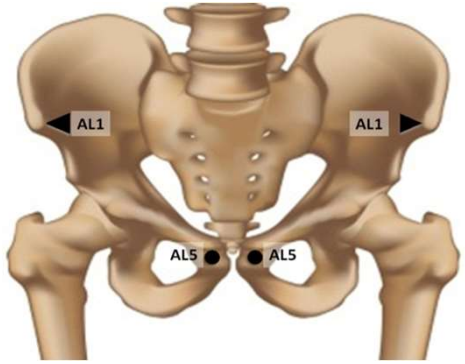
Pull knees and hips (feet) towards you.

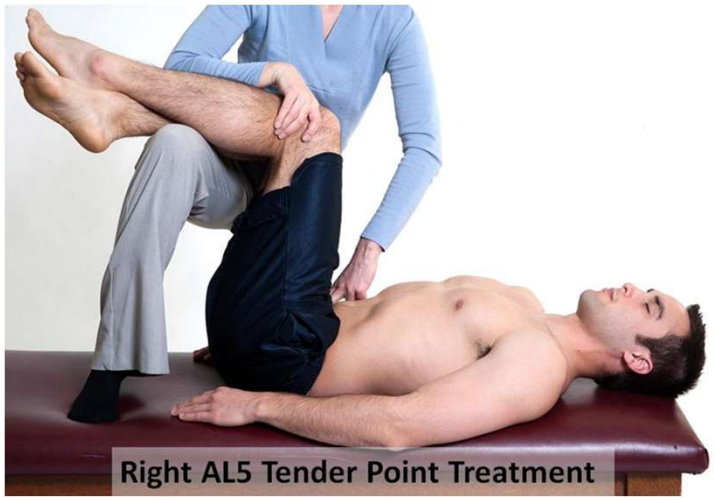
AL5 = FSaRa

Stand on **same** side

Bilateral hip flexion

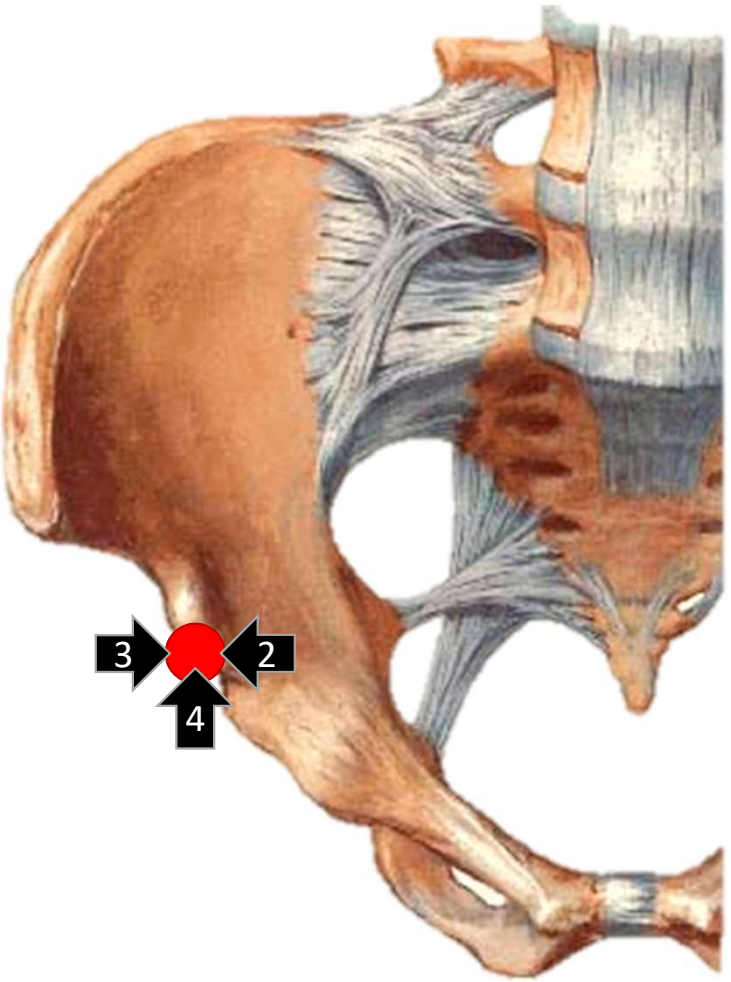
Pull knees towards you and swing hips (feet) away from you.





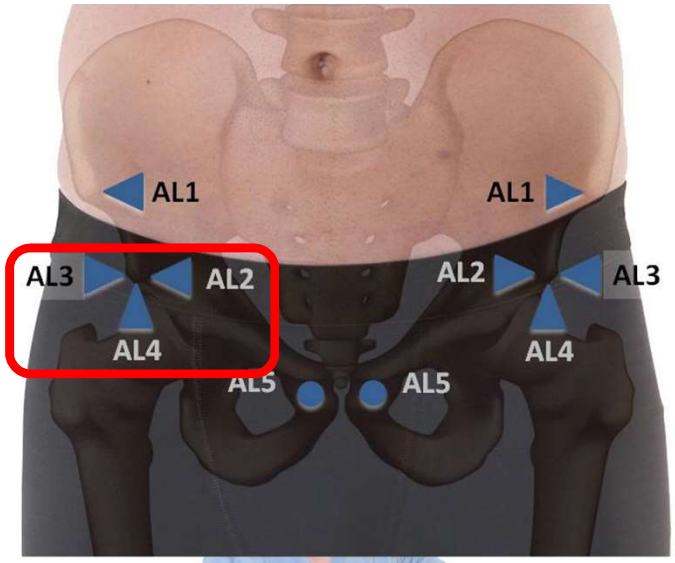
AIIS Landmarks

- **AIIS**
  - **AL2 – Push medial to lateral**
  - **AL3 – Push lateral to medial**
  - **AL4 – Push inferior to superior**



AL2-4 Locations

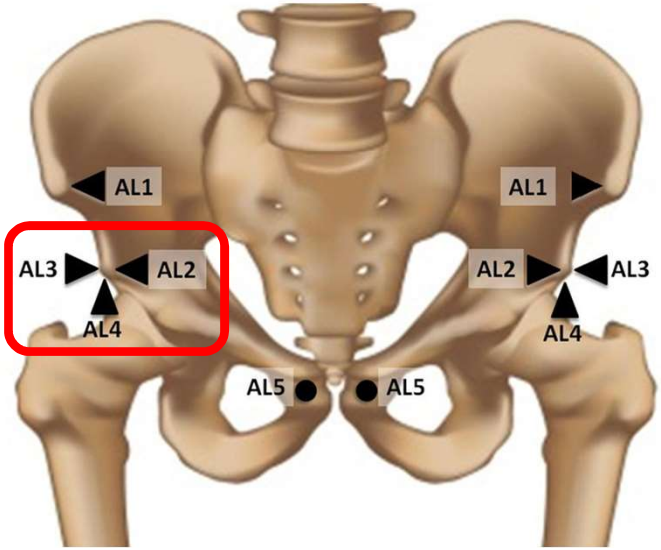
AL2: Medial AIIS - *push medial to lateral*
AL3: Lateral AIIS - *push lateral to medial*
AL4: Inferior AIIS - *push inferior to superior*

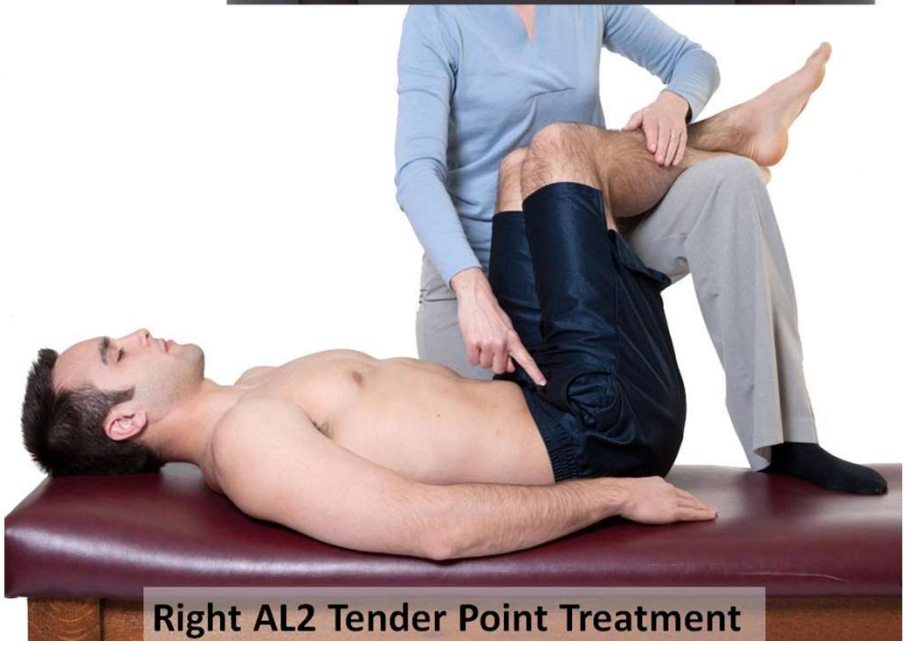


Treatment

1. Supine; standing on **opposite** side of dysfunction
2. Lumbar flexion with sidebending torso away and rotating torso towards by flexing hips and knees and pulling hips and legs towards you

FSaRt





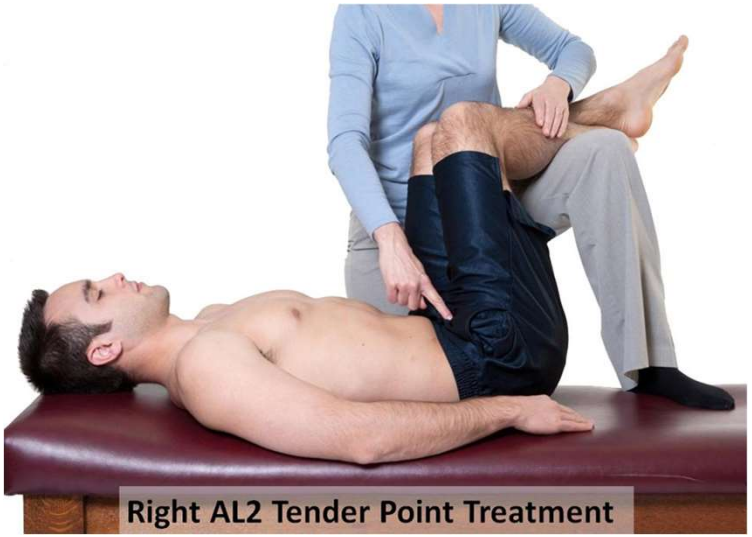
Lab Practice 2

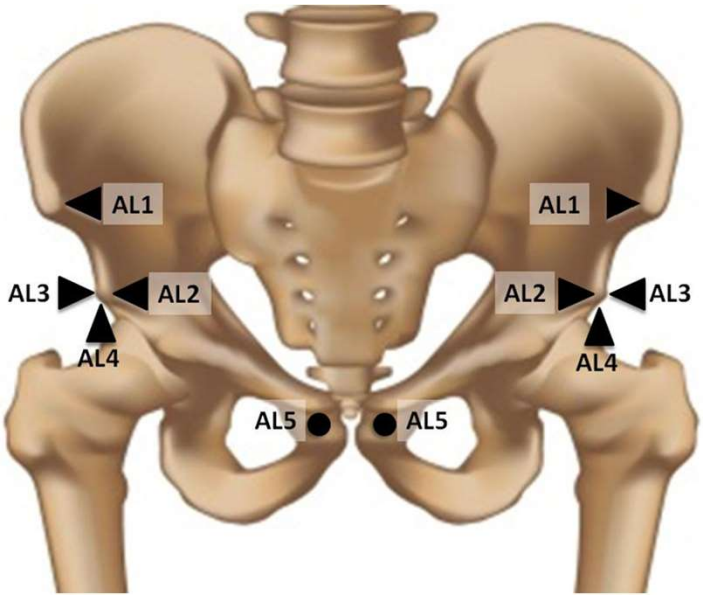
AL2-4 = FSaRt

Stand on **opposite** side

Bilateral hip flexion

Pull knees and hips (feet) towards you.





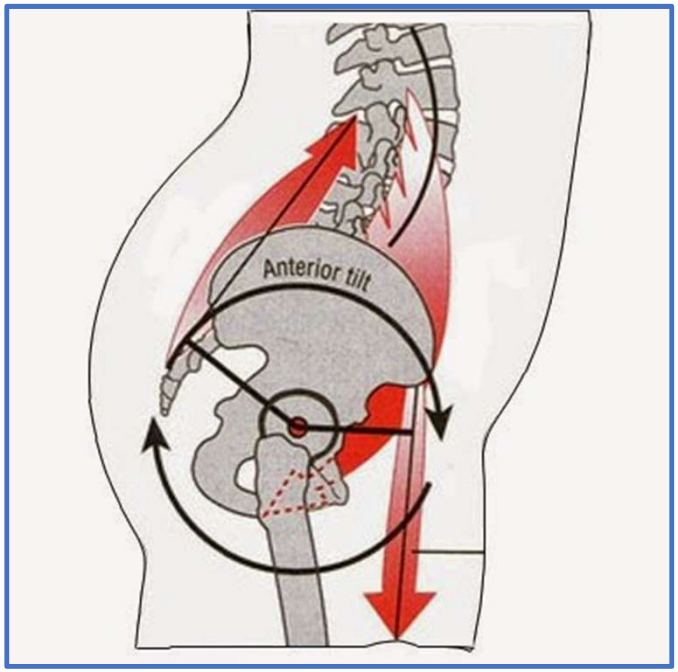
Clinical Correlations

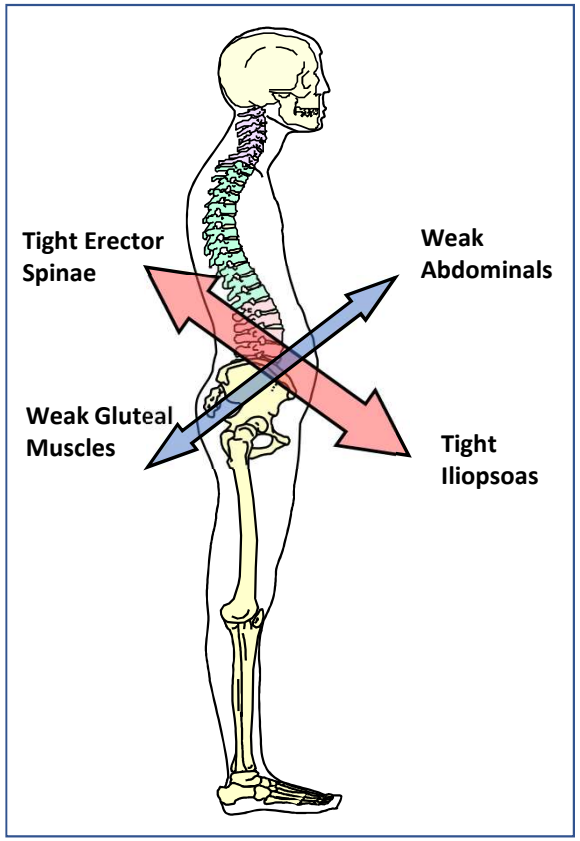
- **AL1, AL2-4**
  - **Common with postural dysfunction**
    - **People who sit a lot**

- **AL5**
  - **Common with pubic somatic dysfunction**
  - **May also occur with bladder dysfunction**
  - **Very common in 2^{nd}/3^{rd} trimester pregnancy**

Clinical Correlations

- **Lower Cross Syndrome**



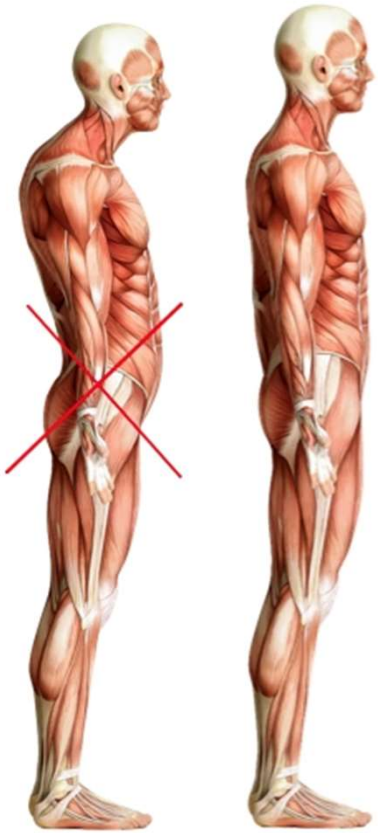


Lower Cross Syndrome

Hypertonic Muscles

- Quadratus lumborum
- Tensor fascia lata
- Hamstrings
- Piriformis
- Gastrocnemius
- Soleus

- Rectus Femoris
- Iliopsoas
- Adductors



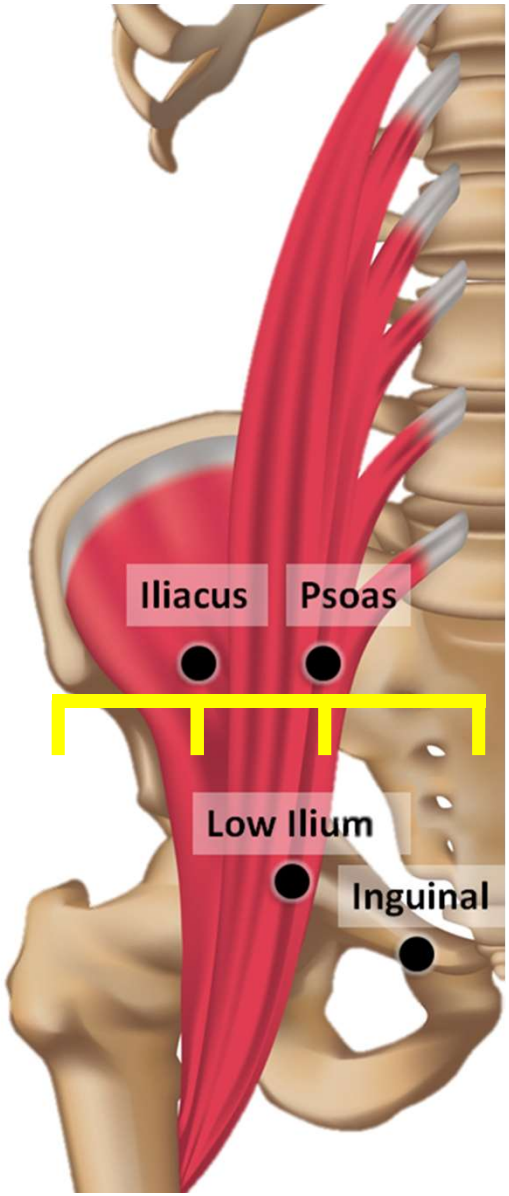
Hypotonic Muscles

- Gluteus maximus
- Gluteus medius
- Gluteus minimus

- Abdominals
- Vastus medialis
- Anterior tibialis
- Peroneals

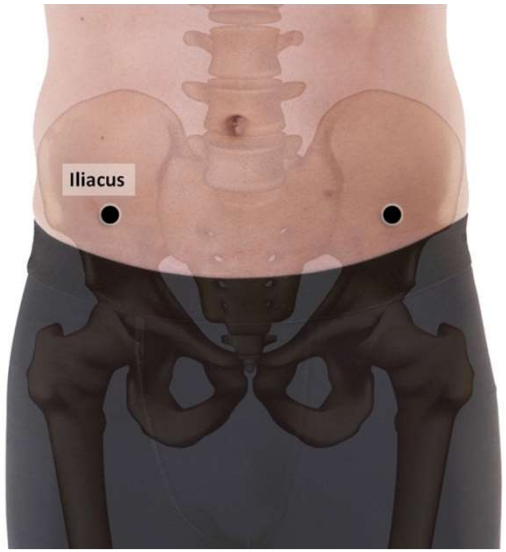
Iliopsoas Tenderpoints

- **Iliacus**
  - **Deep anterior pelvis, 1/3 from ASIS to midline**
- **Psoas**
  - **Deep anterior pelvis, 2/3 from ASIS to midline**



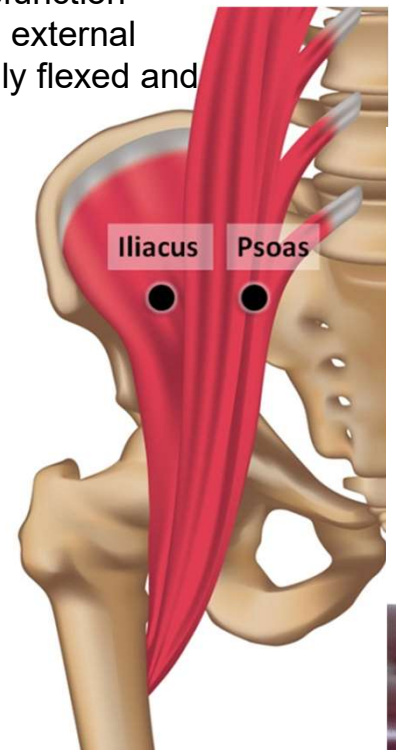
Iliacus (ILA) Location

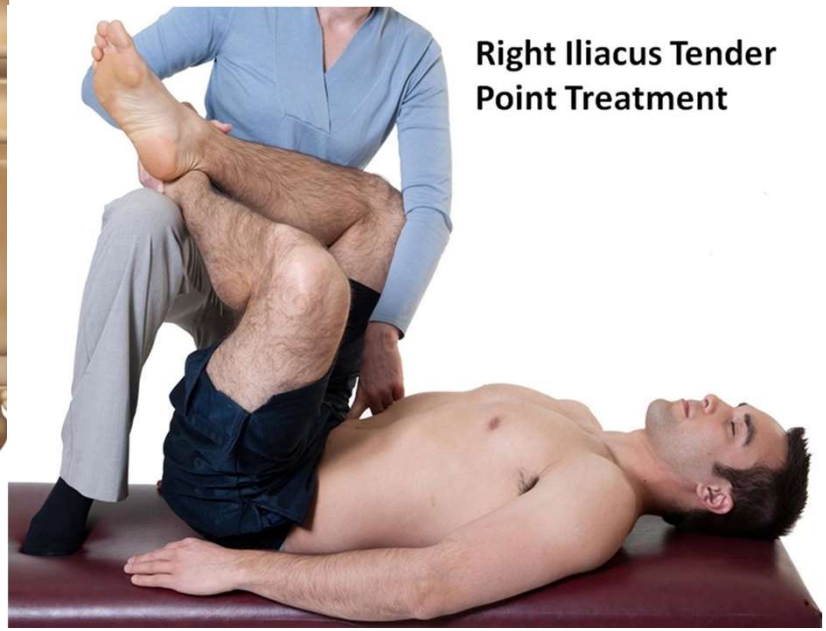
Found deep in iliac fossa, 1/3 of distance from ASIS to midline - *push deep in posterolateral direction toward iliacus muscle*



Treatment

1. Supine; standing on side of dysfunction
2. Marked bilateral hip flexion and external rotation with knees are bilaterally flexed and ankles crossed.





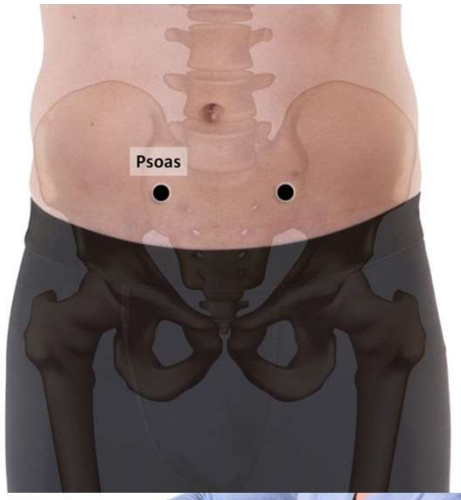
Psoas (PSO) Location

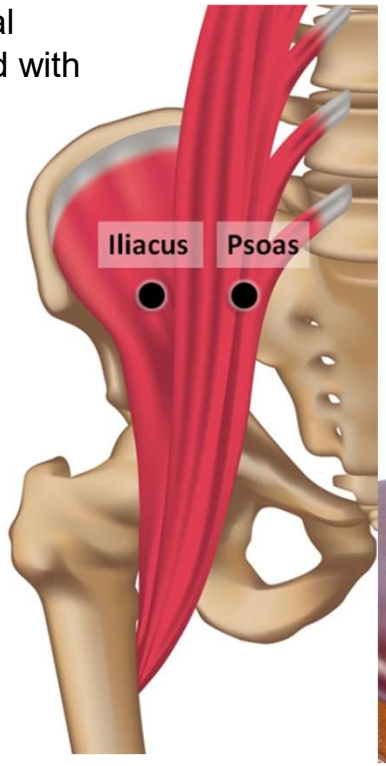
Found deep in anterior pelvis, 2/3 of distance from ASIS to midline - *push deep toward psoas muscles*

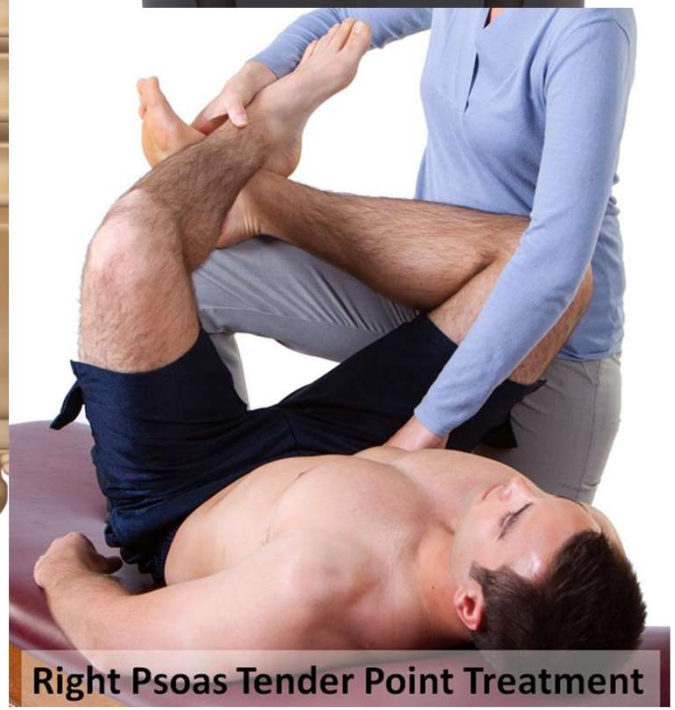
Treatment

1. Supine; standing on side of dysfunction
2. Marked bilateral hip flexion and external rotation with knees are bilaterally flexed with ankles crossed.

Note: May need slight ipsilateral lumbar sidebending.



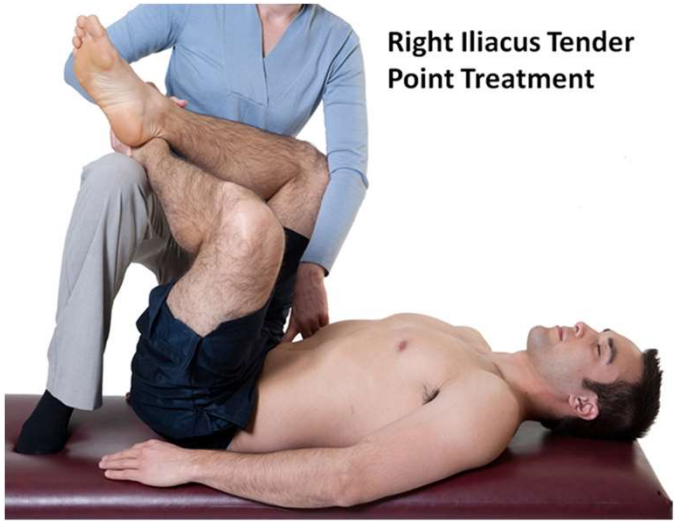




Lab Practice 3

Iliacus

- Marked bilateral hip flexion and external rotation.
- Knees are bilaterally flexed with ankles crossed

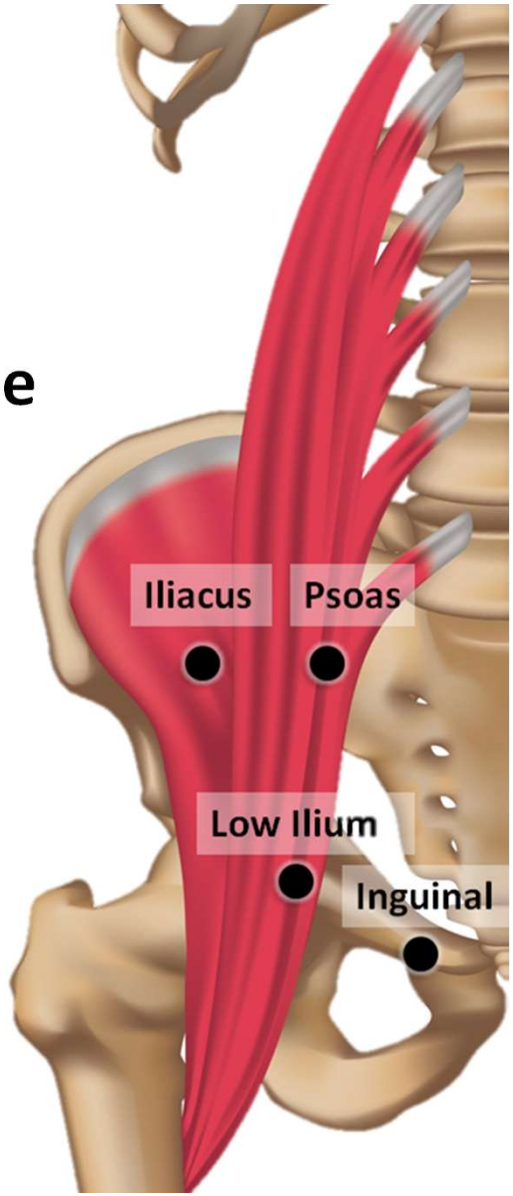


Psoas

- Marked bilateral hip flexion and external rotation.
- Knees are bilaterally flexed with ankles crossed.
- May need slight ipsilateral lumbar sidebending.

Tenderpoints

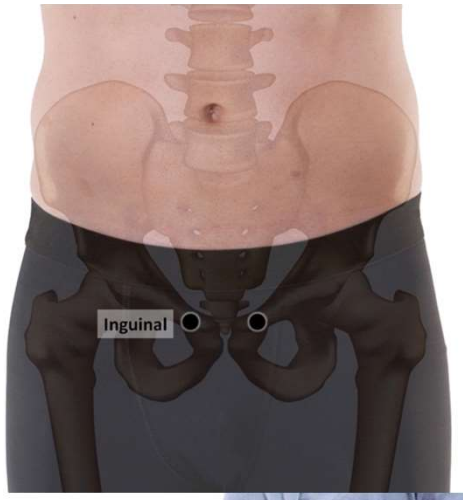
- **Inguinal**
  - **Lateral aspect of pubic tubercle**
- **Low Ilium**
  - **Superior surface of iliopubic eminence**
  - **About halfway between AIIS and pubic tubercle**



Inguinal (ING) Location

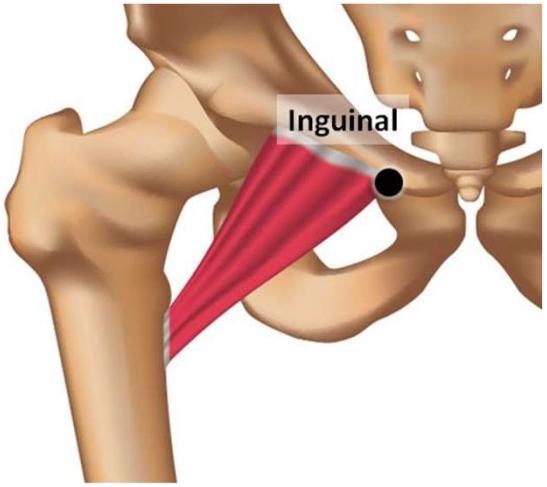
(Pectineus)

Found on lateral aspect of pubic tubercle at attachment of Inguinal ligament and pectineus muscle - *push anterolateral to posteromedial*



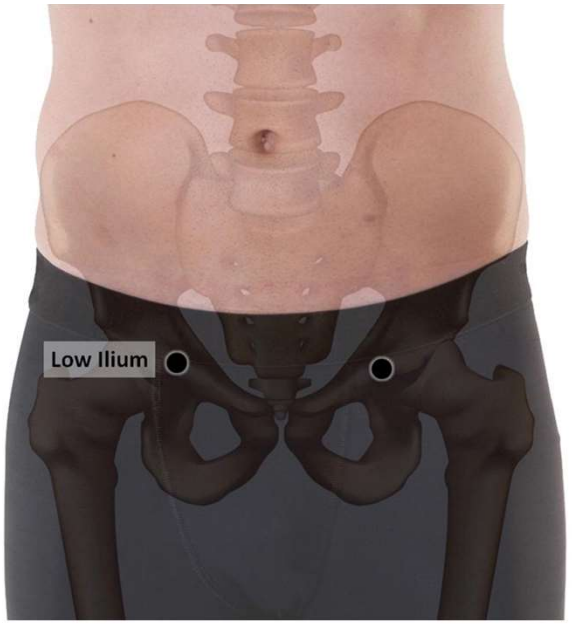
Treatment

1. Supine; standing on side of dysfunction
2. Bilateral hip and knee flexion, contralateral knee crossed over ipsilateral knee, ipsilateral hip adduction and internal rotation produced by pulling ipsilateral foot towards you



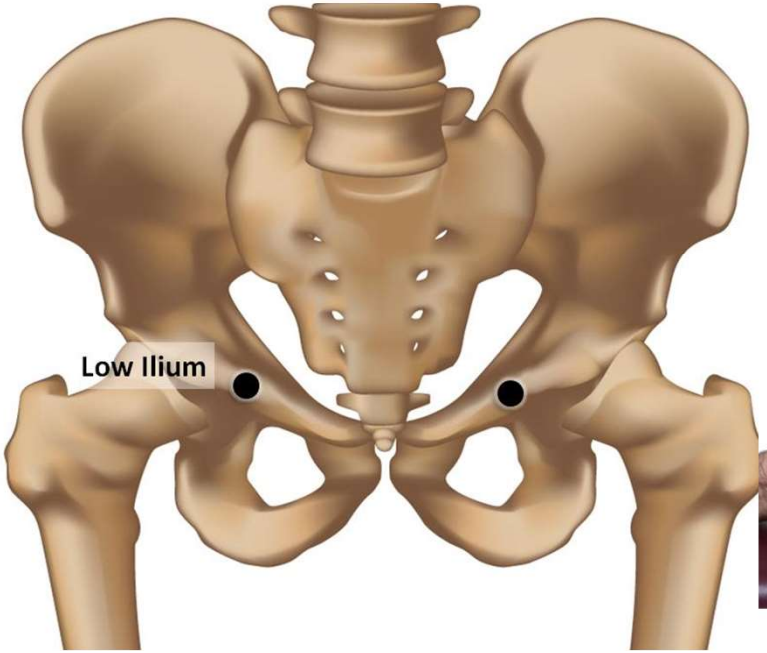
Low Ilium (LI) Location

Found on superior surface of iliopectineal (iliopubic) eminence associated with the attachment of psoas minor – *push anterosuperior to posteroinferior*



Treatment

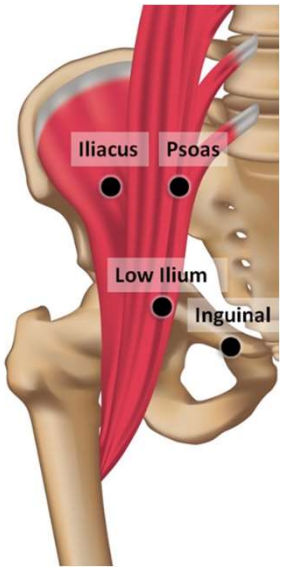
1. Supine; standing on side of dysfunction
2. Marked ipsilateral hip flexion to about 100°



Lab Practice 4

Inguinal

Bilateral hip and knee flexion with contralateral knee crossed over ipsilateral knee and ipsilateral hip adduction and internal rotation produced by pulling ipsilateral foot towards you



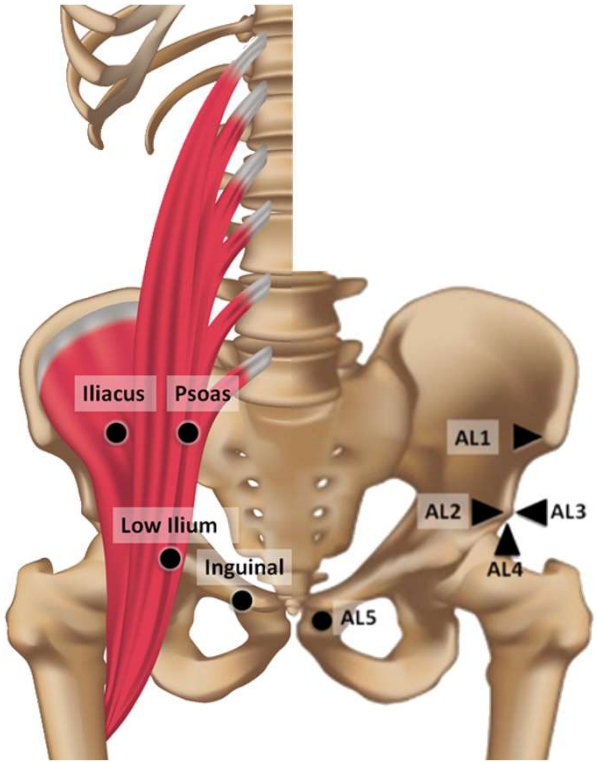
Low Ilium

Marked ipsilateral **hip flexion** to about 100°

Clinical Correlations

- **Psoas/Iliacus**
  - **Psoas Syndrome**
    - ***Athletes, runners, jumpers***
- **Inguinal/Low Ilium**
  - **Pain after forced external rotation of hip**

Anterior Pelvic Tenderpoints



Bursas of Greater Trochanter and Gluteus Medius

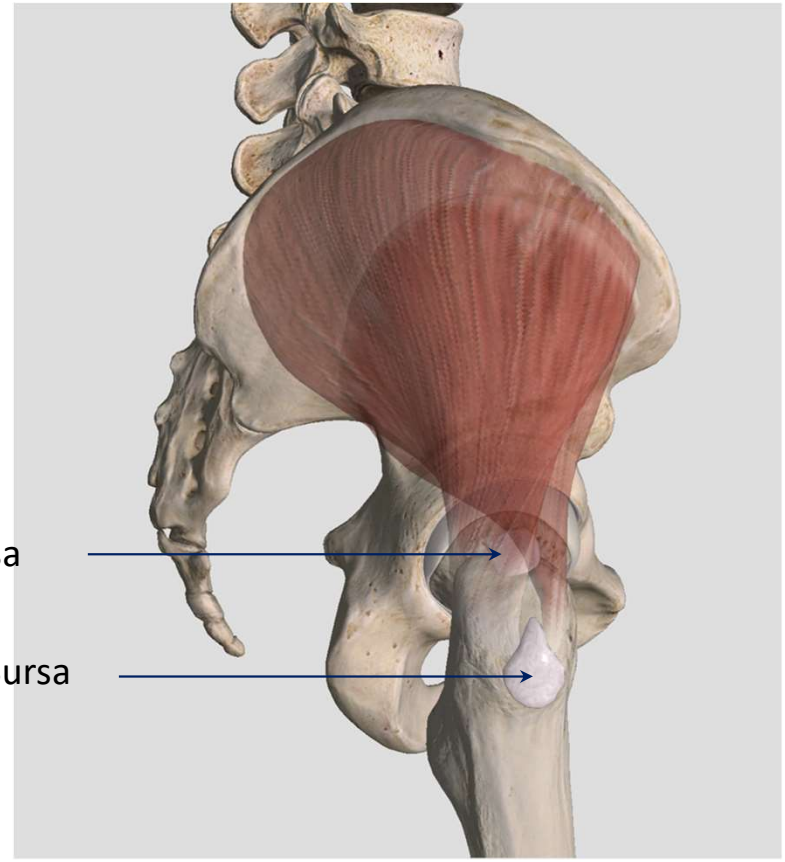
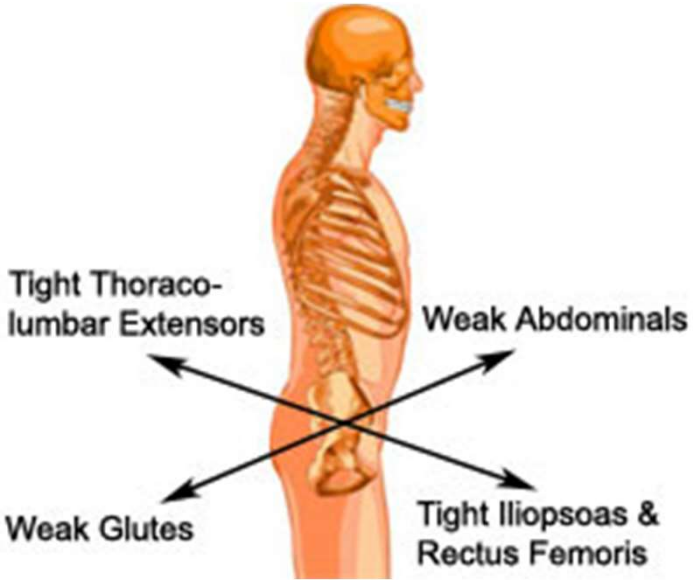


Image from 3D4Medical Complete Anatomy 2018 Application

Clinical correlation

- Trochanteric bursitis
  - Causes: Excessive gluteal tendon friction at trochanteric attachment causes bursa inflammation
  - May also involve direct trauma or cumulative microtrauma over time
  - Aggravating factors: Gait Abnormalities from lumbosacral spine stiffness,
    leg length discrepancy, knee arthritis, ankle sprain, weak hip abductors
  - Some conservative treatment: Correct any gait disturbance, stretching of gluteal muscles, stretch hip adductors, avoid aggravating behavior (standing, getting up)
  - Very common to find adductor tenderpoint on same side of bursitis

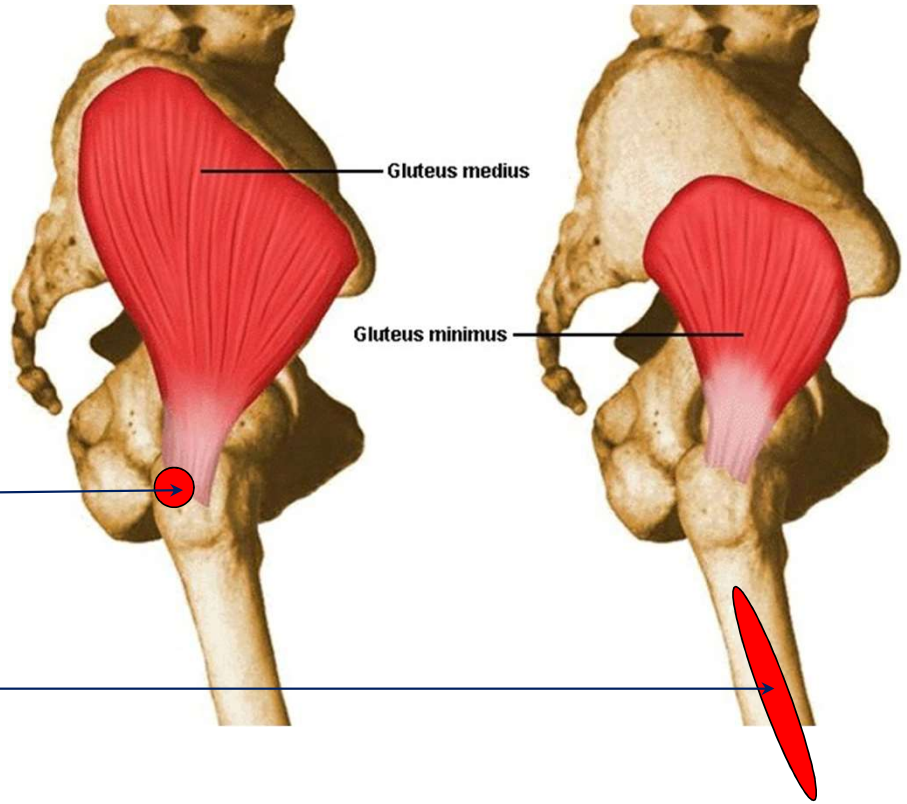
Lower Cross Syndrome



"Trochanteric Bursitis" "Evaluation of the Adult with Hip Pain" UptoDate accessed 10-5-15
Essentials of Physical Medicine and Rehabilitation. 3e. Chapter 62
Image: www.cyberpt.com

Location of Tender Points

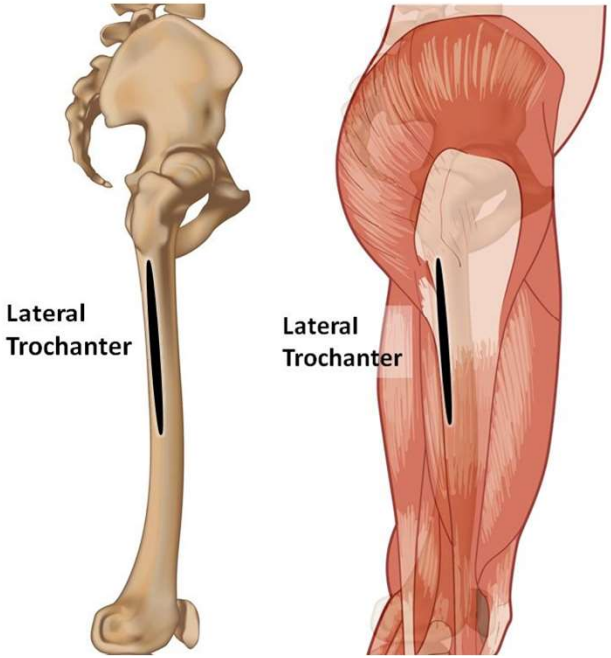
- Posterolateral Trochanter Tender Point
- Lateral trochanter Tender Point



Lateral Trochanter (LT) Location
(Iliotibial Band)

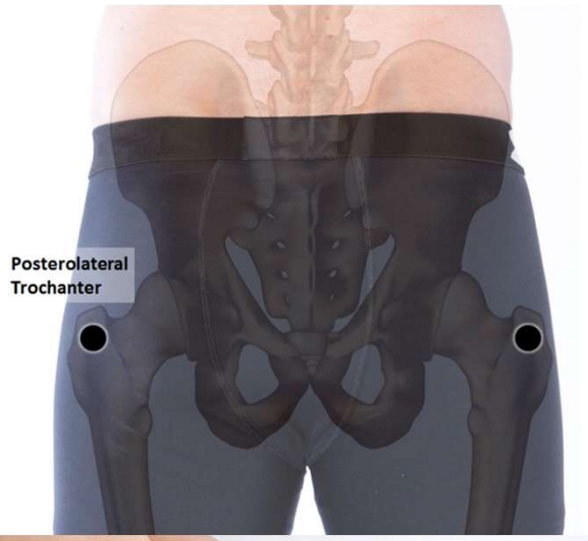
Found along iliotibial band up to 12 cm inferior to greater trochanter along femur – *push lateral to medial*

Treatment
1. Prone
2. Moderate hip abduction with slight flexion



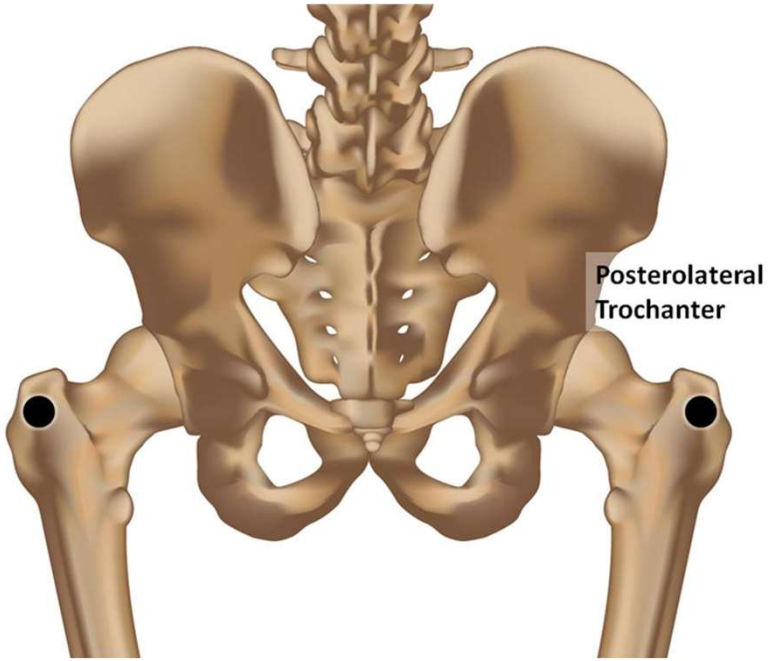
Posterolateral Trochanter (PLT) Location

Found on superolateral surface of posterior aspect of greater trochanter



Treatment

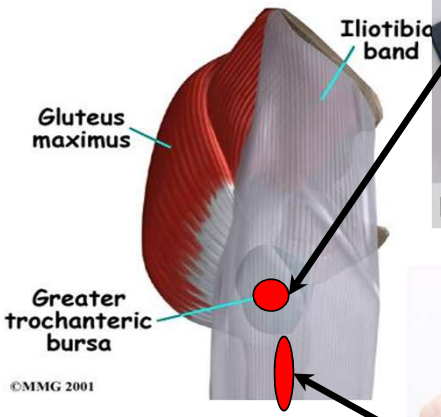
1. Prone
2. Hip extension (moderate) with slight abduction and marked external rotation



Lab Practice 5

Posterior Lateral Trochanter:

- **Location**
  - Posterior lateral aspect of greater trochanter
- **Treatment position**
  - Extension of hip
  - Slight Abduction
  - External Rotation



Lateral Trochanter:

- **Location**
  - Found about 12 cm below the greater trochanter along the lateral surface of the **femur**.
- **Treatment position**
  - Moderate hip abduction, slight flexion

Rectus Femoris

Anterior to the femoroacetabular joint– *push anterior to posterior*

Treatment

1. Supine
2. Ipsilateral leg on thigh with hip flexed, knee extended

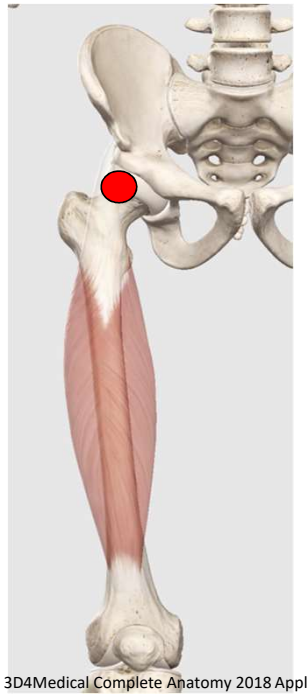


Image from 3D4Medical Complete Anatomy 2018 Application

Adductors Brevis, Longus, and Magnus

Distal to attachments of adductors at pubic bone– *push medial to lateral*

Treatment

1. Supine
2. Adduct ipsilateral leg, fine tune with internal rotation of the femur and slight knee flexion if needed (adductor magnus)

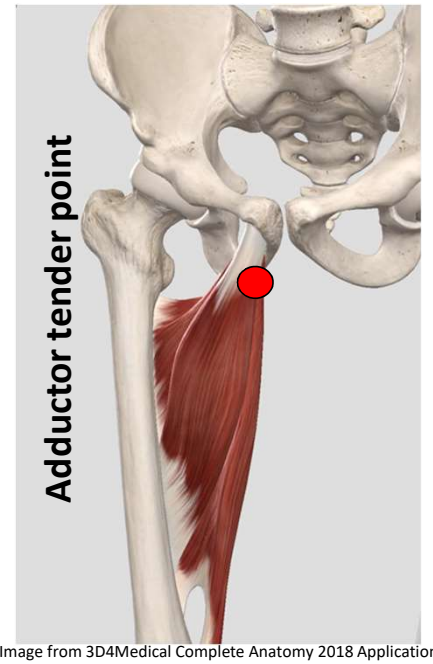
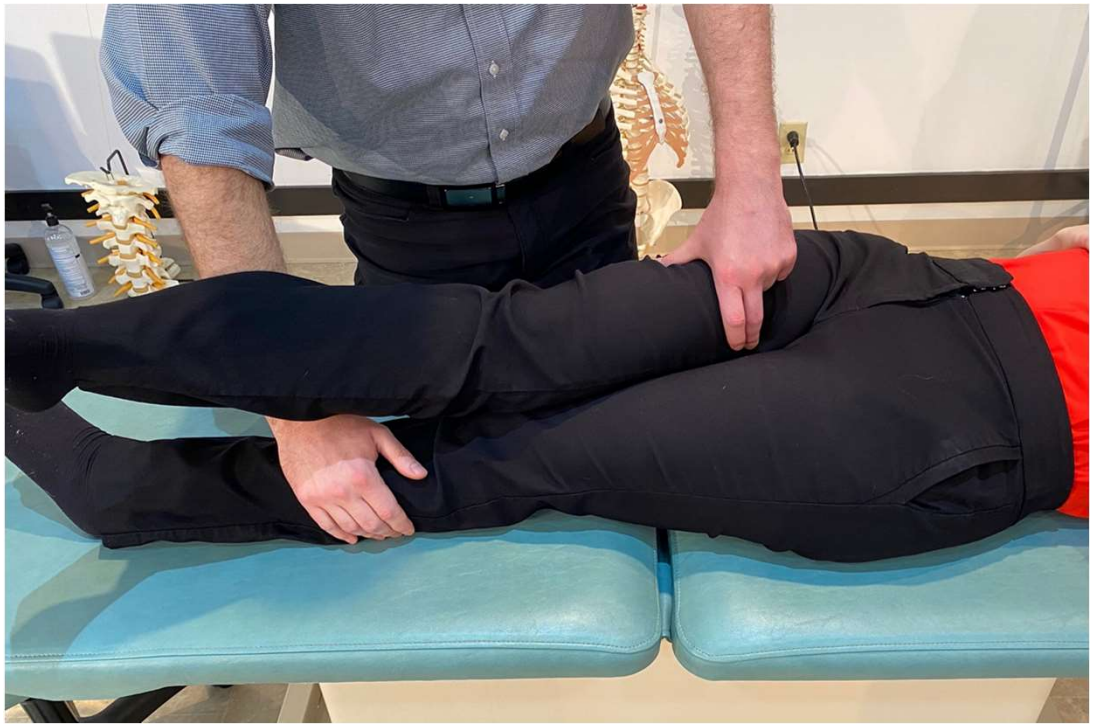


Image from 3D4Medical Complete Anatomy 2018 Application



Lab Practice 6

Rectus Femoris:

- **Location**
  - Anterior to femoroacetabular joint
- **Treatment position**
  - Supine
  - Ipsilateral leg on thigh with hip flexed, knee extended

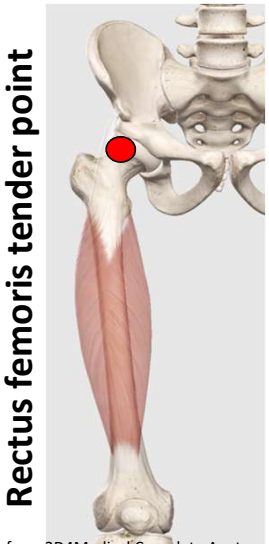


Image from 3D4Medical Complete Anatomy 2018 Application

Adductors Brevis, Longus and Magnus:

- **Location**
  - Distal to attachments of adductors at pubic bone
- **Treatment position**
  - Supine
  - Adduct ipsilateral leg
  - Slight flexion or extension at hip

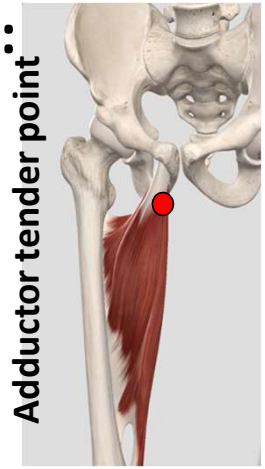
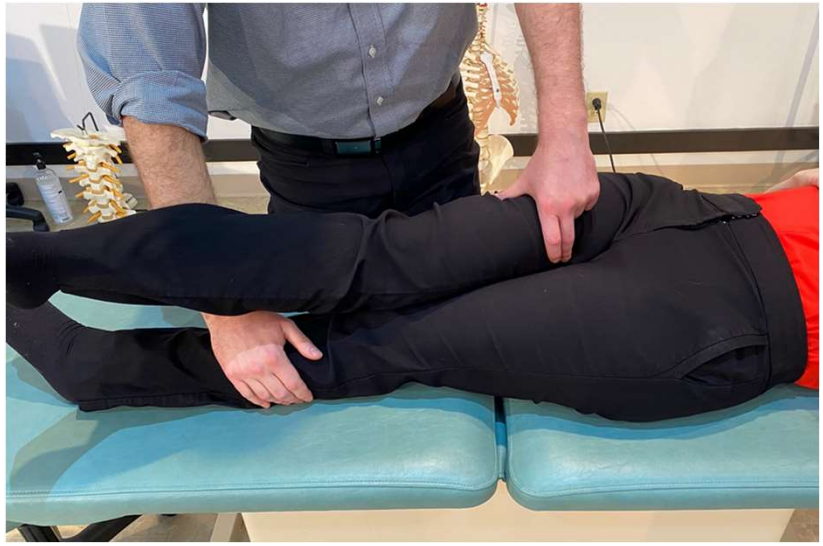


Image from 3D4Medical Complete Anatomy 2018 Application



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- Glover JC, Rennie PR. Ch 37, Strain Counterstrain. Foundations of Osteopathic Medicine, 4th ed., Wolters Kluwer, 2018.