STRAIN &COUNTERSTRAIN

PELVIS AND SACRUM

A PASSIVE POSITIONAL PROCEDURE THAT

PLACES THE BODY IN A POSITION OF

GREATEST COMFORT, THEREBY RELIEVING

PAIN BY REDUCTION AND ARREST OF

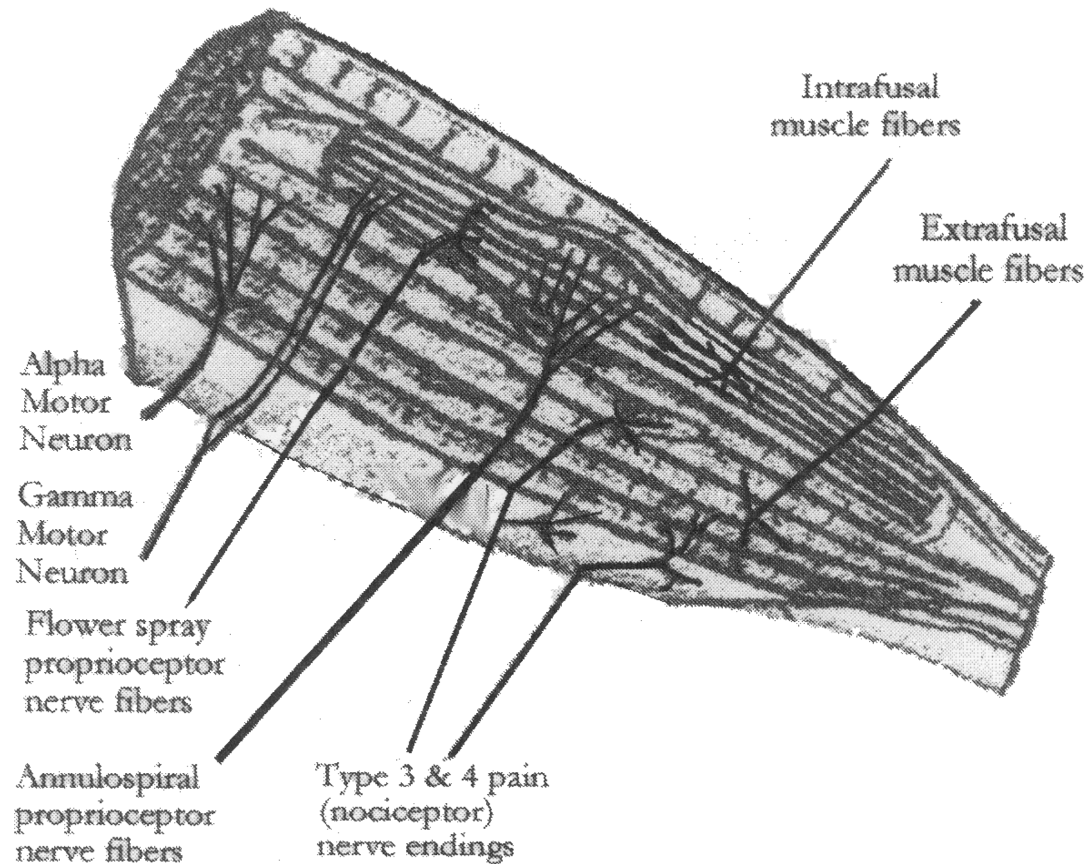
INAPPROPRIATE PROPRIOCEPTOR ACTIVITY

THAT MAINTAINS SOMATIC DYSFUNCTION

RATIONALE FOR STRAIN AND COUNTERSTRAIN

MUSCLE SPINDLE APPARATUS

The afferent nerve fibers from the annulospiral and flower spray proprioceptors in the muscle spindle and from the type 3 & 4 nociceptor nerve fibers enter the spinal cord though the dorsal horn and connect with interneurons and gamma and alpha motor efferent neurons. The gamma motor neurons (to the intrafusal muscle fibers in the muscle spindle) and the alpha motor neurons (to the extrafusal fibers of the muscle mass) both exit the cord though the ventral nerve root.

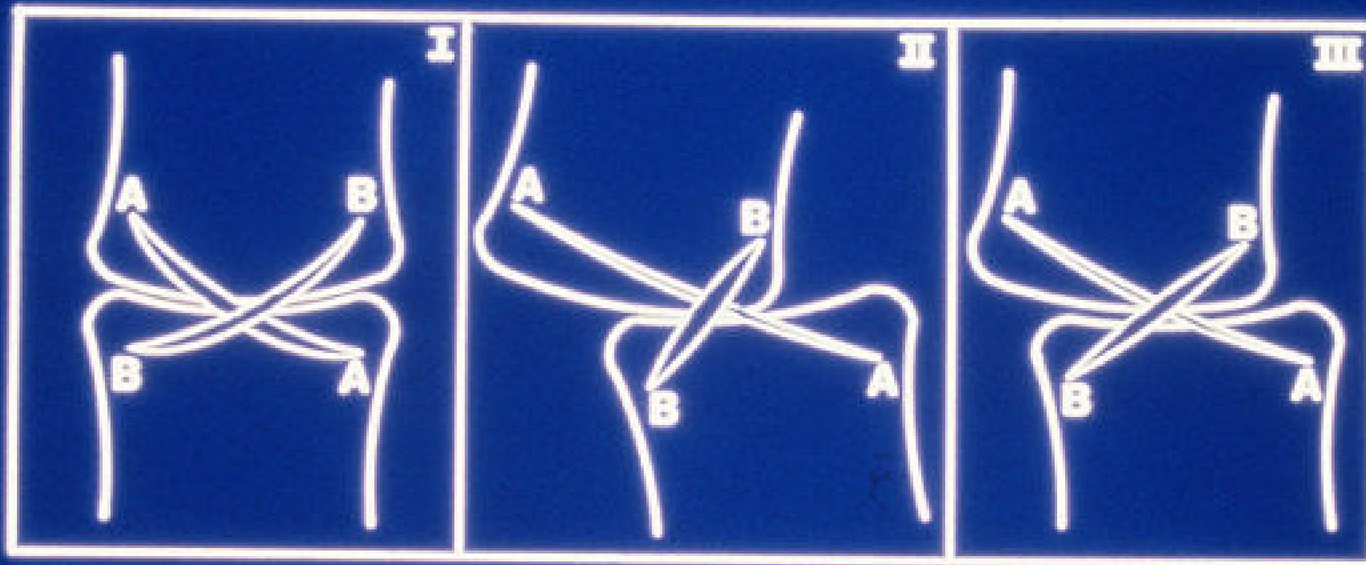


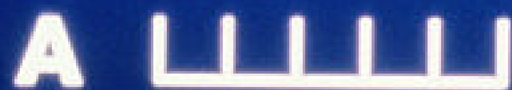
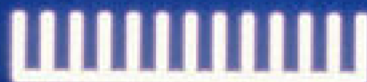
WHAT MAINTAINS THE SOMATIC DYSFUNCTION?

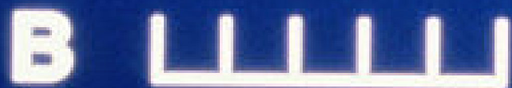
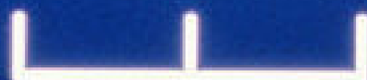
- COUNTERSTRAIN THINKING IS DIRECTED ESPECIALLY TO THE
- NEUROMUSCULAR REFLEXES
- RATHER THAN THE TISSUE STRESSES

A. The originally strained muscle

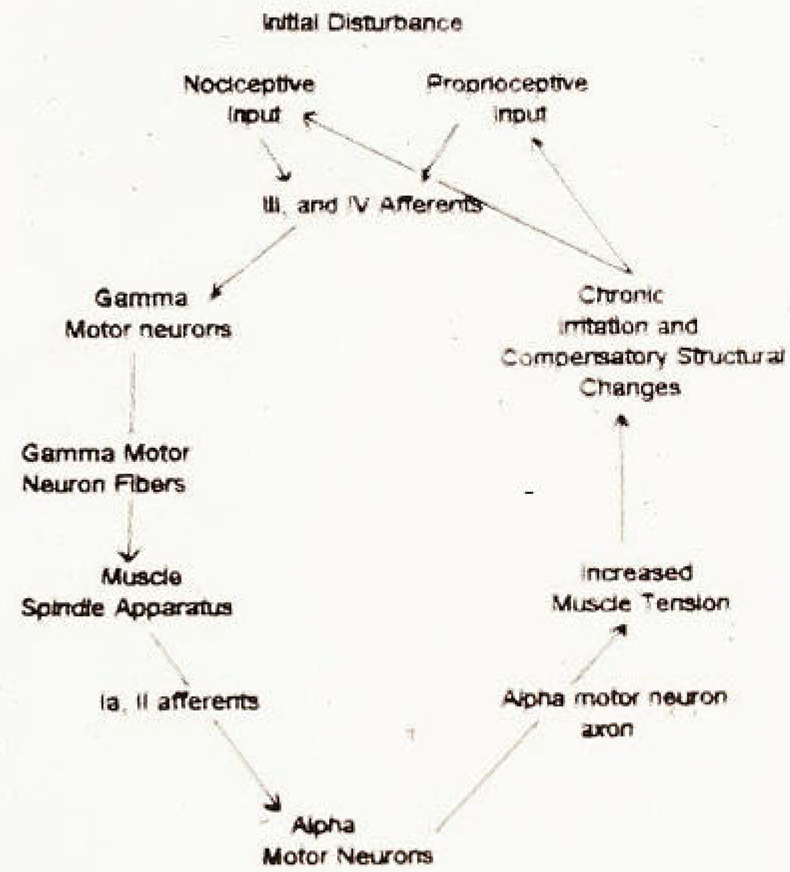
B. The reflexly shortened muscle registering the false and continuing message of strain.



A  

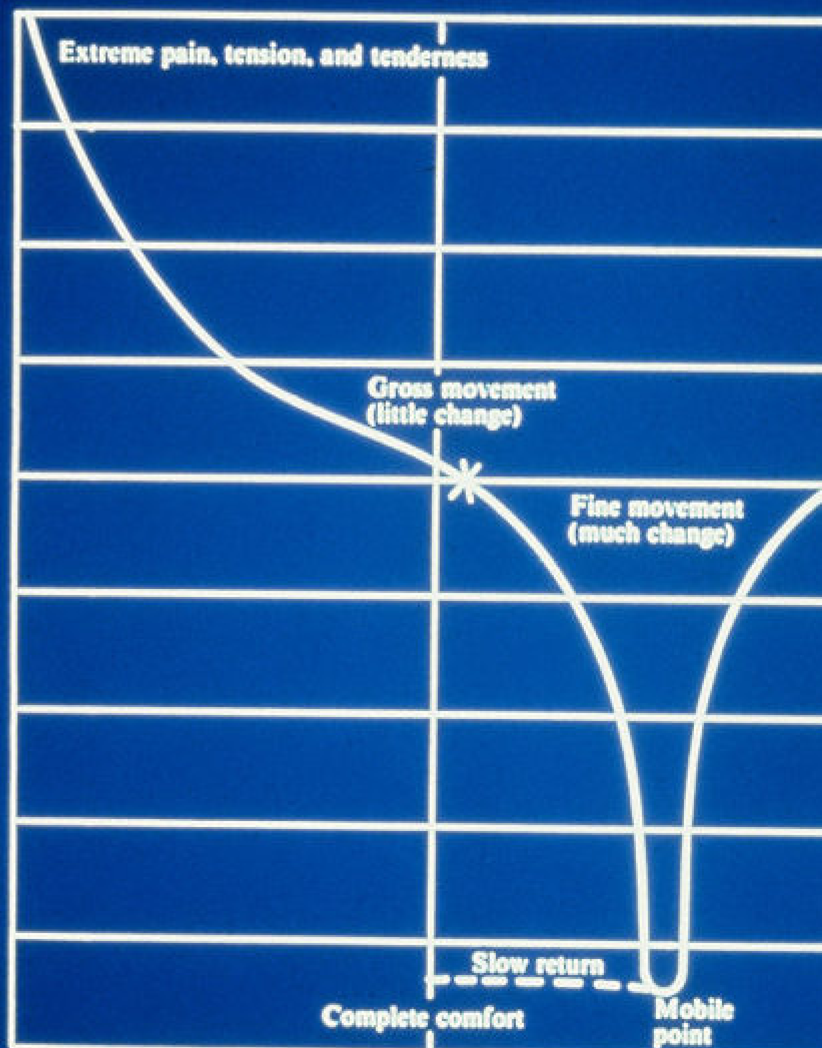
B  

Tender points are sensory manifestations of a neuromuscular or musculoskeletal dysfunction.



Modified after Schmidt et al. (1981)

FINDING THE POSITION OF COMFORT


Extreme pain, tension, and tenderness
Gross movement
(little change)
Fine movement
(much change)
Slow return
Complete comfort
Mobile
point
Modus operandi for ideal positioning for comfort.

GENERAL RULES

- Hold position of comfort for no less than 90 seconds
- Return to neutral very slowly
- Anterior tender points are usually treated in flexion
- Posterior tender points are usually treated in extension
- Tender points on or near midline are treated with more flexion and extension
- Tender points lateral from midline are treated with more rotation and sidebending

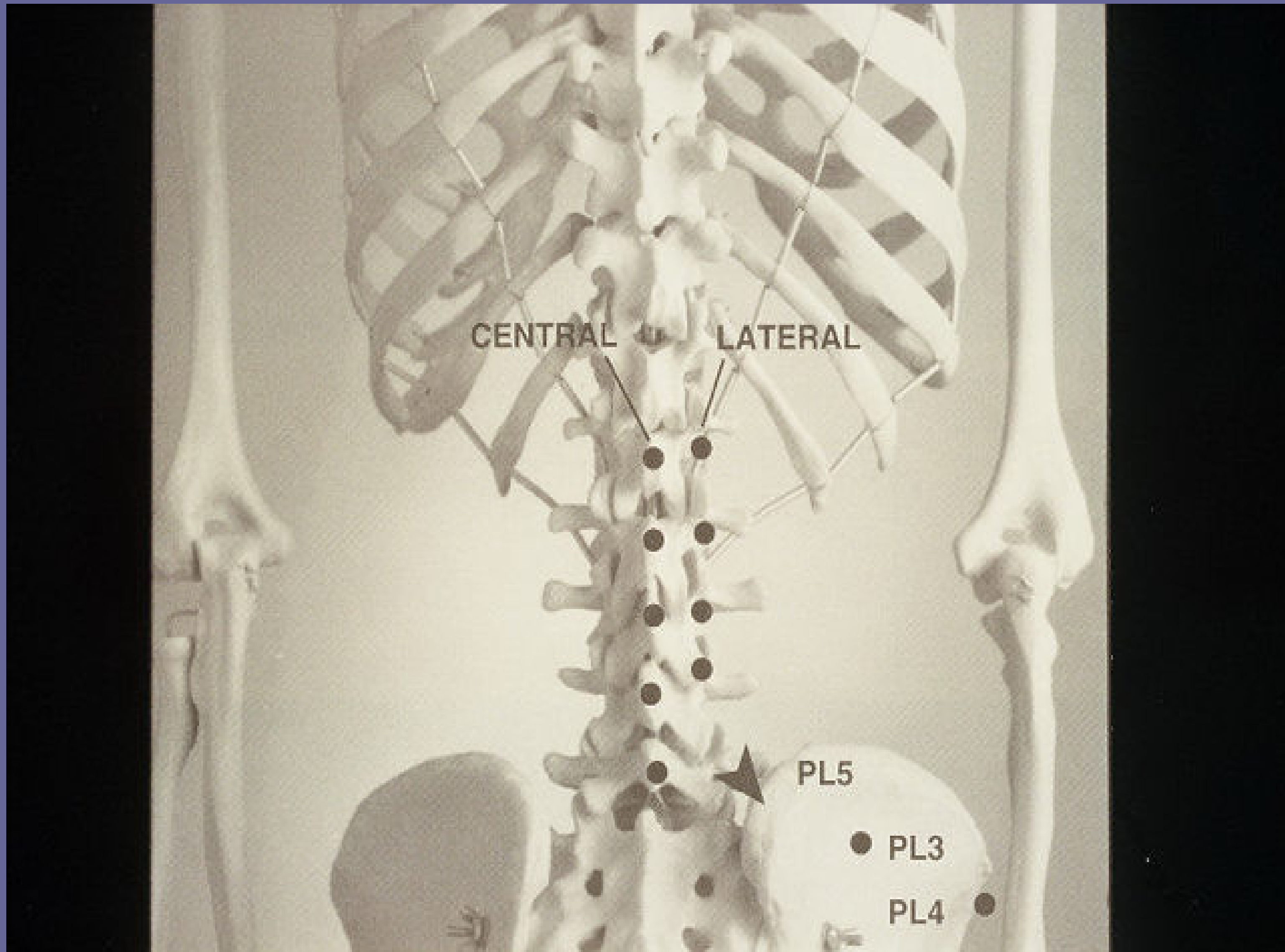
GENERAL RULES

- With multiple tender points, treat the most severe first
- If tender points are in rows, try treating the one in the middle first
- Tender points in the extremities are usually found on the opposite side of pain
- Warn patient that they may get sore following a counterstrain treatment
- No contraindications

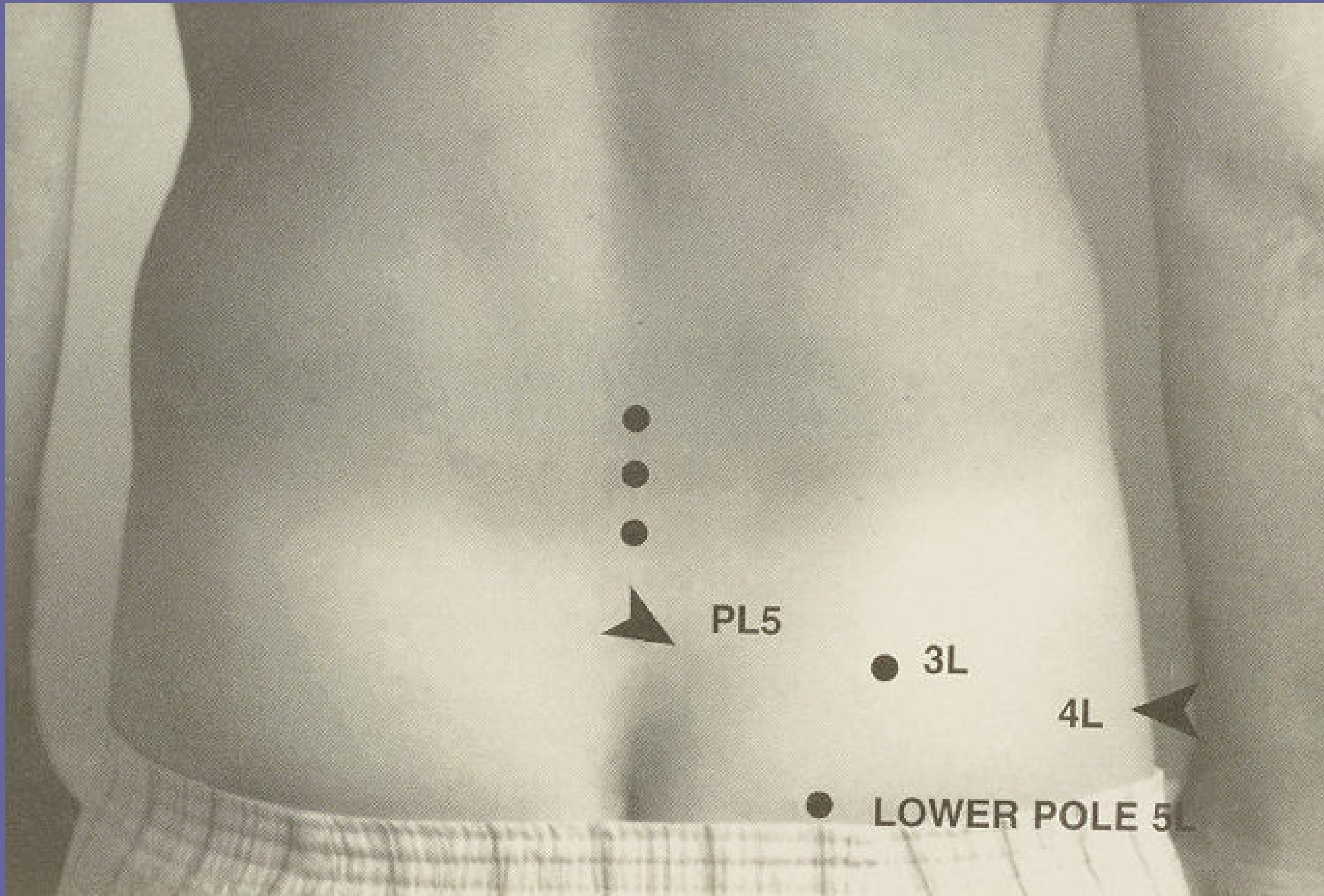
TECHNIQUE

- Locate the tender point
- Find position of comfort or mobile point
- Monitor point response but take pressure off tissue
- Hold 90 seconds
- Return to neutral slowly
- Recheck tender point - 70% improved

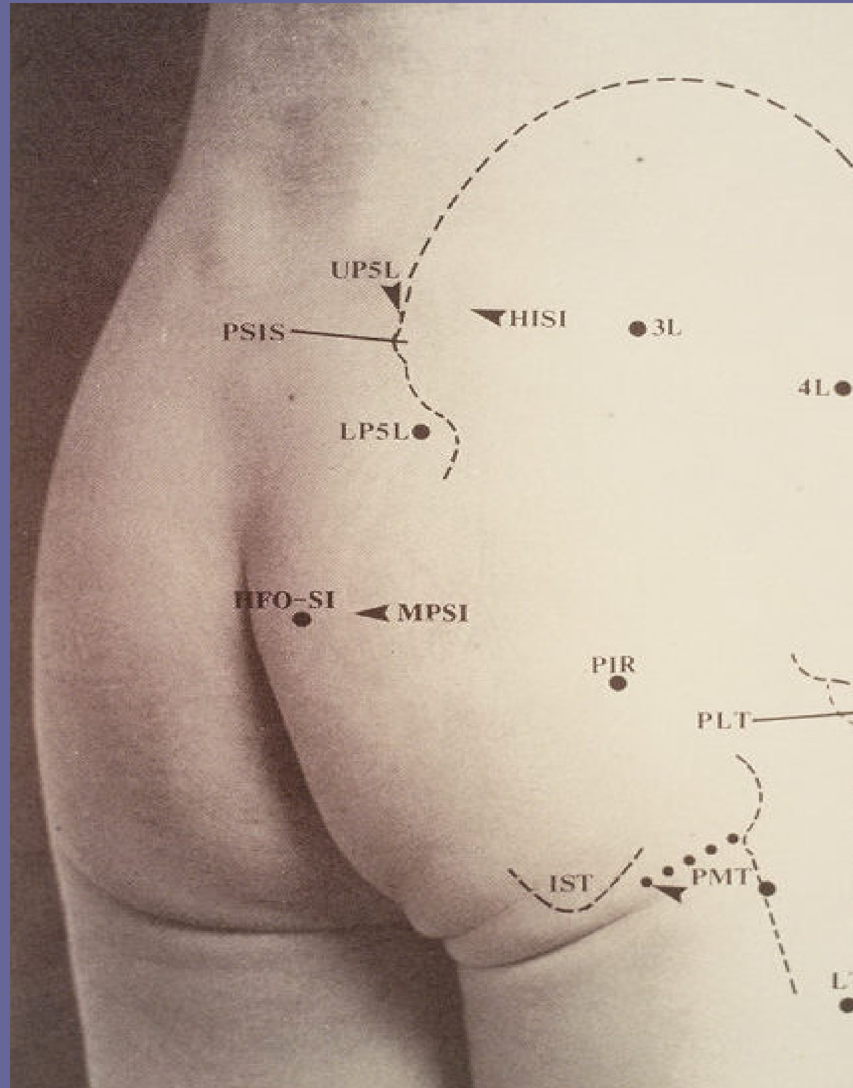
Posterior Lumbar Tender Points



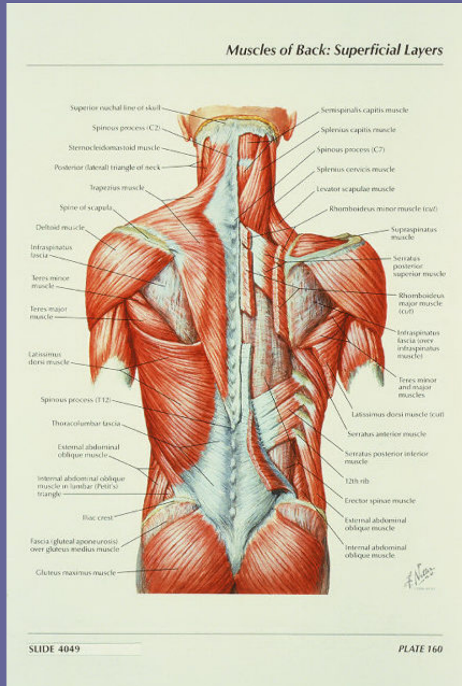
Posterior Lumbar Tender Points

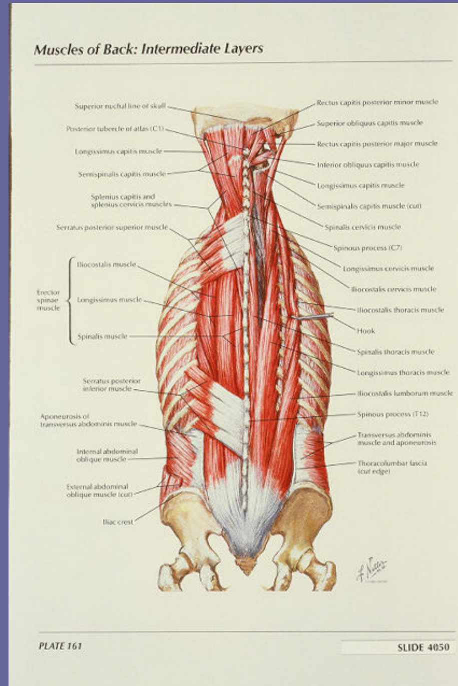


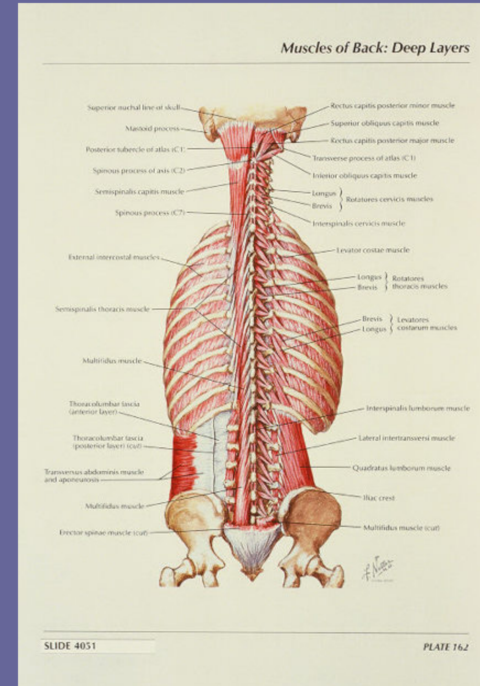
Posterior Lumbar Tender Points



POSTERIOR LUMBAR SPINE



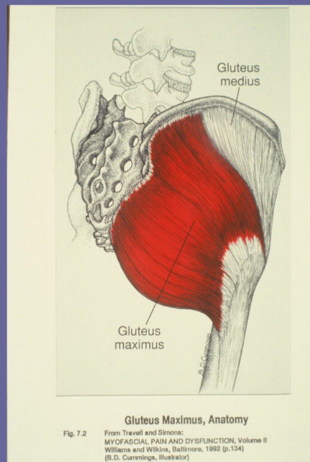


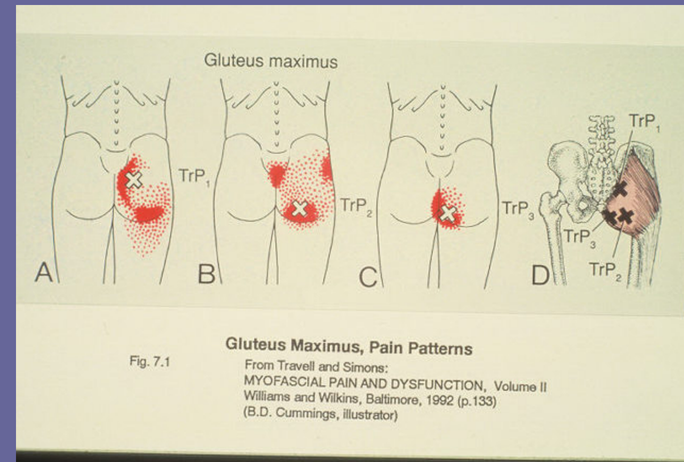


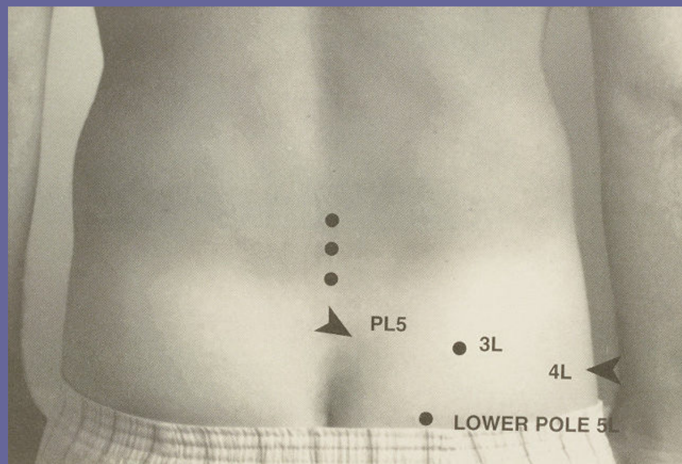
ANATOMY OF THE LUMBAR SPINE

POSTERIOR LUMBAR SPINE

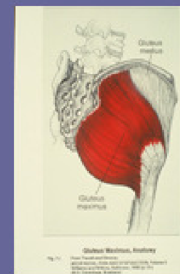
GLUTEUS MAXIMUS

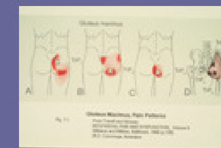


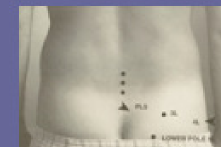




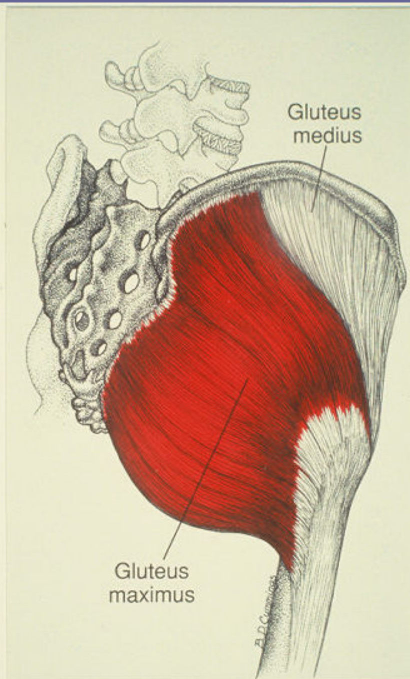
POSTERIOR LUMBAR SPINE
GLUTEUS MAXIMUS

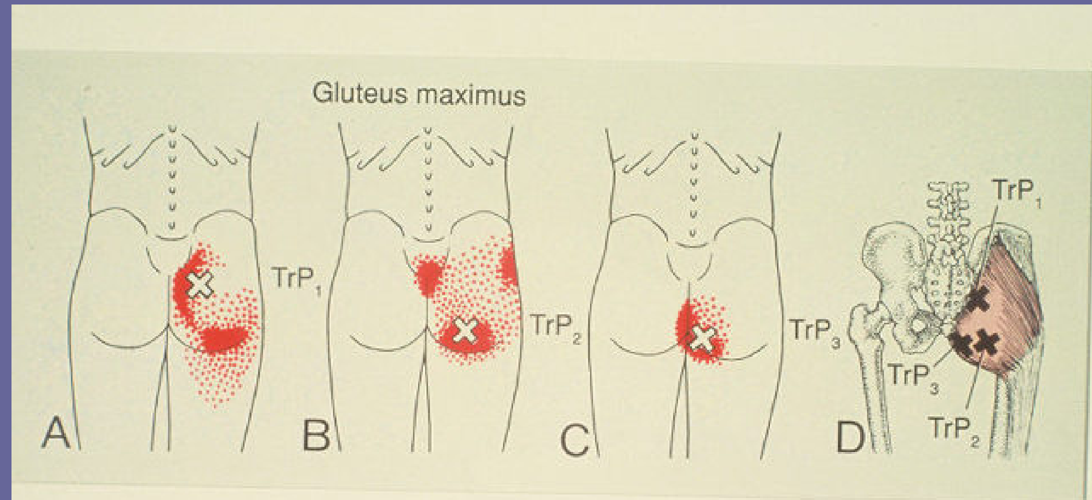






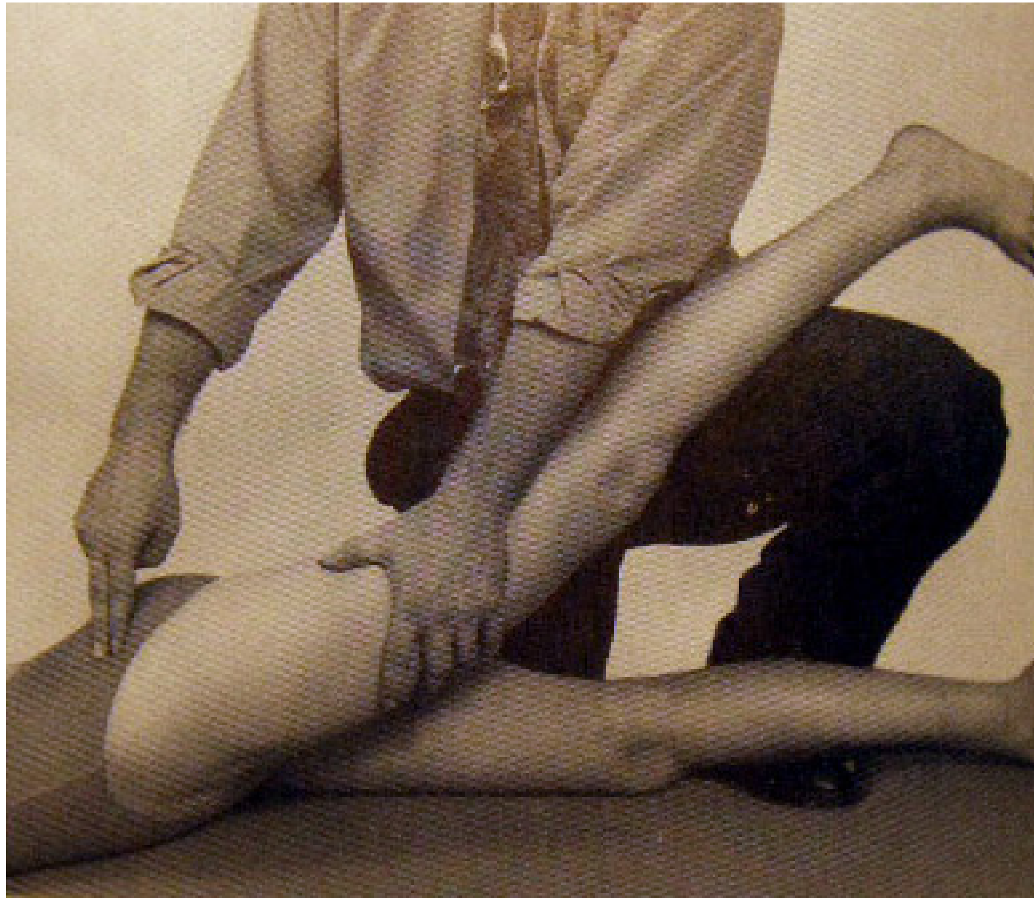
POSTERIOR PELVIS & HIP





- HIGH ILIUM SACROILIAC AND HIGH FLAREOUT SACROILIAC-GLUTEUS MAXIMUS POINTS

Gluteus Max treatments need Extension and Ext Rot

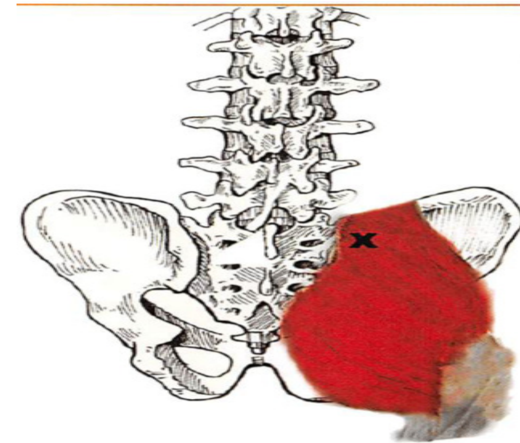


GLUTEUS MAXIMUS (High Ilium Sacroiliac)

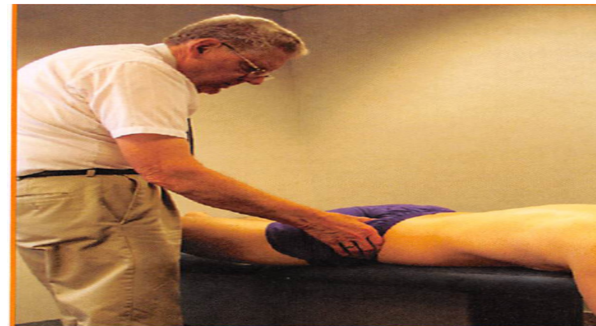
Location of Tender Point: One-and-a-half inches lateral to the posterior superior iliac spine.

Direction to Press on Tender Point: Press lateral to medial.

Treatment : With patient prone, stand on the same side as the Tender Point. For extension of the hip, place your knee on the table to support the patient's thigh and abduct slightly.



High ilium Tender Point



Treatment position (HISI)

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P 4 L GLUTEUS MAXIMUS Posterior 4th Lumbar

Location of Tender Point: One-and-a-half to two inches below the superior margin of the ilium, slightly posterior to the border of the tensor fascia lata.

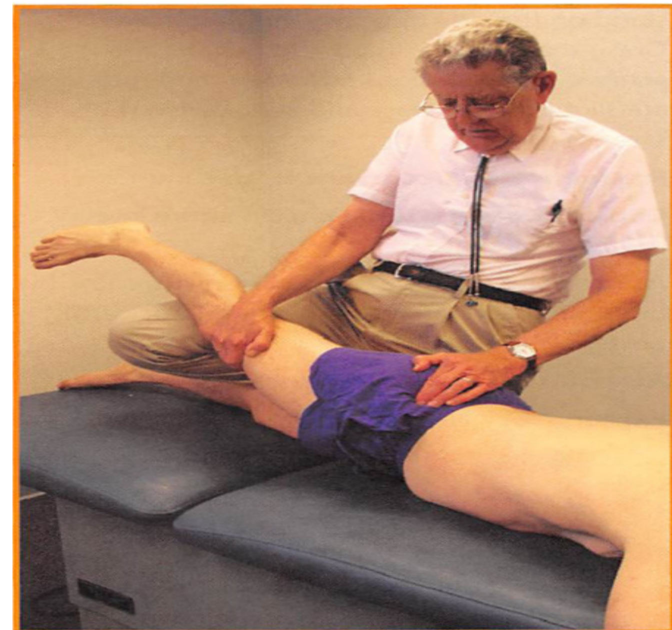
Anatomical Correlation: Superior lateral portion of the gluteus maximus.

Treatment Position): With patient prone, stand on the side opposite the Tender Point with your foot on the table.

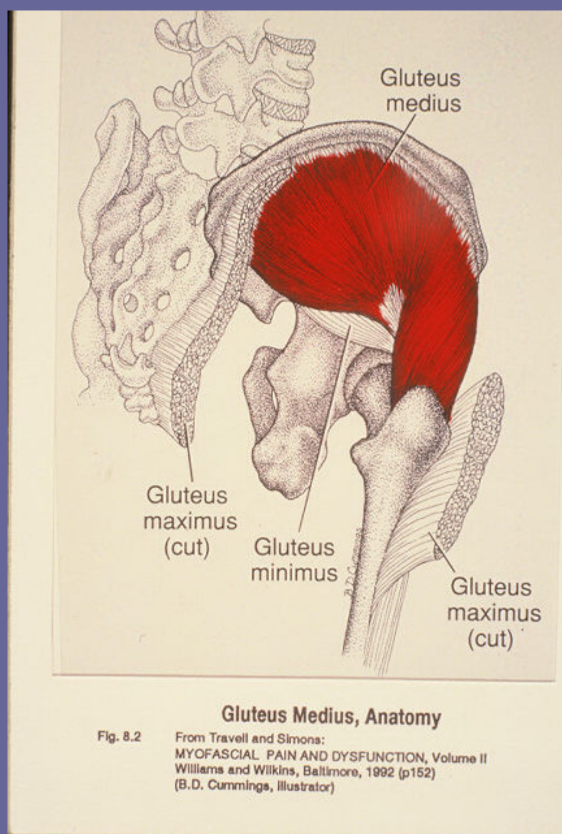
Hip extension is achieved by lifting the patient's leg on the side of the Tender Point and supporting it on your thigh.

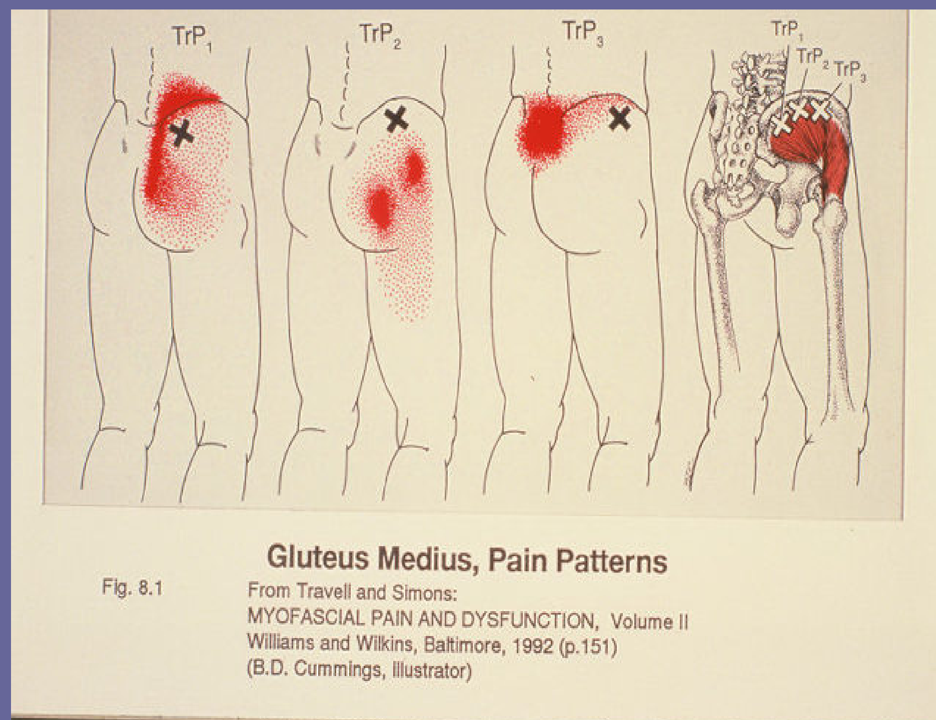
Adduct slightly more than with P 3 L. Grasp the patient's thigh and pull back on it to achieve external rotation.

The higher your hand is on the thigh, the greater the rotation. Less rotation needed than with P 3 L.



POSTERIOR PELVIS & HIP





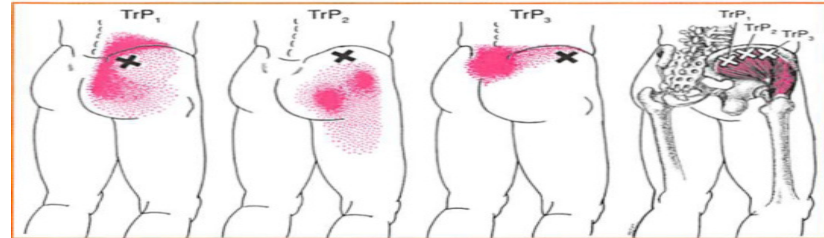
- GLUTEUS MEDIUS PAIN PATTERN IS SIGNIFICANT FOR PAIN OVER SACRO-ILIAC JOINT AND SACRUM

GLUTEUS MEDIUS

Location of Tender Point:

On a line overlying the muscle along the lateral two-thirds of the crest of the ilium,

and within 1 -inch of the crest.



Treatment :With patient prone, stand on the same side as the Tender Point. Lift extend the hip

grasp the anterior thigh.
Holding the thigh in extension,

moderately abduct, rotate internally as much as possible.

Clinical Correlation(s): Pain in the sacroiliac area, the sacrum area, the area superior to the crest of the ilium, and the buttock area. Pain in one or two of these areas usually is present.

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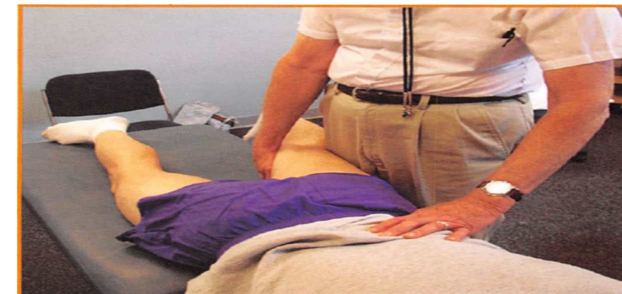
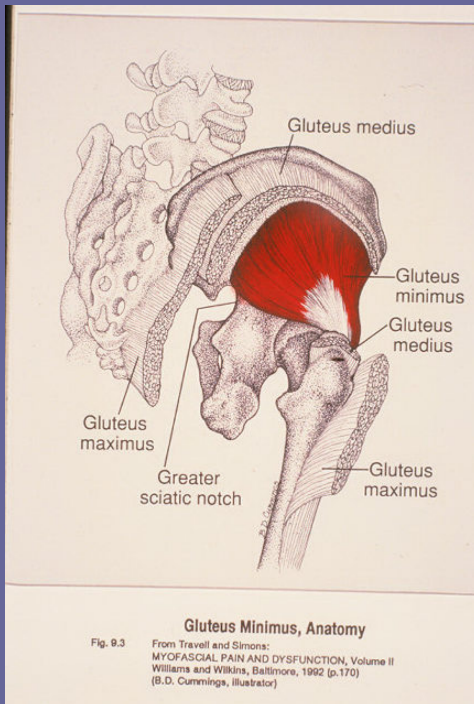
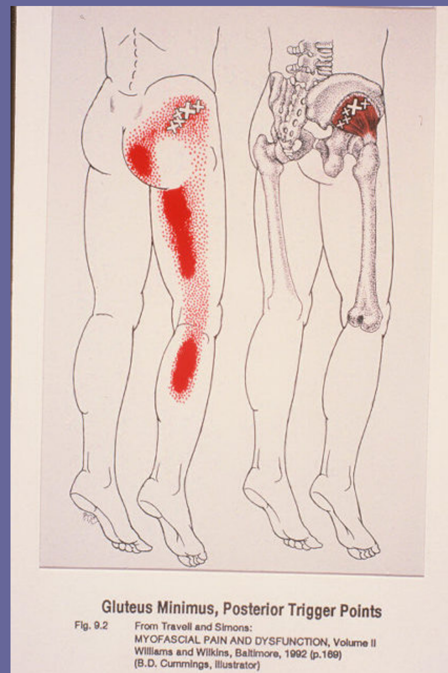
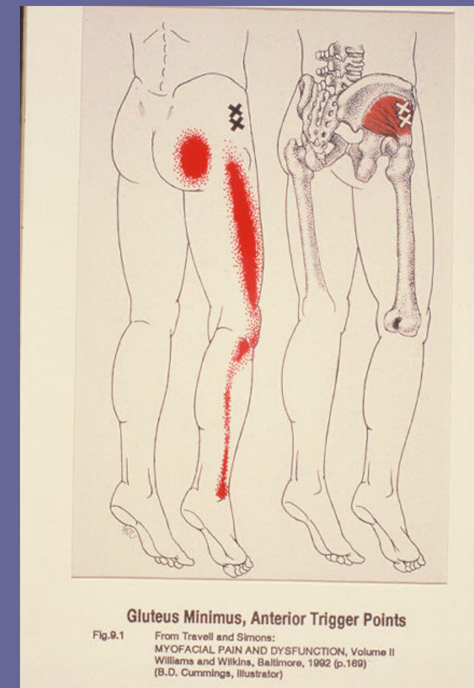


Gluteus Medius treatment needs Int Rot, extension and Abduction

POSTERIOR PELVIS & HIP







GLUTEUS MINIMUS HAS A VERY SIGNIFICANT PAIN REFERRAL PATTERN
IT CLOSELY MIMICS A RADICULOPATHY PICTURE

GLUTEUS MINIMUS

Location of Tender Point: The Tender Point of the gluteus minimus may be palpated at two Points:

1) The anterior border of the gluteus minimus muscle, superior and anterior to the greater trochanter.

2) Immediately posterior to the tensor fascia lata muscle about 1 inch below the iliac crest, which is a more frequently encountered Point.

Treatment Position: With patient prone or supine, depending on which Tender Point you are treating, sit on a chair or stool, or stand, on the Tender Point side.

Flex the hip about 90°. Use slight abduction and marked internal rotation of the hip.

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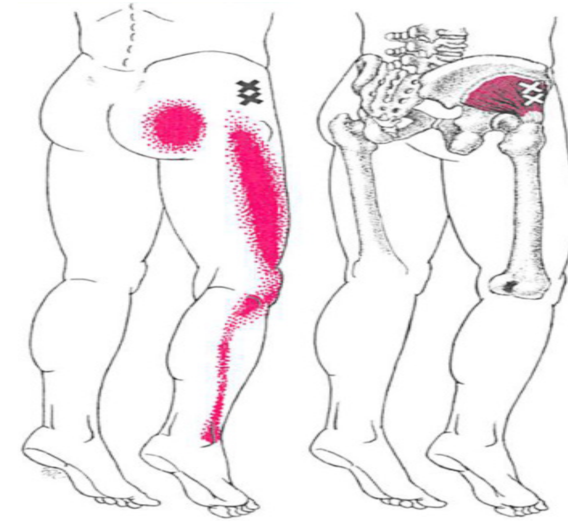
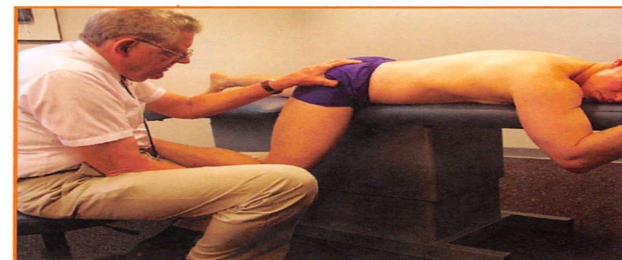
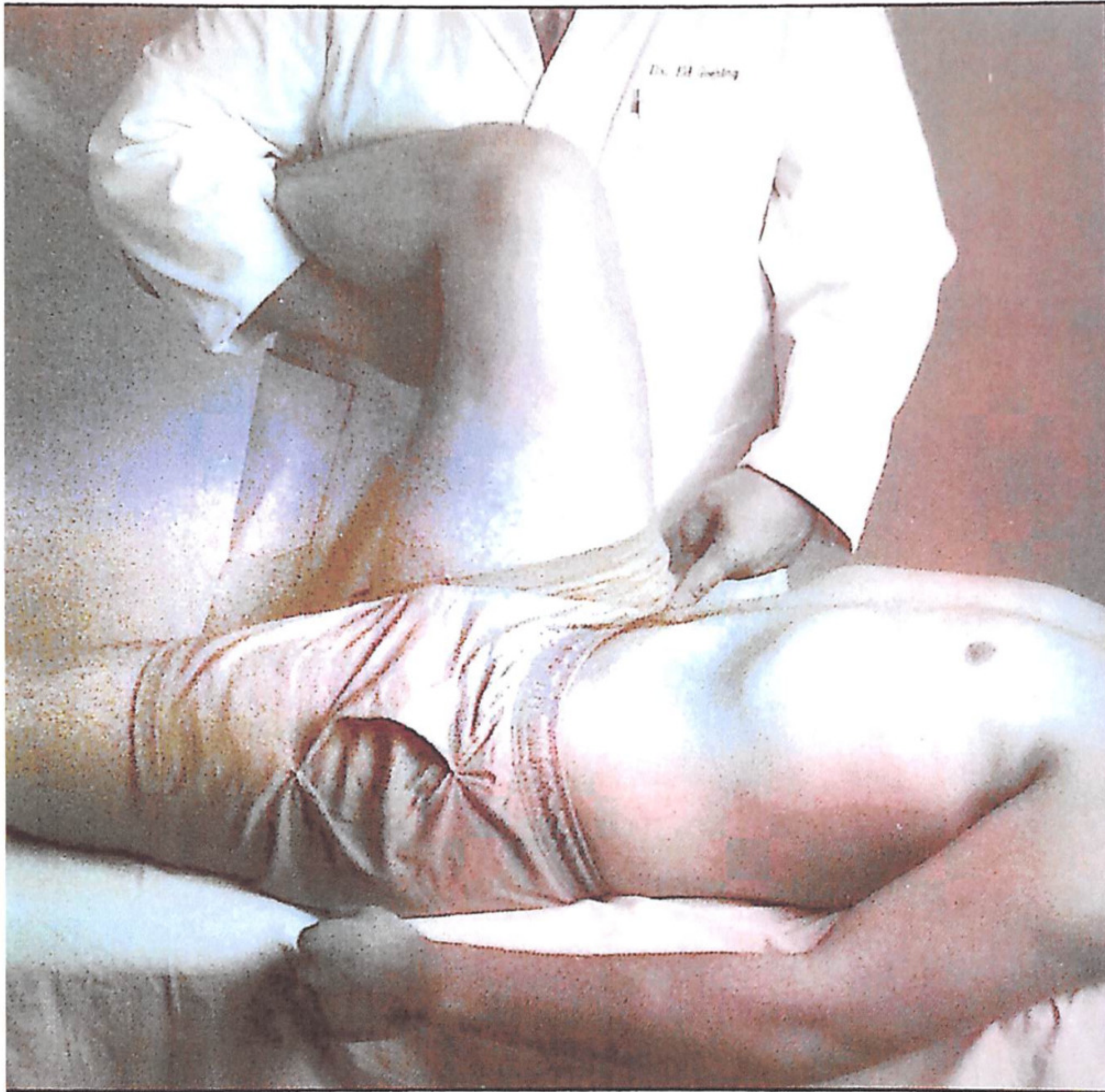


Myofascial pain pattern





GLUTEUS MINIMUS

This is not found behind as I had thought at first, but about two and a half inches down and out from the anterior superior spine of the ilium. This and the gluteus medius are common causes for pain on the lateral part of the pelvis, after a long drive in a car in a sitting position. The weight is carried on the ischial tuberosities and the greater trochanters of the femurs hang down in an external rotation strain. A fairly marked femur flexion with slight abduction and internal rotation of the femur, produced by pulling the foot more lateral than the knee, will stop these.

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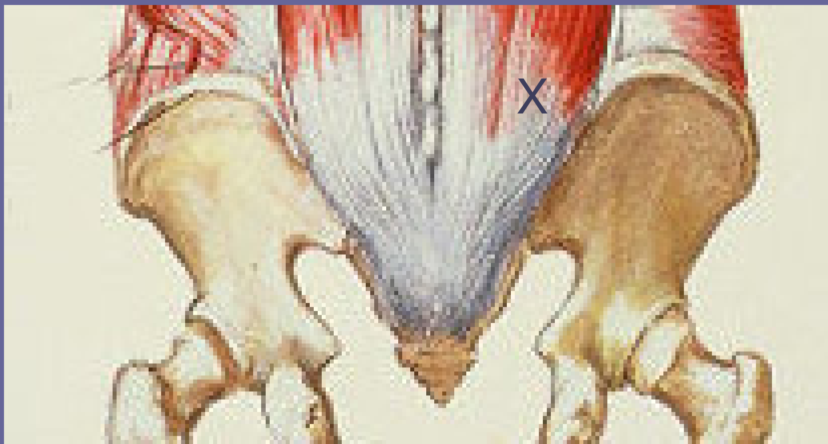
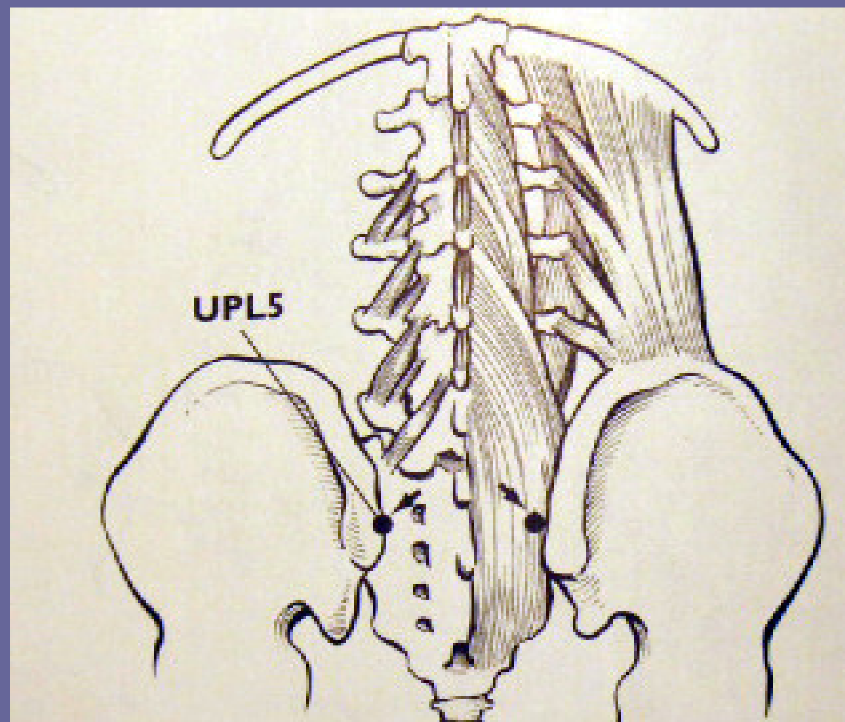
POSTERIOR LUMBAR SPINE



- Upper pole 5th - Multifidis & other muscles attaching to the sacrum & fascia overlying

Multifidus treatment needs Adduction and Extension



UP 5 L treatment needs Extension and Adduction

P 5 L MULTIFIDIS (Jones' Upper Pole 5)

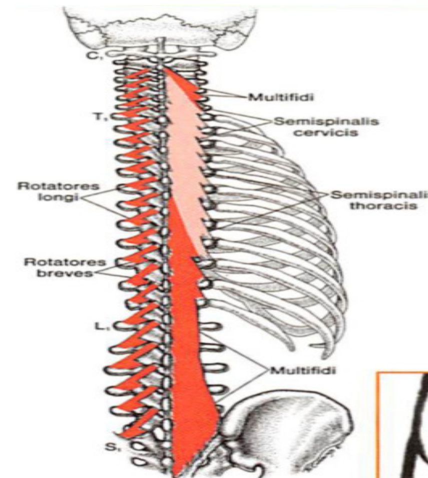
Location of Tender Point: On the superior medial surface of the posterior superior iliac spine.

Anatomical Correlation: Multifidis muscle in the upper sacral area.

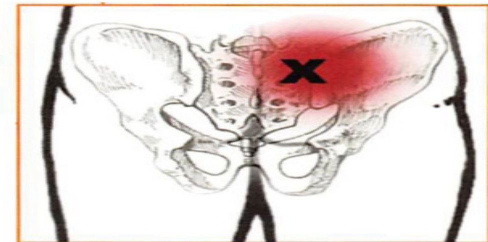
Direction to Press on Tender Point: Press from posterior medially to anterior laterally, against the superior medial surface of the posterior superior iliac spine.

Treatment Position: With patient prone, stand on the side opposite the Tender Point. Grasp the patient's thigh and pull back to achieve hip extension.

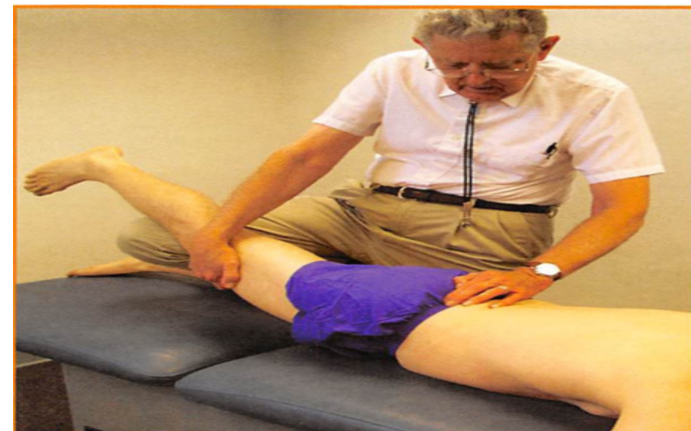
Adduction and rotation are slight to moderate and achieved in the same way. •-



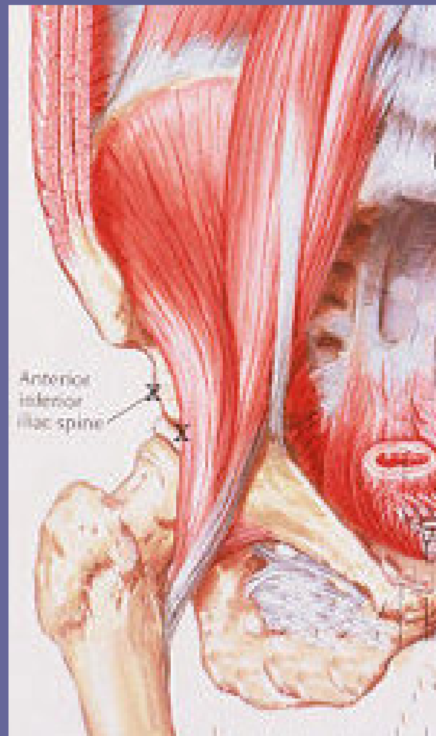
Multifidis muscle

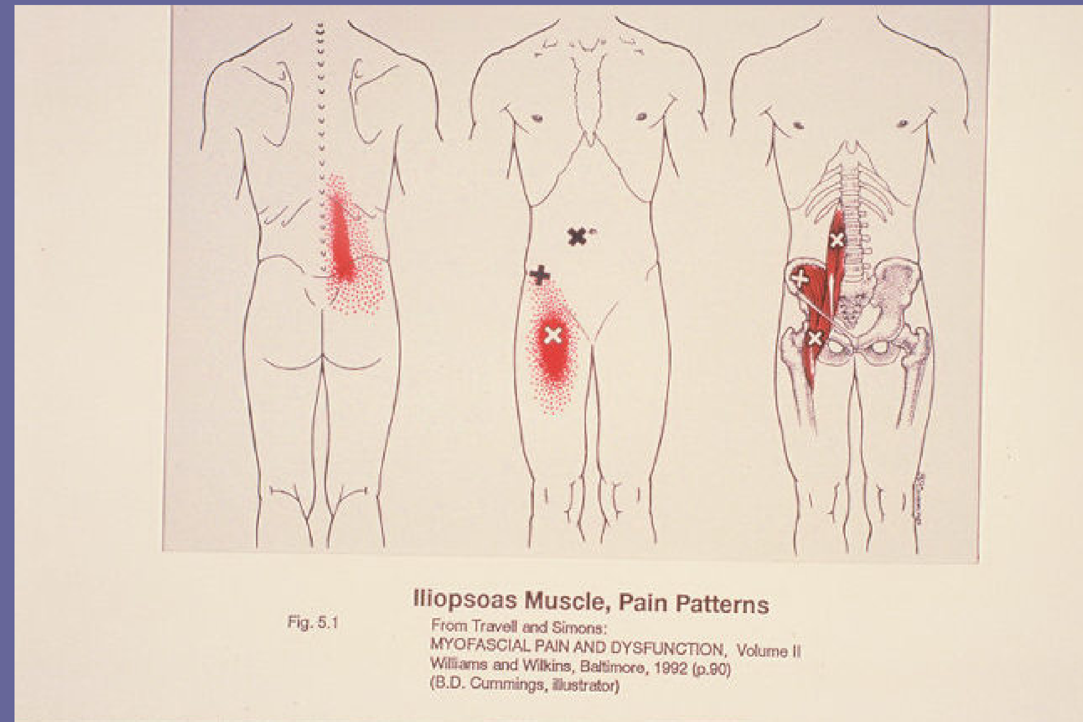


Multifidis on sacrum pain pattern



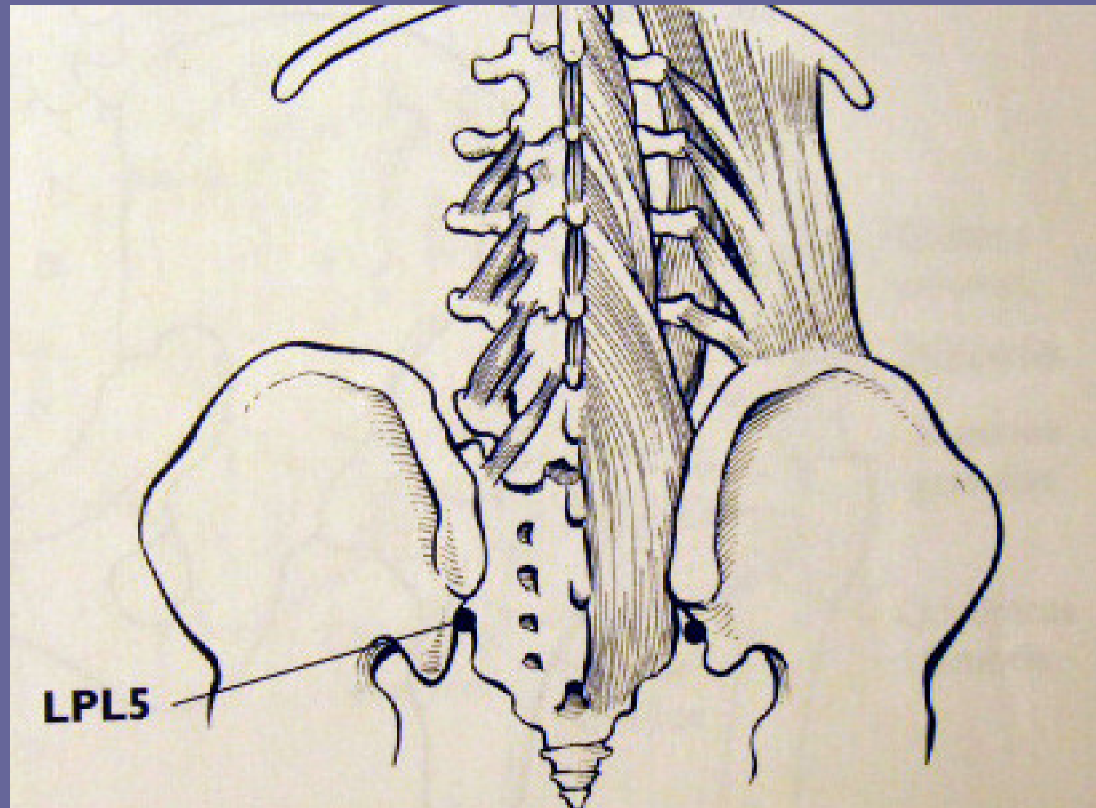
POSTERIOR LUMBAR SPINE





- THE LOWER POLE 5TH POINT IS THE ILIOPSOAS AS IT COMES ACROSS THE HIPJOINT AND THE RIM OF THE PELVIS

Iliopsoas? (LP5L)



LP5L treatment needs Flex and Adduction

L P L 5
(Jones' Lower Pole)

Location of Tender Point

1) About '/2-inch below the posterior superior iliac spine, in a space between it and the posterior inferior iliac spine.

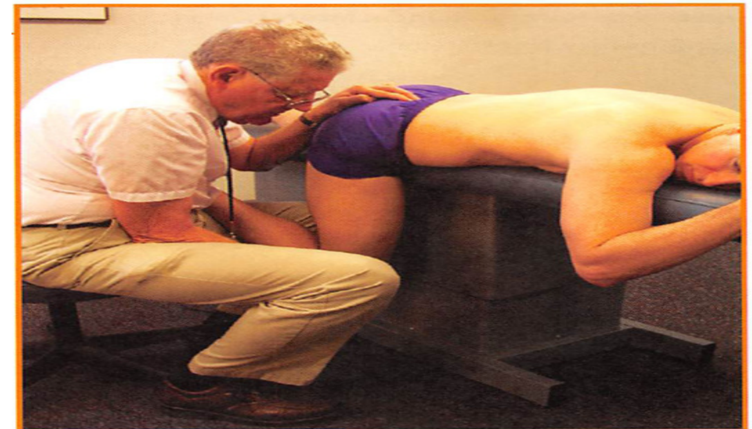
2) On the posterior superior aspect of the sacral base near the midline.

Direction to Press on Tender Point: Press posterior to anterior on either Point.

Treatment Position: With patient prone, sit in a chair on the same side of the table

Drop the leg on the involved side off the table with the knee flexed and the patient's ankle resting on your thigh.

Flex the hip to 90° to 100°. Adduct the patient's knee slightly by pushing it medially under the table. •



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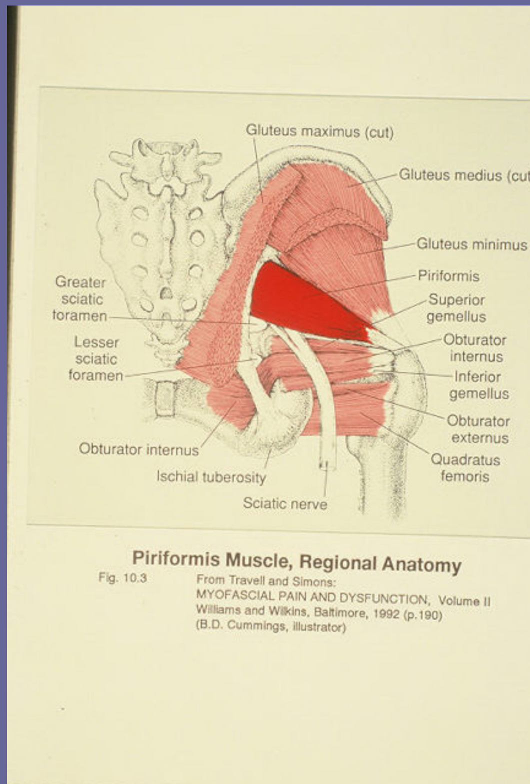
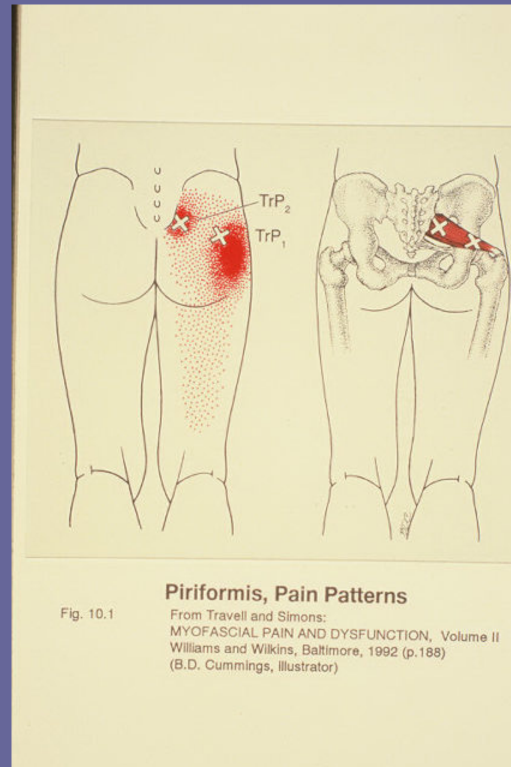
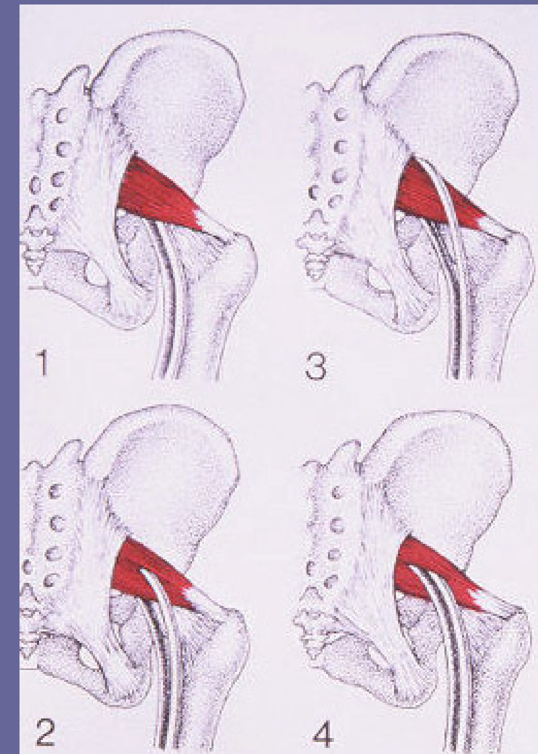
POSTERIOR PELVIS & HIP







THE PIRIFORMIS PAIN PATTERN SHOWN ABOVE DOES NOT INCLUDE THE PAIN THAT MIGHT BE PRODUCED BY PRESSURE ON THE SCIATIC NERVE. SEE ANATOMICAL VARIATIONS ABOVE.

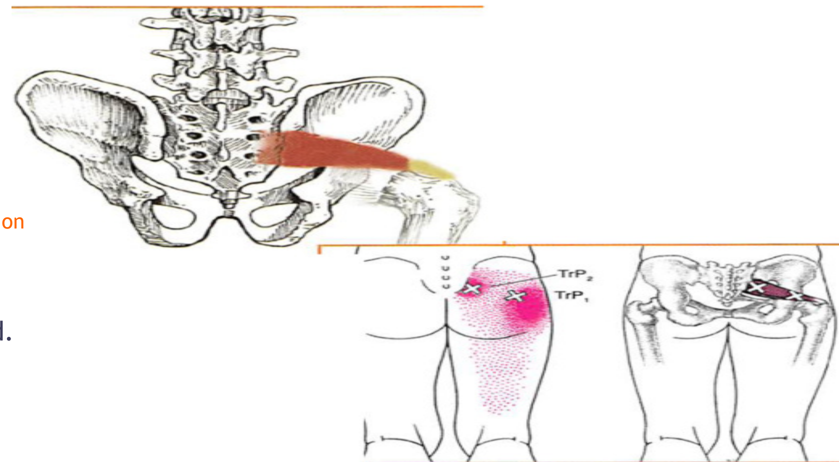
PIRIFORMIS

Location of Tender Point: Over the body of the piriformis muscle, 3-inches medial and slightly cephalad to the greater trochanter.

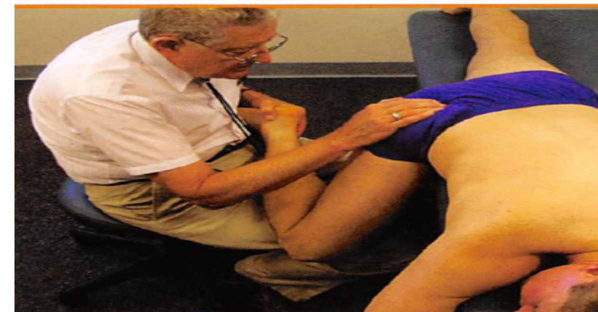
Treatment Position: With patient prone, sit on a chair or stool on the same side as the Tender Point.

Suspend the patient's leg on the Tender Point side off the table with the ankle resting on your caudad thigh.

Flex the hip 120° to 1 30°. Abduction and internal rotation as needed.

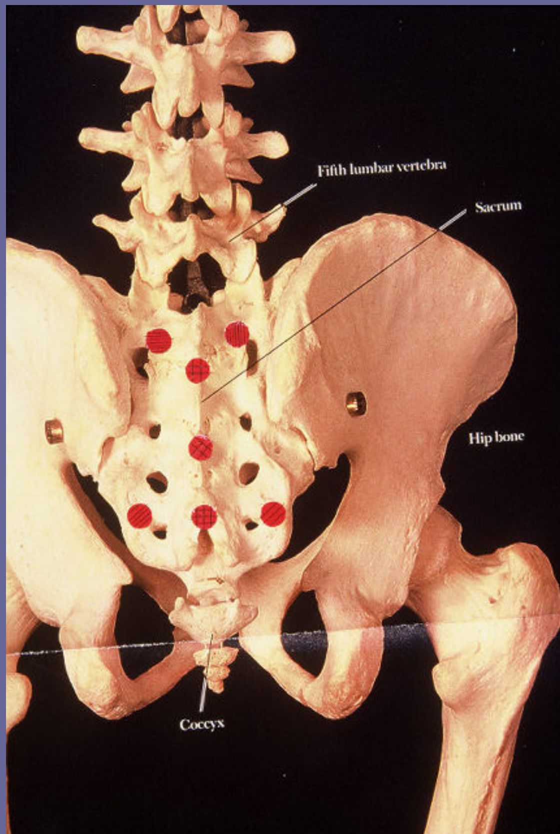


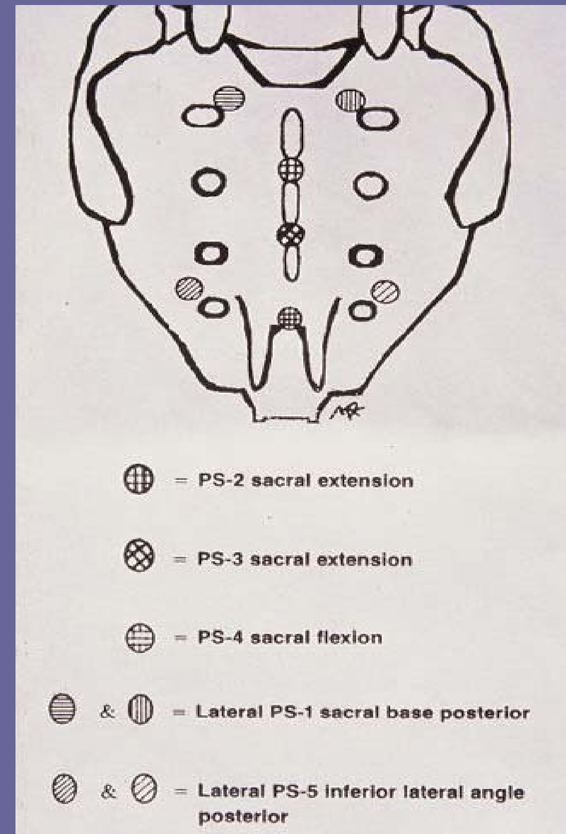
Piriformis pain pattern



Treatment position.

Sacrum





- The tender points are probably in the area of attachment of the
- multifidis, spinalis, logisstmus, iliocostalis muscles & overlying fascia

SACRUM P S 1

Location of Tender Point:

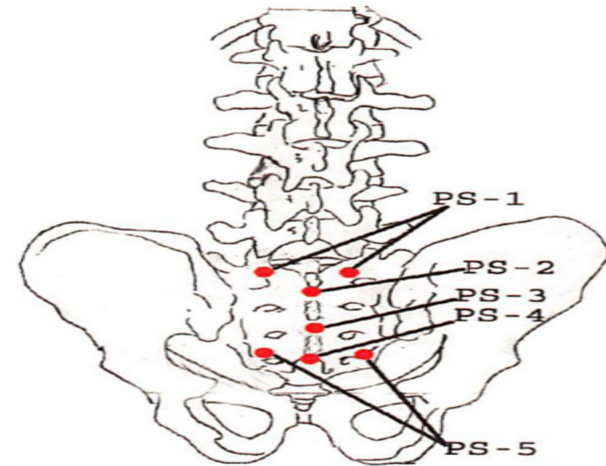
Approximately one-half inch medial to the inferior aspect of the posterior superior iliac spine bilaterally.

Anatomical Correlation: Ligamentous or fascial patterns within the skeletal structure; attachment of the multifidis, longissimus thoracis, and iliocostalis lumborum.

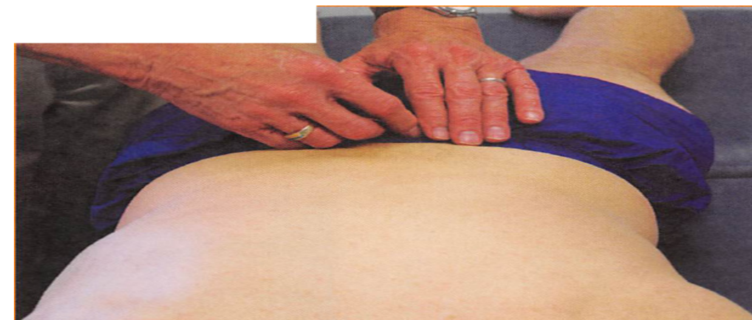
Treatment Position: With patient prone, stand at the side of the table, usually opposite the Tender Point.

Apply a very strong posterior to anterior pressure on the corner of the sacrum, which is diagonally opposite the side of the Tender Point.

This produces a rotation around the oblique axis of the sacrum.



Sacral Tender Points



SACRUM P S 2 and P S 3

Location of Tender Point:

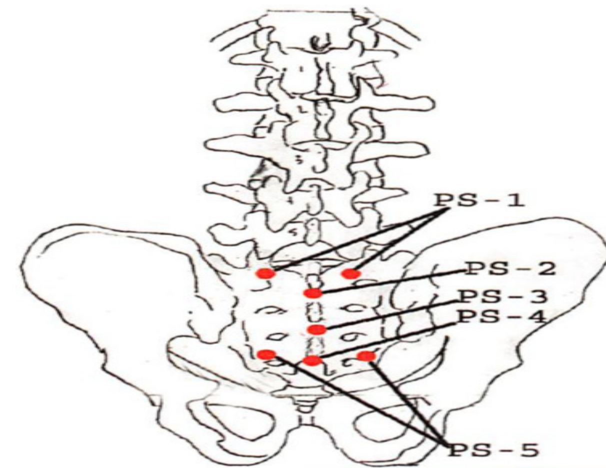
Mid-line on the sacrum between the 1st and 2nd sacral spines.

Anatomical Correlation: Same as stated for P S 1.

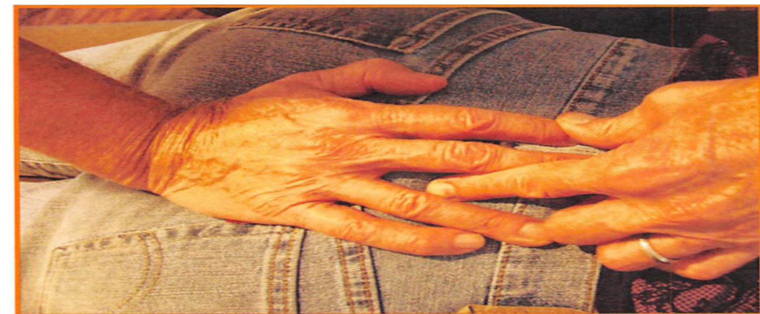
Treatment Position: With patient prone, stand at either side of the table.

Apply strong pressure from posterior to anterior in the mid-line to the apex of the sacrum.

This produces a rotation around the transverse axis of the sacrum.



Sacral Tender Points

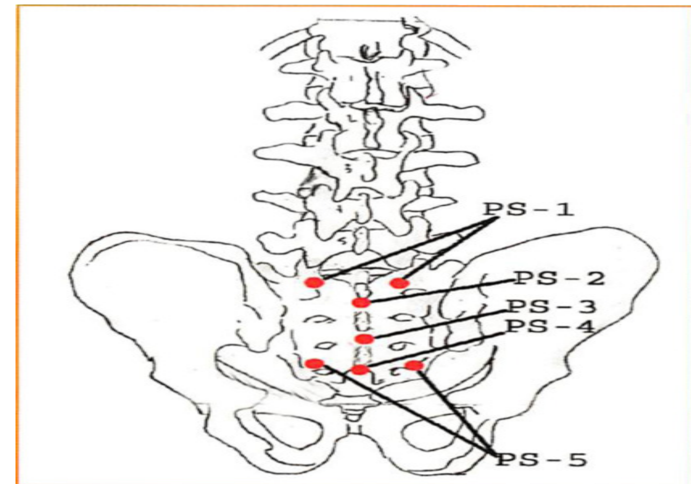


Treatment position

SACRUM P S 4

Location of Tender Point:

Mid-line on the sacrum just above the sacral hiatus and below the 3rd sacral spine.

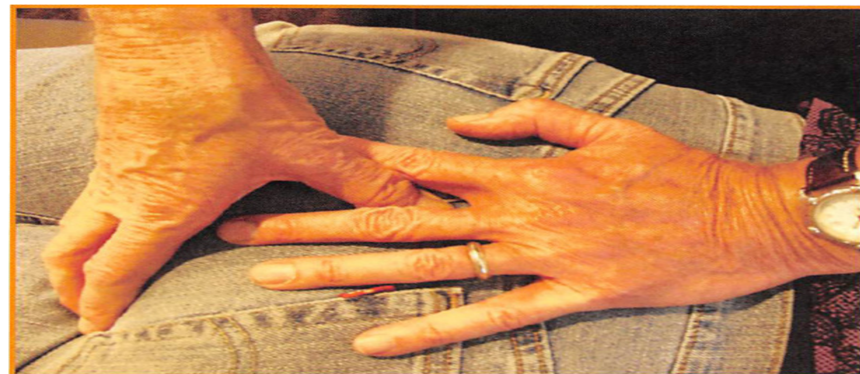


Sacral Tender Points

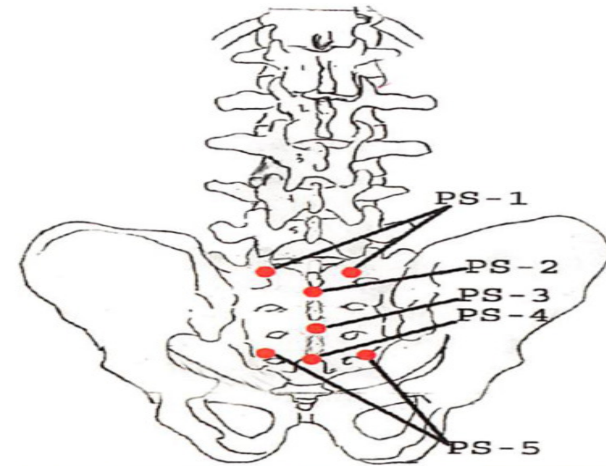
Treatment Position(s): With patient prone, stand at either side of the table.

Apply firm pressure from posterior to anterior in the mid-line on the base of the sacrum.

This produces a rotation around the transverse axis of the sacrum.



SACRUM P S 5



Sacral Tender Points

Location of Tender Point:

About one-fourth inch medial and one-fourth inch superior to the inferior lateral angles of the sacrum bilaterally.

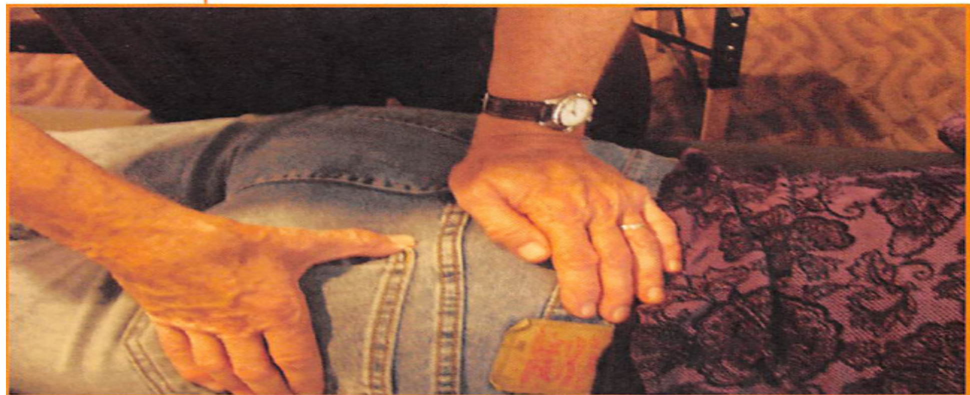
Anatomical Correlation: Same as with P S 1.

Treatment Position:

With patient prone, stand at the side of the table opposite the Tender Point.

Apply a posterior to anterior pressure on the corner of the sacrum diagonally opposite the side of the Tender Point.

This produces a rotation around the oblique axis of the sacrum.


Treatment position

COCCYGEUS (Coccyx Point)

Location of Tender Point: On either side of the tip of the coccyx.

Anatomical Correlation: Coccygeus muscle.

Direction to Press on Tender Point: Press from posterior lateral to anterior medial.

Treatment Position): With patient prone,
Pressure is applied from posterior to anterior on the apex of the sacrum.

While maintaining this pressure, the apex is rotated toward the side of the Tender Point.

Occasionally, the rotation is away. •-

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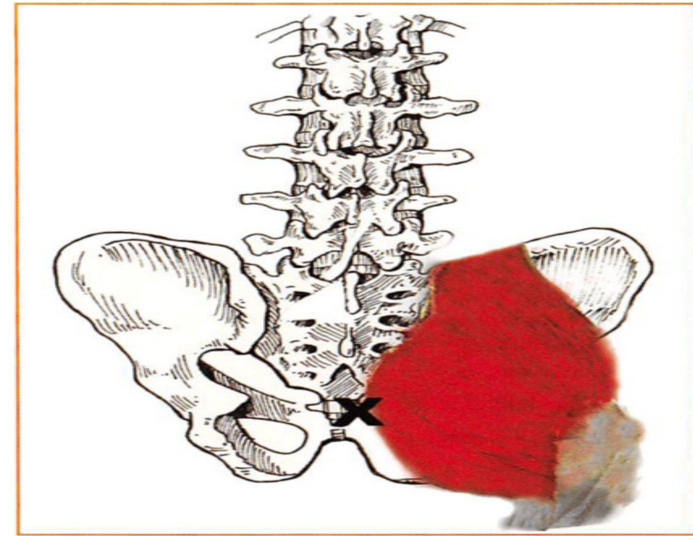
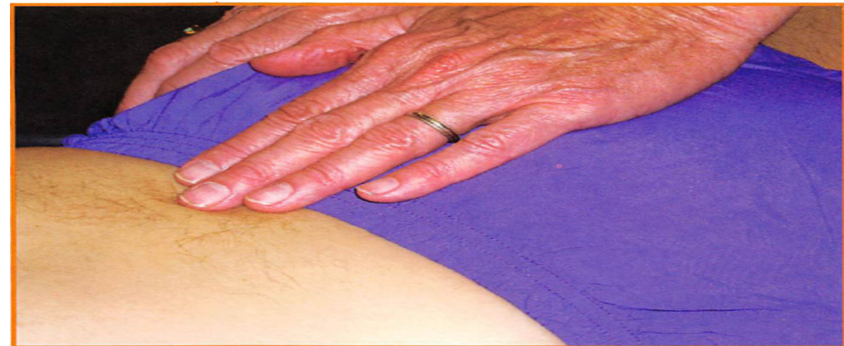


Coccyx Tender Point



Counterstrain for Sacral Torsion

Ramirez and Schwartz JAOA vol91 No3 March1991

- Define torsion: RonR; RonL;LonL;LonR
- Look for tender sacral foramen on axis side
- Place patient prone and sit on opposite side of tender sacral foramina
- Leg opposite tender points is abducted 30 degrees and flexed at the hip and the extended knee rests on your lap
- Apply pressure to opposite ilium with forearm 1 inch lateral to PSIS to relieve 75% of tenderness