

MMT Mod 3

Sciatica

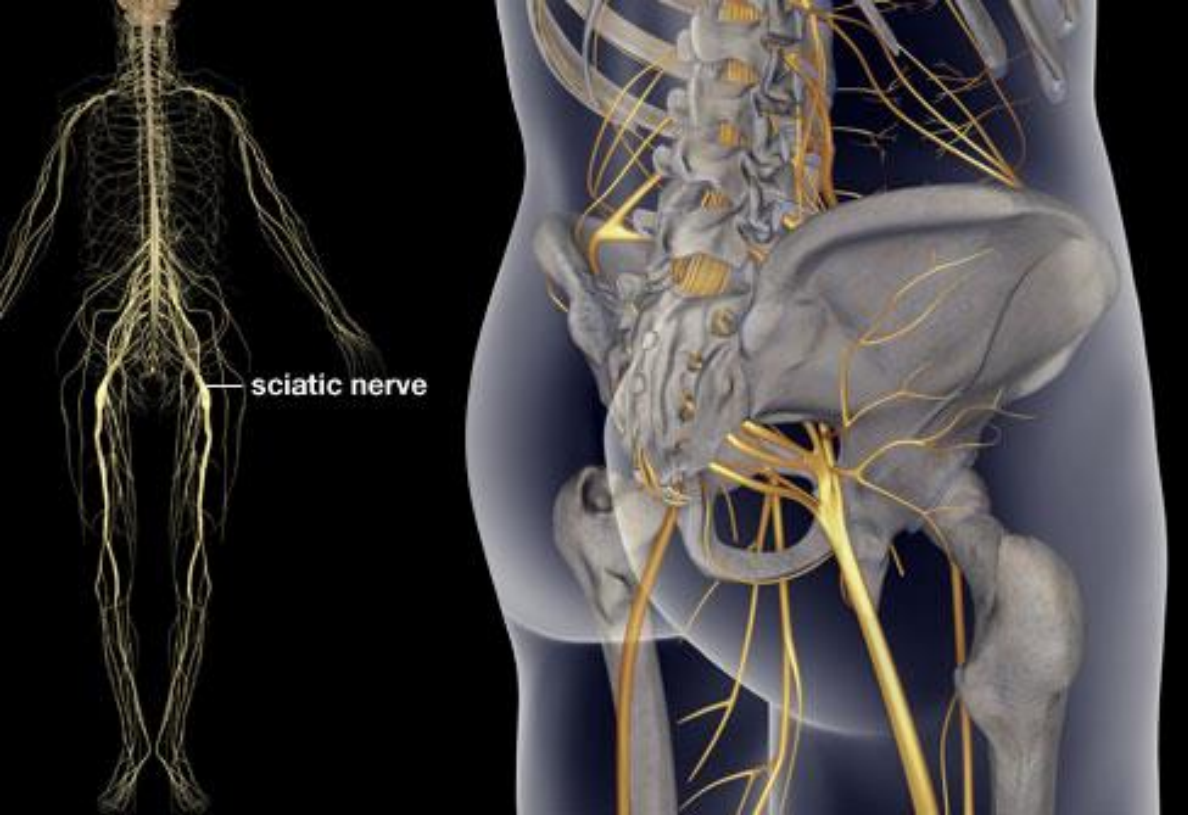
Grand Rounds Case 1

Client: Matt

- Referred from MD to YOU
- Has LBP and Sciatica pain every day but gets worse late afternoon
- Travels Down to R foot/big toe
- Has Xray and MRI from Local Ortho Surgeon whom gave ok to see you
- No recent Trauma or Past Surgery
- Taking OTCs anti inflamms (only temp help)
- NCV taken last week produced Negative results
- At times when sitting R foot will tingle and twitch at night

Matt's Film





Sciatica or Other Back Pain?

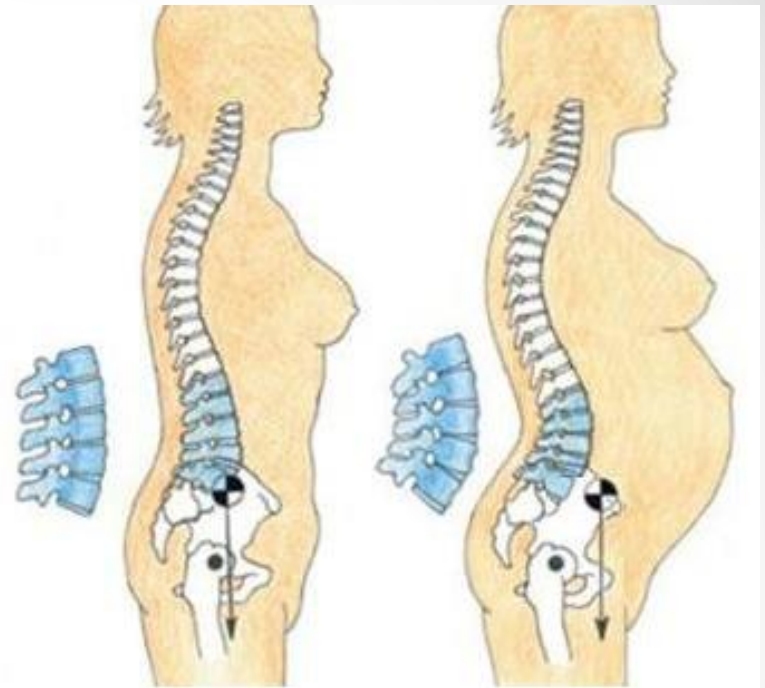
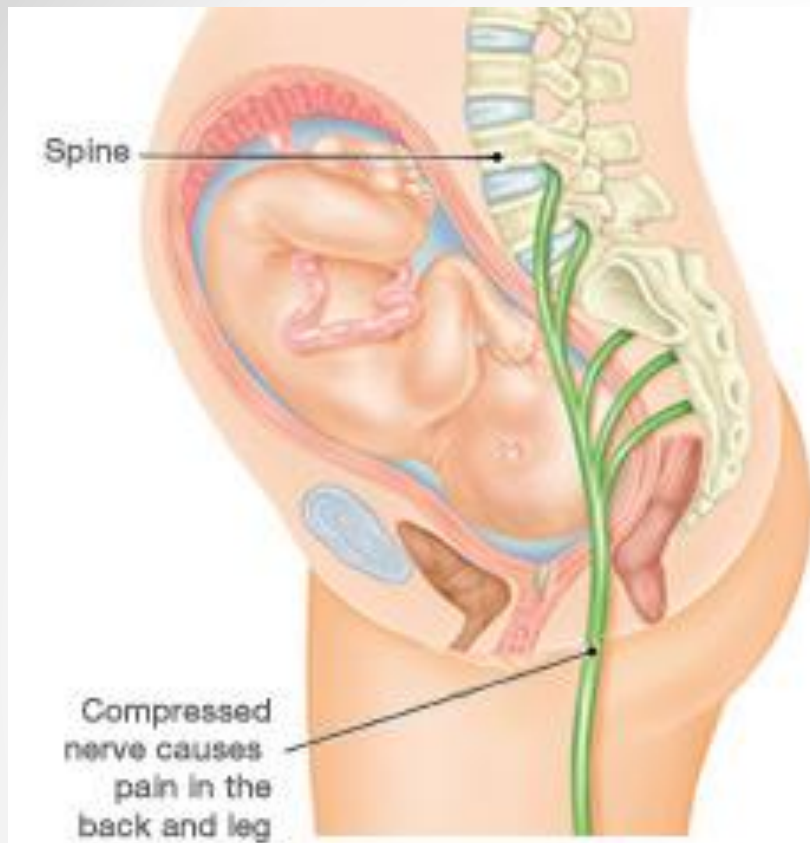
Up to 85% of Americans experience some type of back pain during their lives. But this doesn't always involve the sciatic nerve. In many cases, back pain is the result of overextending or straining the muscles in the lower back. What most often sets sciatica apart is the way the pain radiates down the leg and into the foot. It may feel like a bad leg cramp that lasts for days.

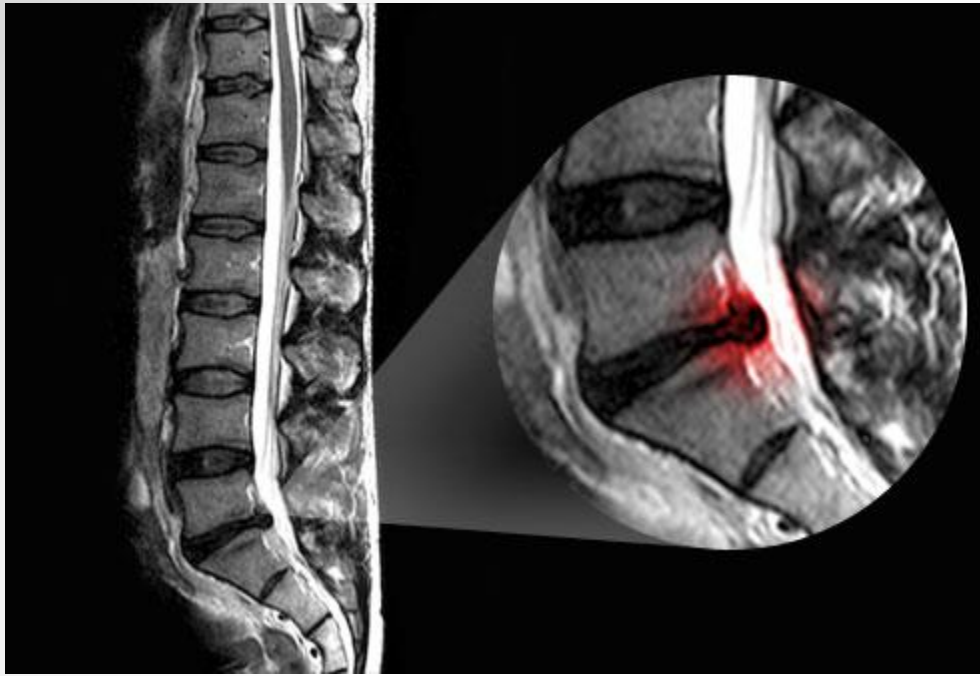


The most common symptom of sciatica is lower back pain that extends through the hip and buttock and down one leg. The pain usually affects only one leg and may get worse when you sit, cough, or sneeze. The leg may also feel numb, weak, or tingly at times. The symptoms of sciatica tend to appear suddenly and can last for days or weeks.



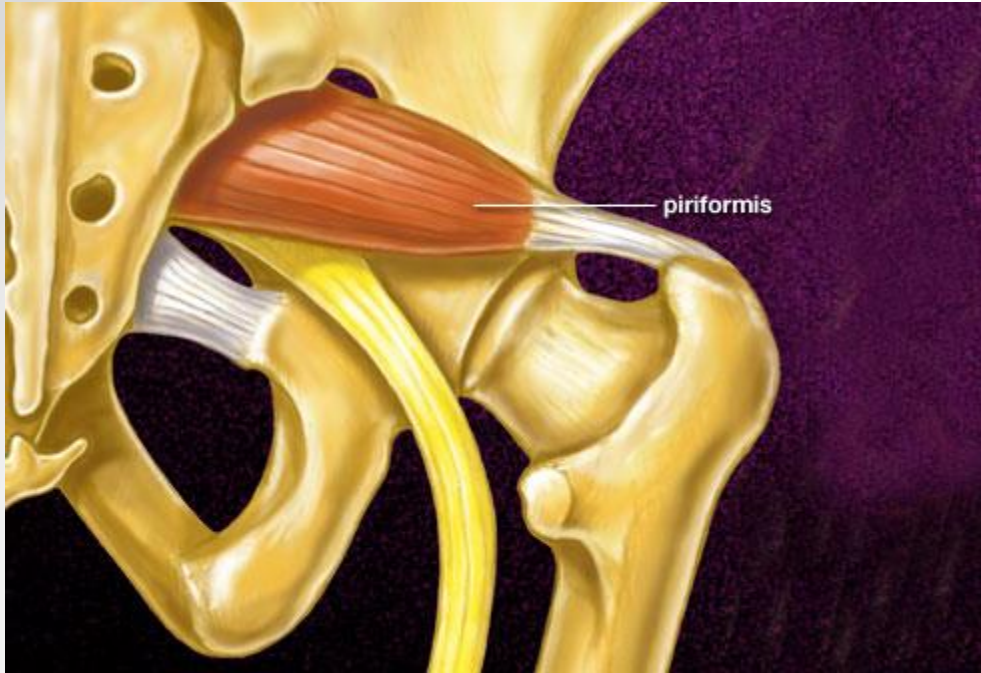
Most people who get sciatica are between the ages of 30 and 50. Women may be more likely to develop the problem during pregnancy because of pressure on the sciatic nerve from the developing uterus. Other causes include a herniated disk and degenerative arthritis of the spine.





Cause: Herniated Disk

A common cause of sciatica is a herniated disk. Disks act like cushions between the vertebrae of your spine. These disks get weaker as you age and become more vulnerable to injury. Sometimes the gel-like center of a disk pushes through its outer lining and presses on the roots of the sciatic nerve.



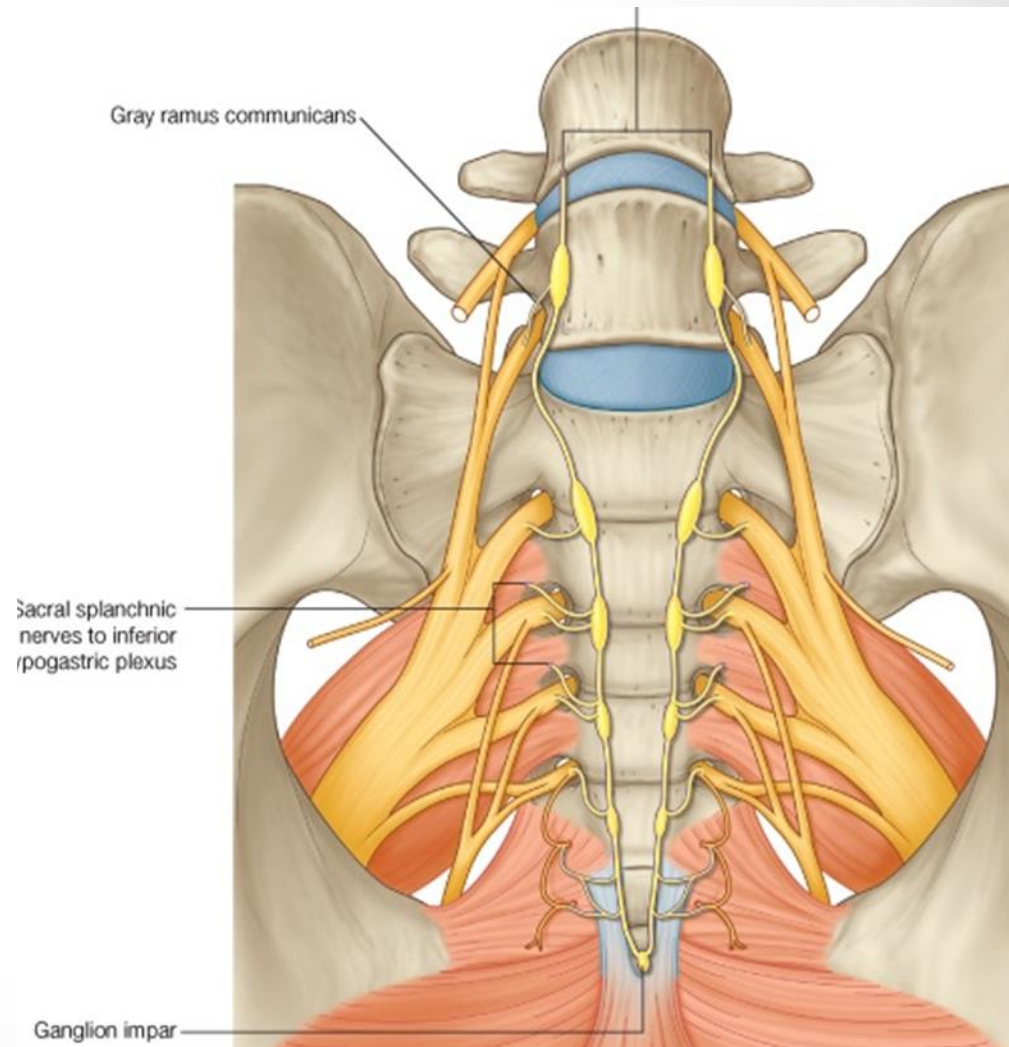
The piriformis is a muscle found deep inside the buttocks. It connects the lower spine to the upper thighbone and runs directly over the sciatic nerve. If this muscle goes into spasm, it can put pressure on the sciatic nerve, triggering symptoms of sciatica. Piriformis syndrome is more common in women.



You might not think of too much cash as a source of pain, but a fat wallet can trigger piriformis syndrome. The condition can affect men who wear their wallet in the back pocket of their pants. This puts chronic pressure on the piriformis muscle and can aggravate the sciatic nerve over time. You can avoid this problem by keeping your wallet in a front pocket or jacket pocket.

Sciatic nerve symptoms can vary from person to person but sciatic nerve pain is typically brought on by the inflammation of your five root nerves that are connected to your sciatic nerve, the sciatic nerve starts in your lower back and travels down the back of both of your legs.

It's really important that you know just what is causing your sciatic nerve symptoms as your symptoms will vary from those of other individuals. Just what is Sciatica? The initial thing to know about the sciatic nerve is not exactly a diagnosis.



Typical Involved Sciatica Pain

- The pain is always one-sided
- You will feel radiating pain
- Prickling sensation
- Tingling Sensation
- Numbness
- Some weakness or difficulty moving your leg
- Sharp pains

Red Flags

Cauda Equina

Saddle anesthesia
Bladder Dysf
Progressive Neuro
Def
Sphincter laxity
Peroneal sensory
Loss
Major motor
Weakness
-Quad
-Foot drop

Fracture

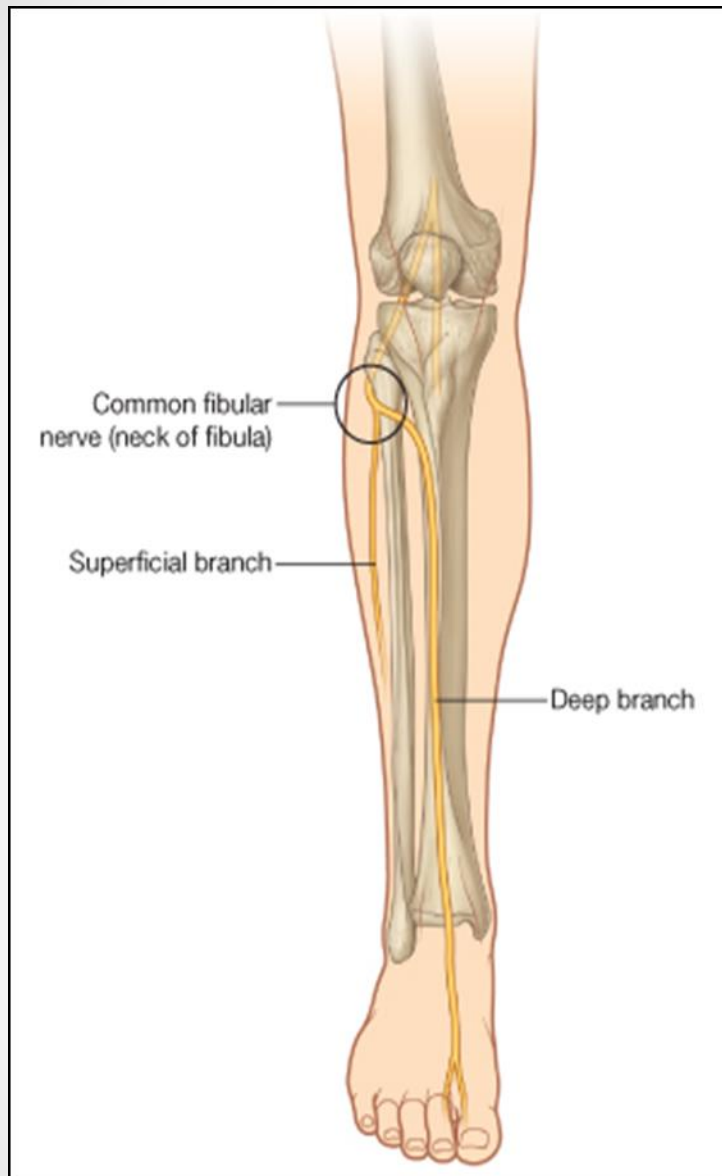
Trauma
-MVA
-Fall
Minor trauma in older
pt

Tumor/Infection

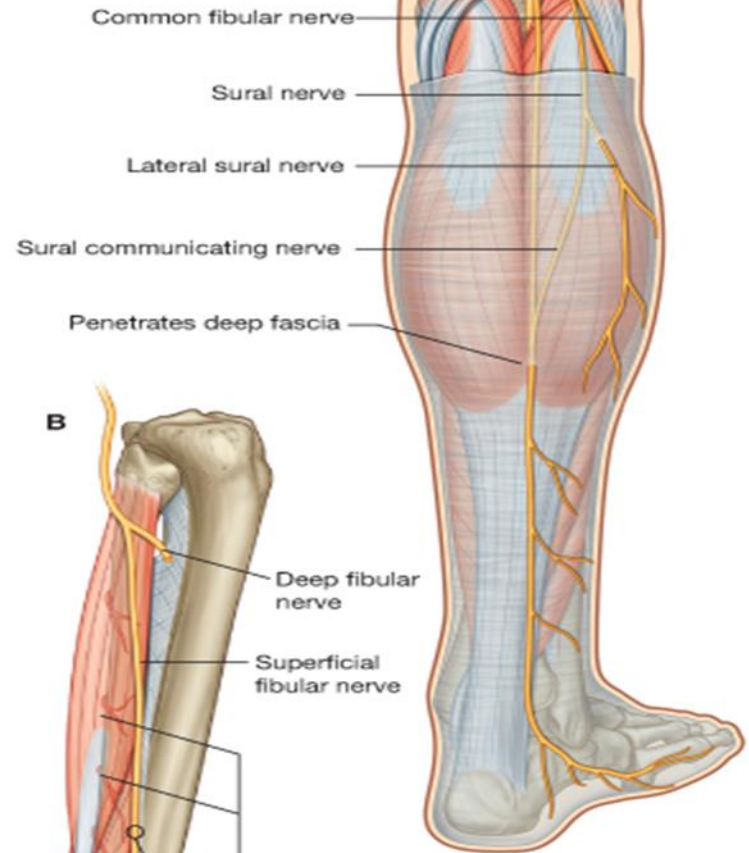
>50 <20
h/o cancer
Fever, chills, wt loss
Infection RF's
-Immune supp
-IV drug use
-Recent
Night pain
Increased pain when
supine

Referral

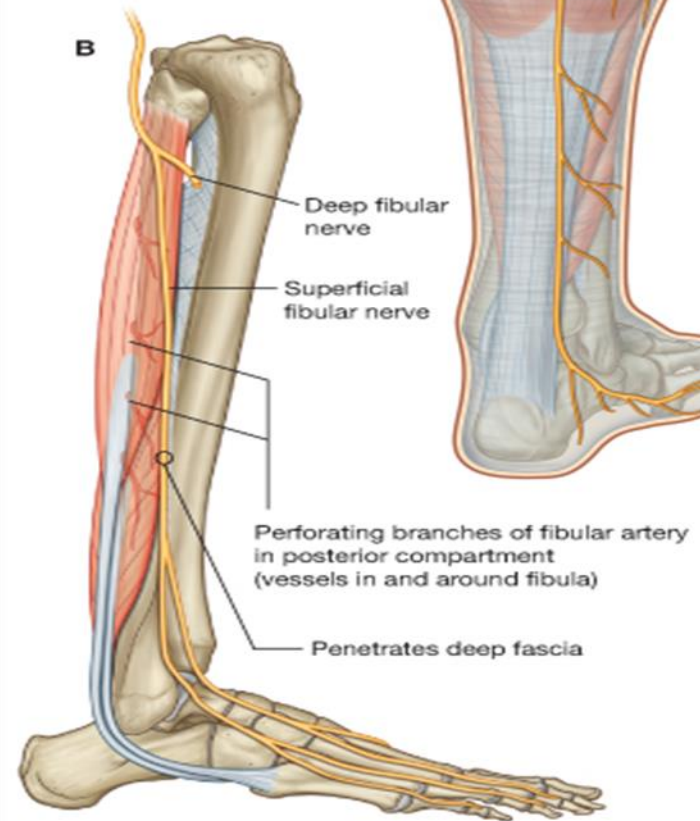
- ❑ HNP (> 8 weeks)
- ❑ Ominous signs/sx - fever, weakness, bowel/bladder dysfunction
- ❑ Progressive neuro deficit or flaccid paralysis



A



B



Inflammatory vs Mechanical Back pain

Severe Disc pathology patients will exhibit one or both of these conditions.

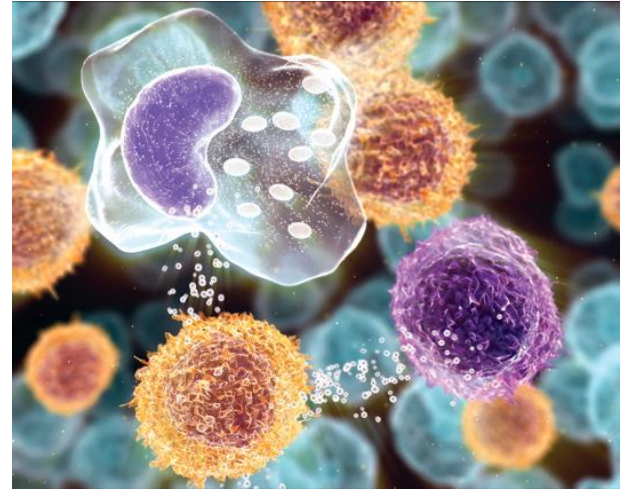
[Man Ther.](#) 2009 Jun;14(3):314-20. doi: 10.1016/j.math.2008.04.003. Epub 2008 Jun 13.

Mechanical or inflammatory low back pain. What are the potential signs and symptoms?

[Walker BF](#)¹, [Williamson OD](#).

Chemical (Inflammatory)

- Pain that doesn't go away at night, awakens you.
- Improves with exercise, and walking throughout the day.
- Worse in the morning
- Can alternate sides. Esp. in the glutes



Dr. Michael Weisman MD

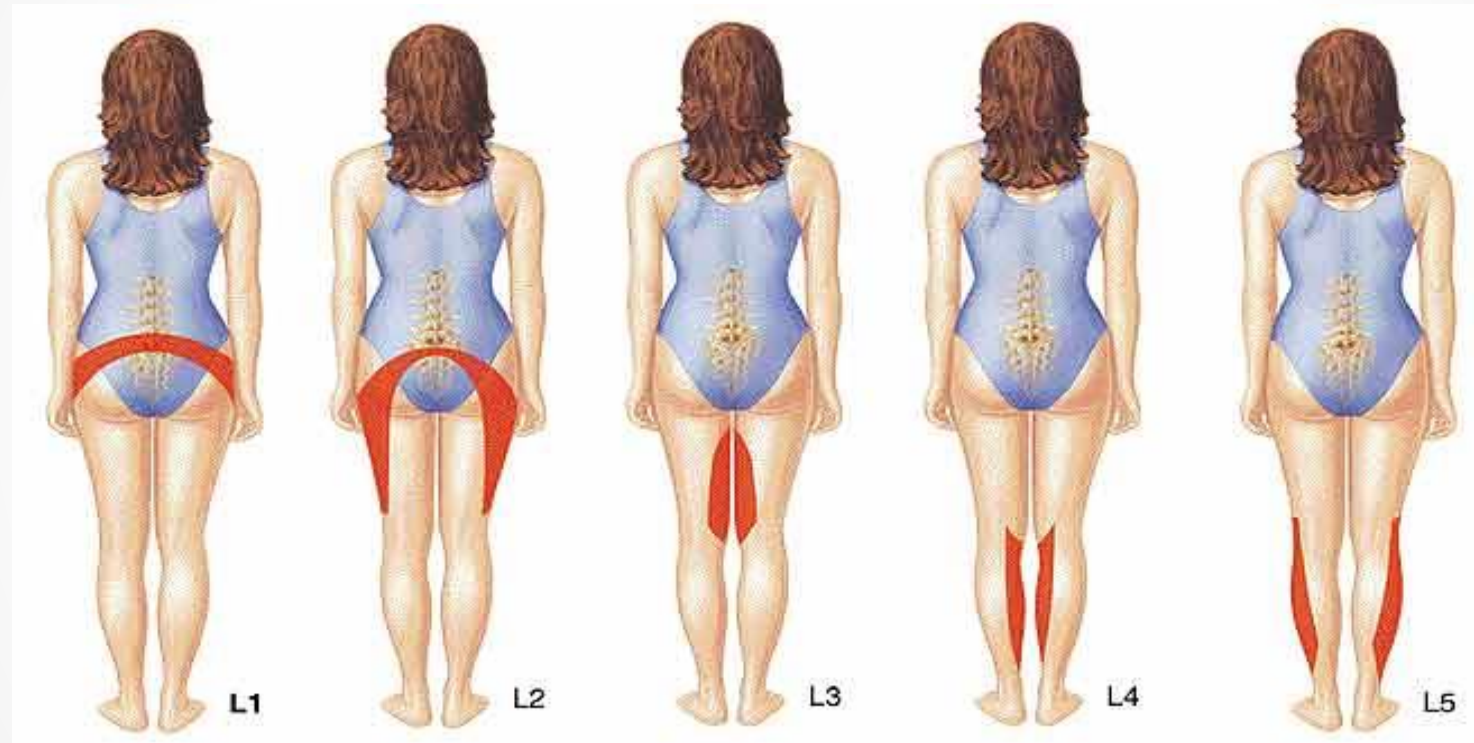
Mechanical



- Back pain that goes away when you go to bed
- As day goes on gets worse
- Exercise increases pain
- Usually associated with a trauma, sneezing, lifting.

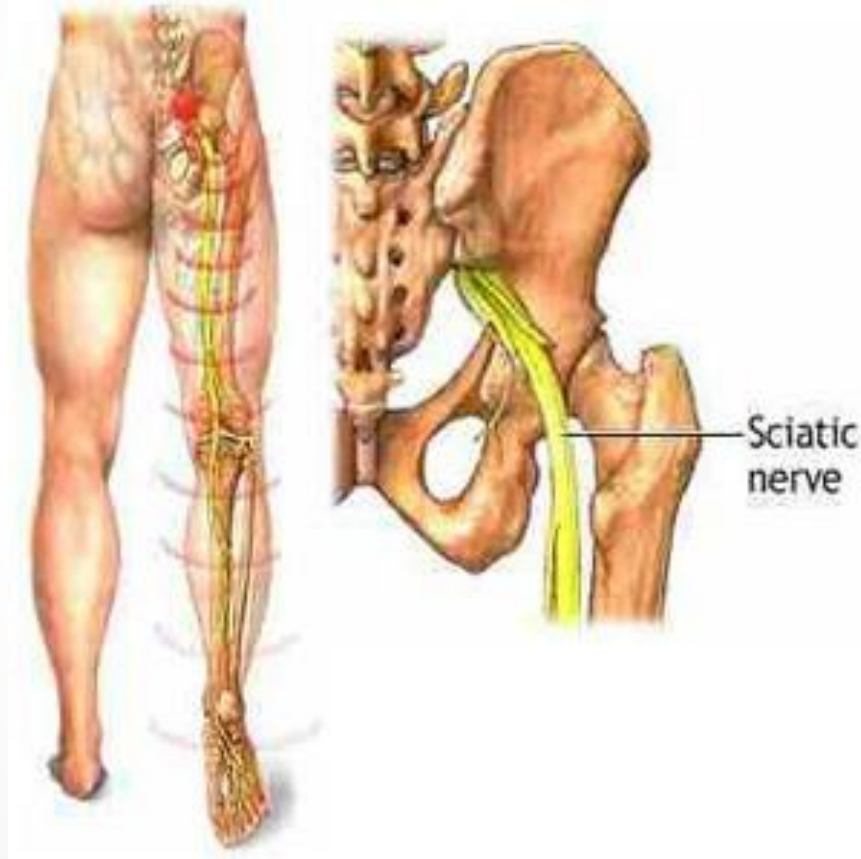
Dr. Michael Weisman MD

Mechanical pain patterns



Sciatica

“Catch all phrase” for anything traveling down the leg.

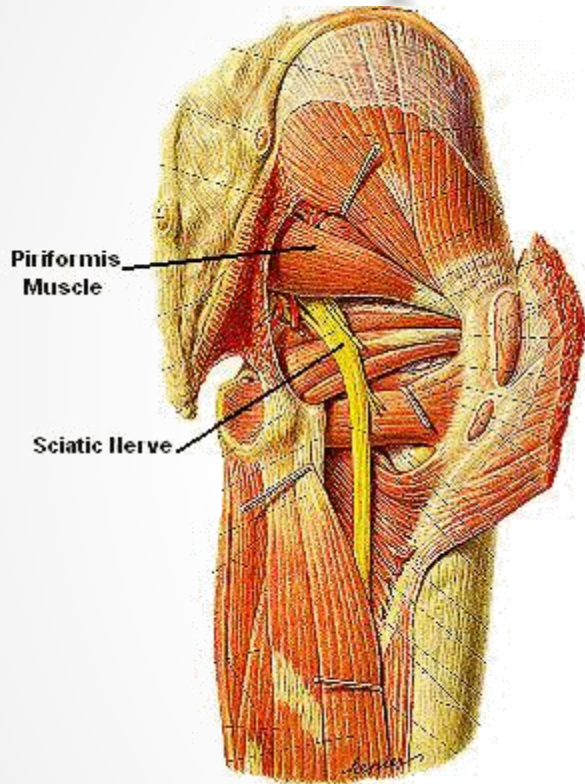


Types of Sciatica

- Discogenic sciatica
- Peripheral entrapments

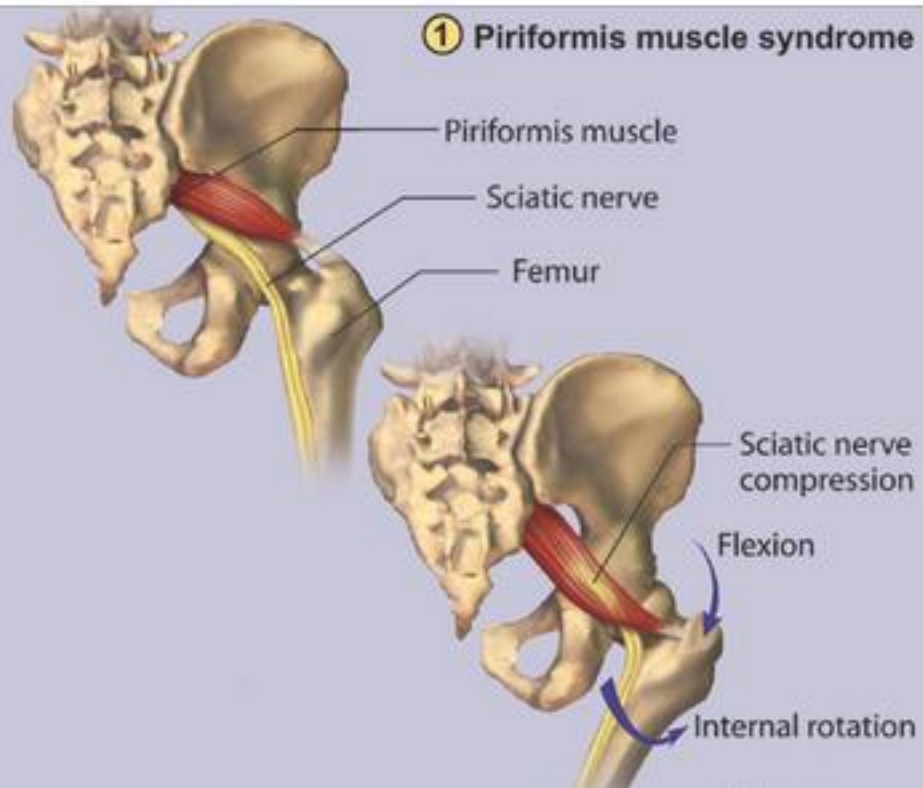


Peripheral entrapment



Piriformis Syndrome is caused by an entrapment (pinching) of the sciatic nerve as it exits the Greater Sciatic notch in the gluteal region. There are two normal variations for the exit of the sciatic nerve in this region. The first places the sciatic nerve inferior (below) to the Piriformis muscle and superior (above) the gemellus muscle. Entrapment in this area is likely due to a myospasm or contracture (tightening or shortening respectively) of either of these two muscles.

① Piriformis muscle syndrome



Checking hip capsules, and joint ROM for tight muscles bilaterally.



Clients may exhibit Internal capsular restriction when trying to stretch the involved Piriformis mm.

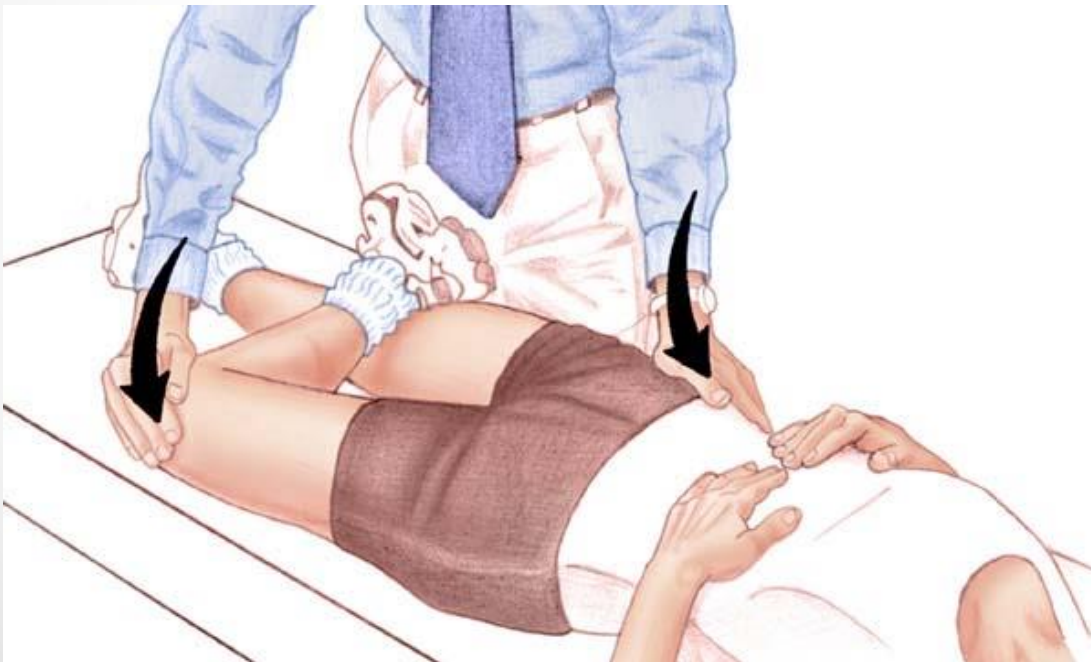


Stretching For tight adductors and capsule restriction

8 to 10 sec

Right before red line

Contract – Hold - Stretch

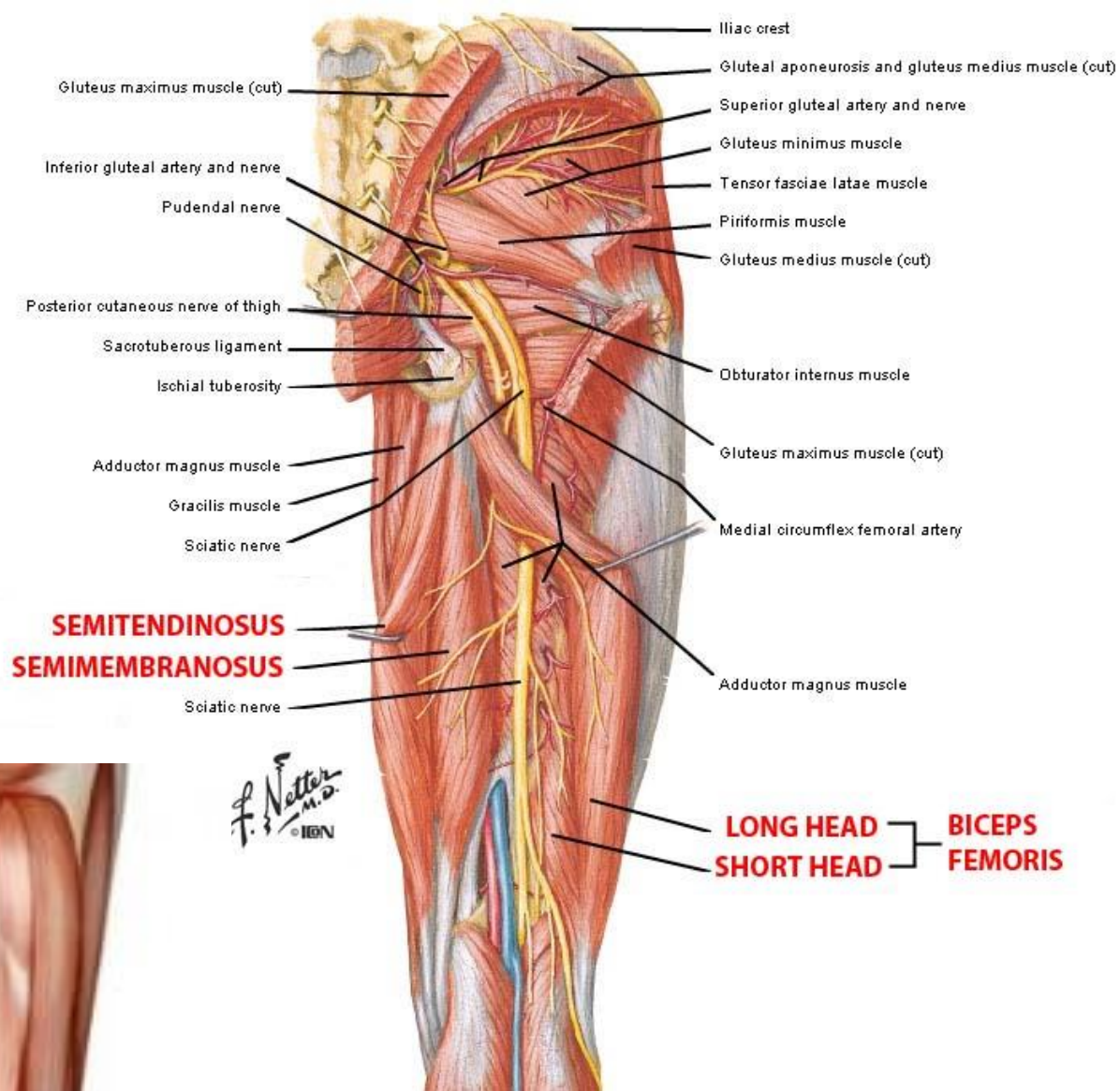


Tight Piriformis/ Sacral Deviation



Piriformis work





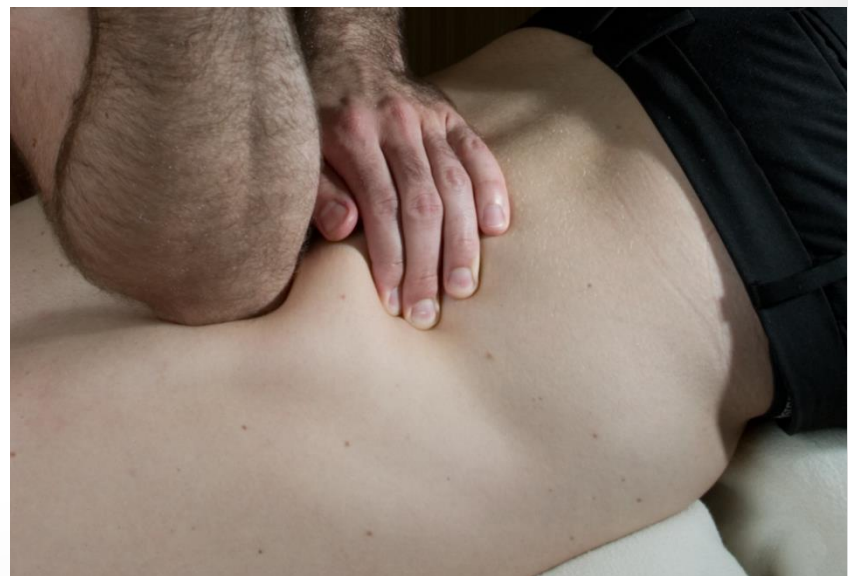
Hamstring Muscles

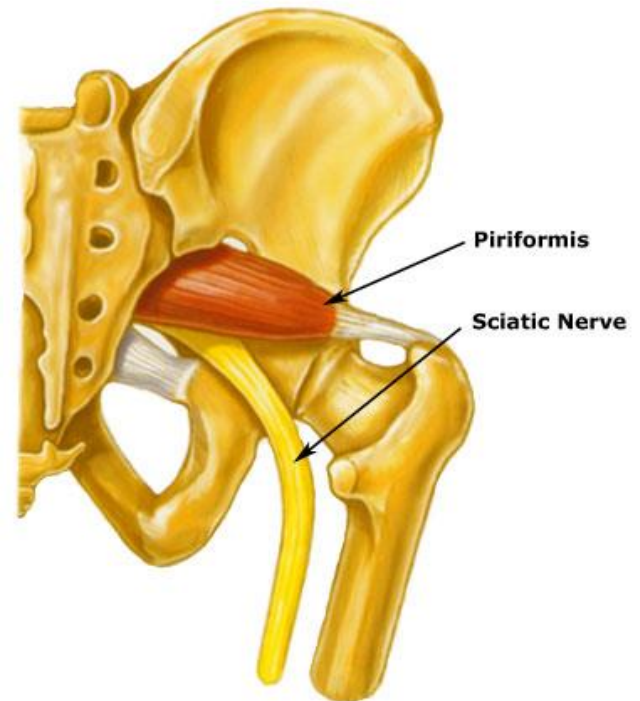
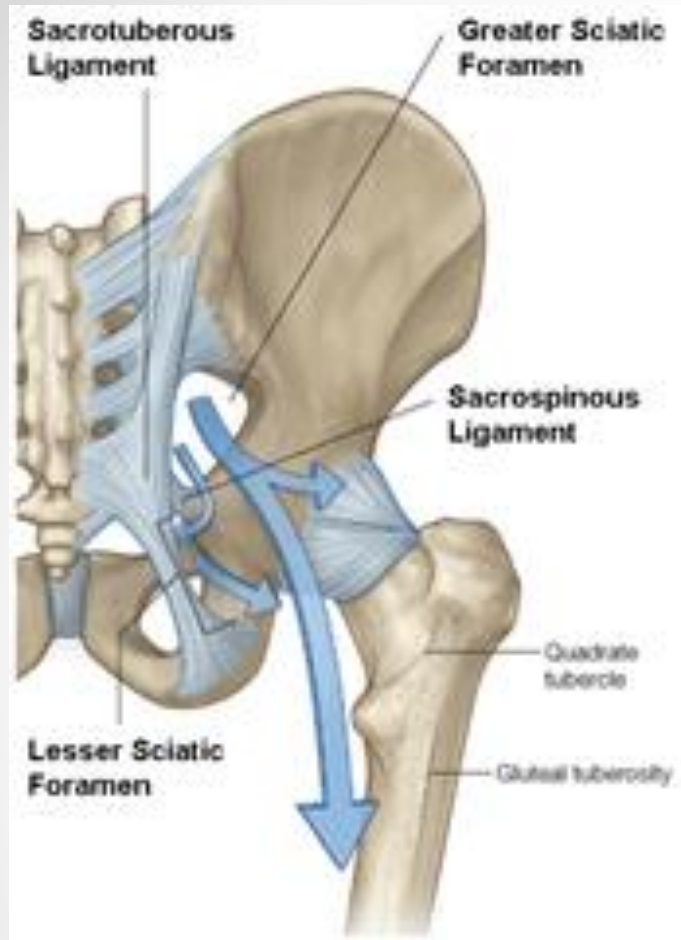
Biceps Femoris

Semitendinosus

Semimembranosus

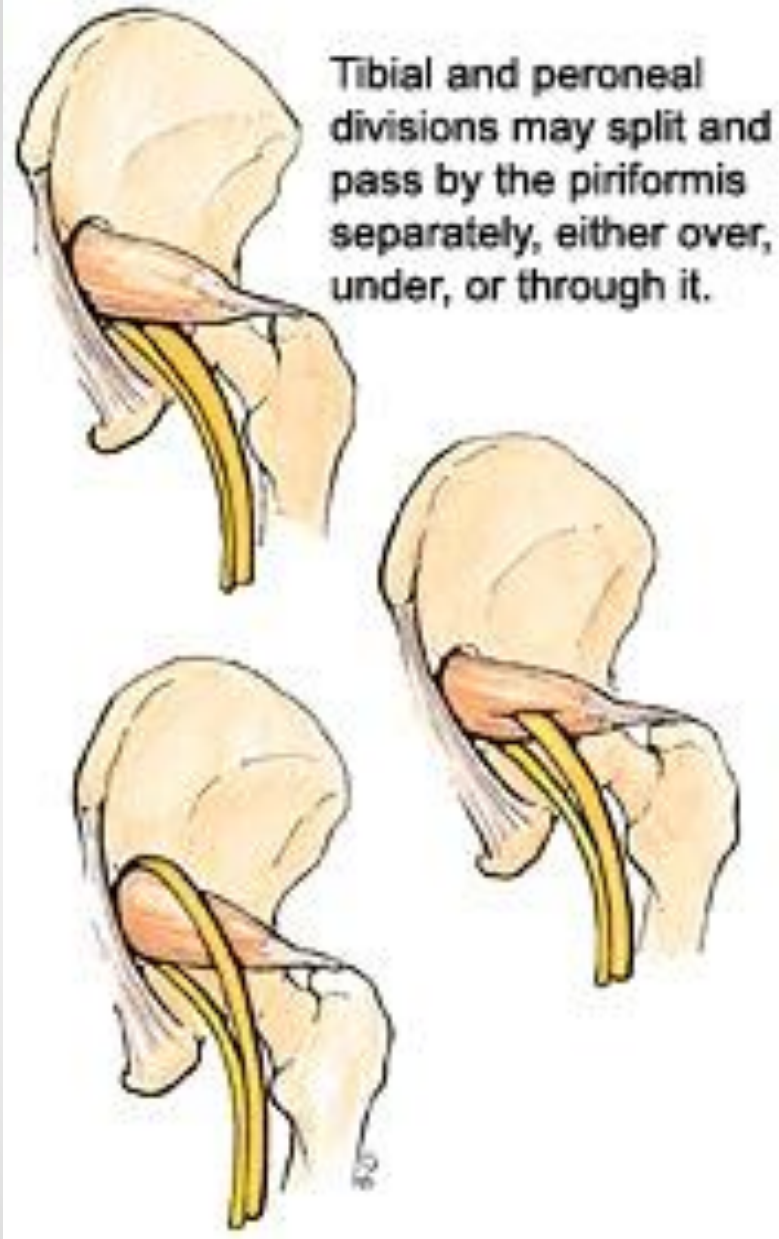






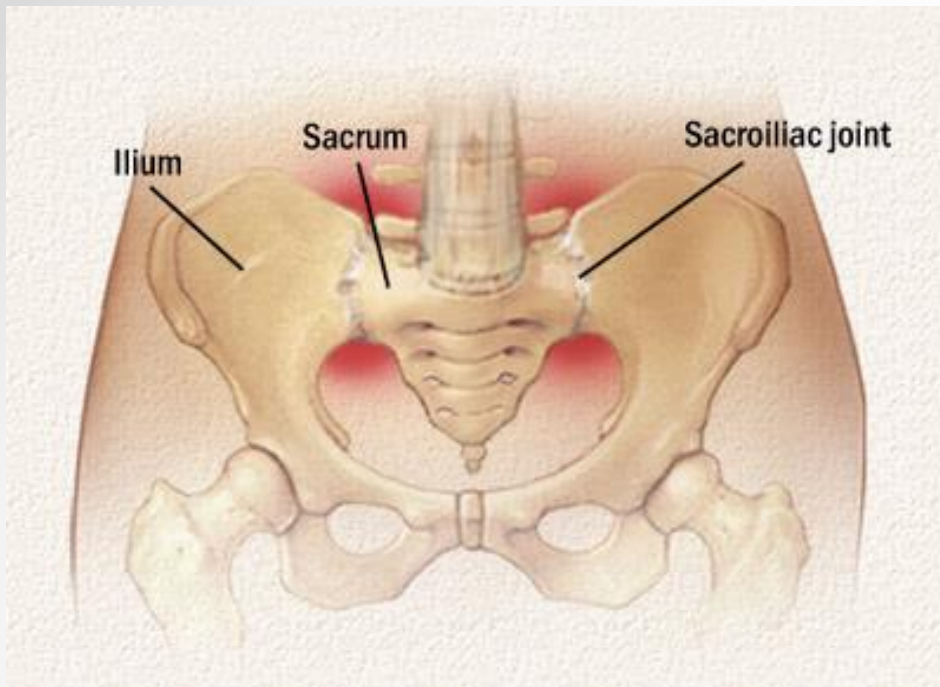
Tibial and peroneal divisions may split and pass by the piriformis separately, either over, under, or through it.

The sciatic nerve is composed of two divisions: the peroneal and tibial. Usually, they are bound together along the length of the nerve, but in some cases they divide as they pass the piriformis muscle

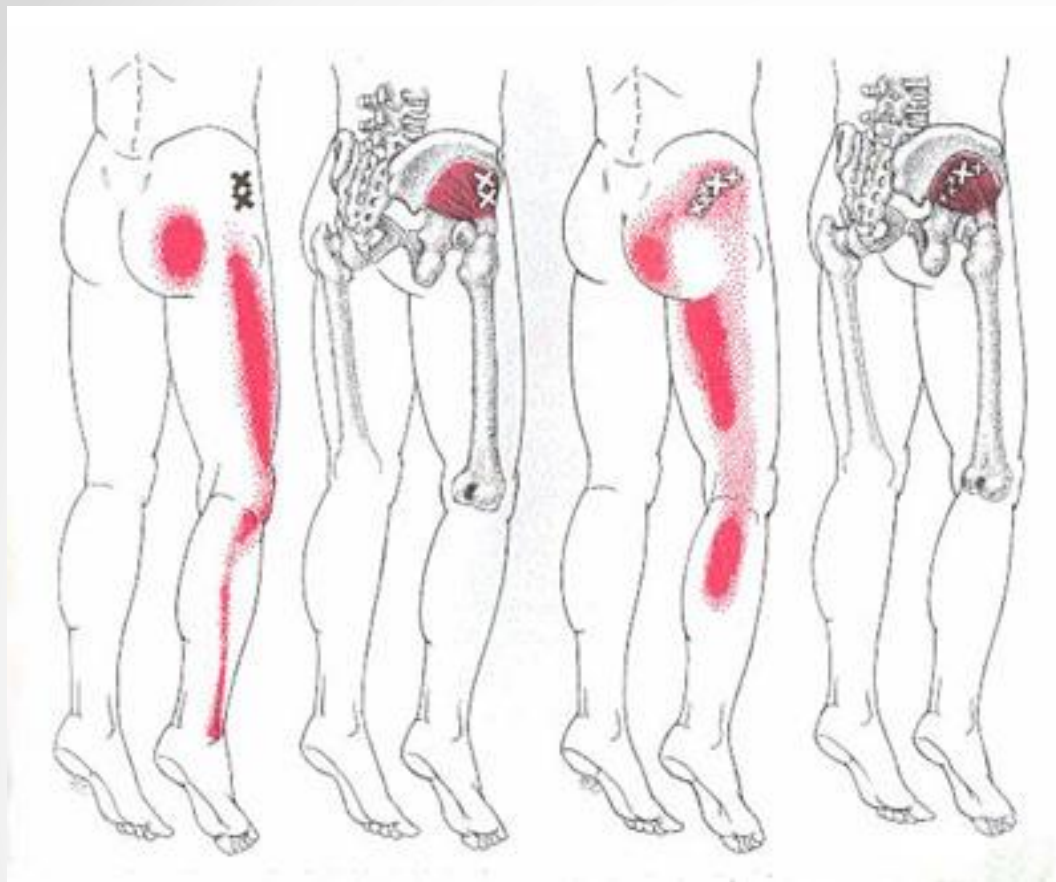


Causes of Sciatica

- **Sacroiliac joint dysfunction**
 - ❑ The sacroiliac joint affects the biomechanics in the pelvis
 - ❑ When a fixation occurs at this joint the patient will experience muscle tightness
 - ❑ The muscle tightness will then lead to sciatic like symptoms
 - ❑ Pain is usually more localized to the hip and buttock area, rarely below the knee
-

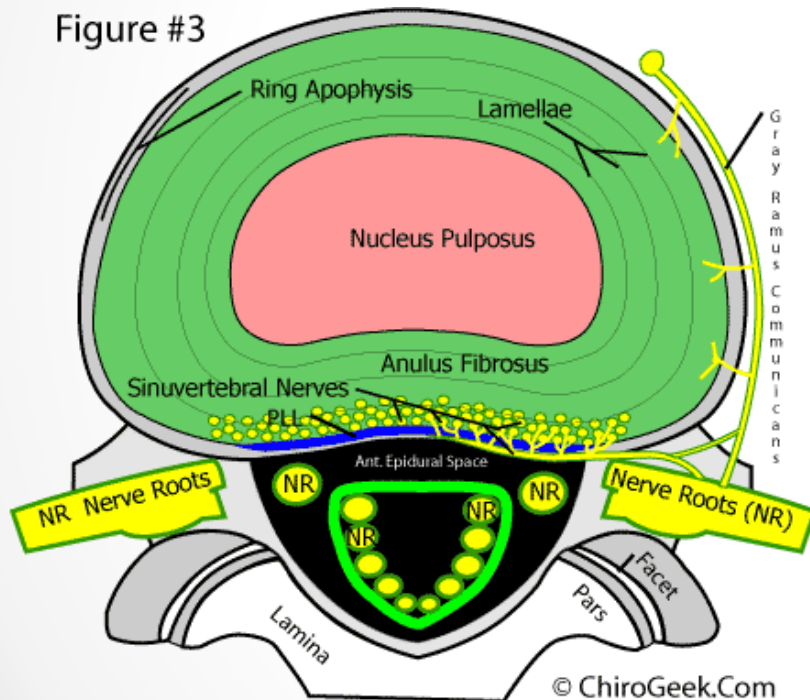


Sacroiliitis is an inflammation of one or both of the sacroiliac joints, the spot where the lower spine connects to the pelvis. Sacroiliitis can cause pain in the buttocks, lower back, and may even extend down one or both legs. The pain can worsen with prolonged standing or climbing stairs. Sacroiliitis can be caused by arthritis, injury, pregnancy, or infection.

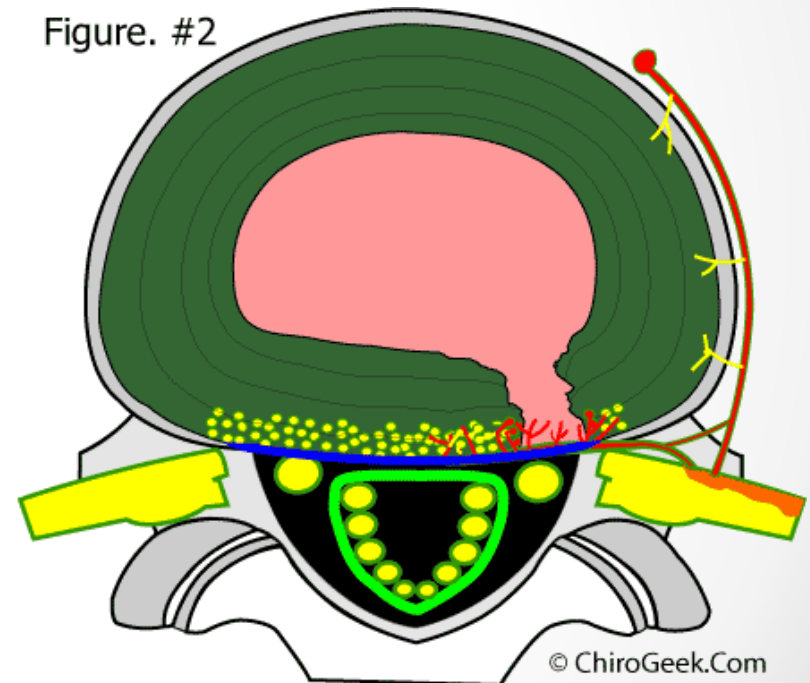


Sciatic Trigger Points

Normal Disc



Disc Bulge



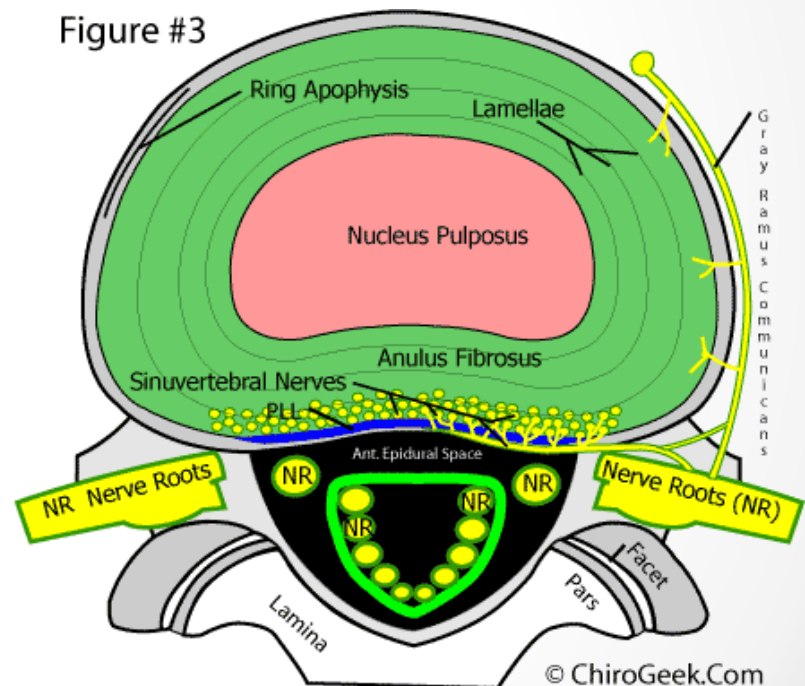
Disc Anatomy Function

Nucleus supports the majority of the axial loads

Annulus provides support

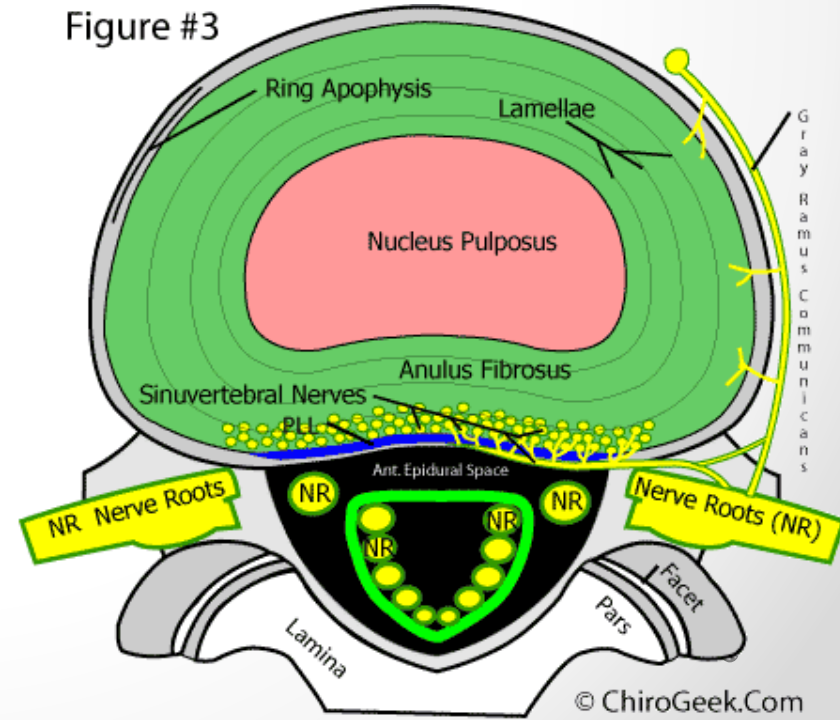
Disc dehydration causes shifting of axial load to annulus.

Biochemical reactions take place.



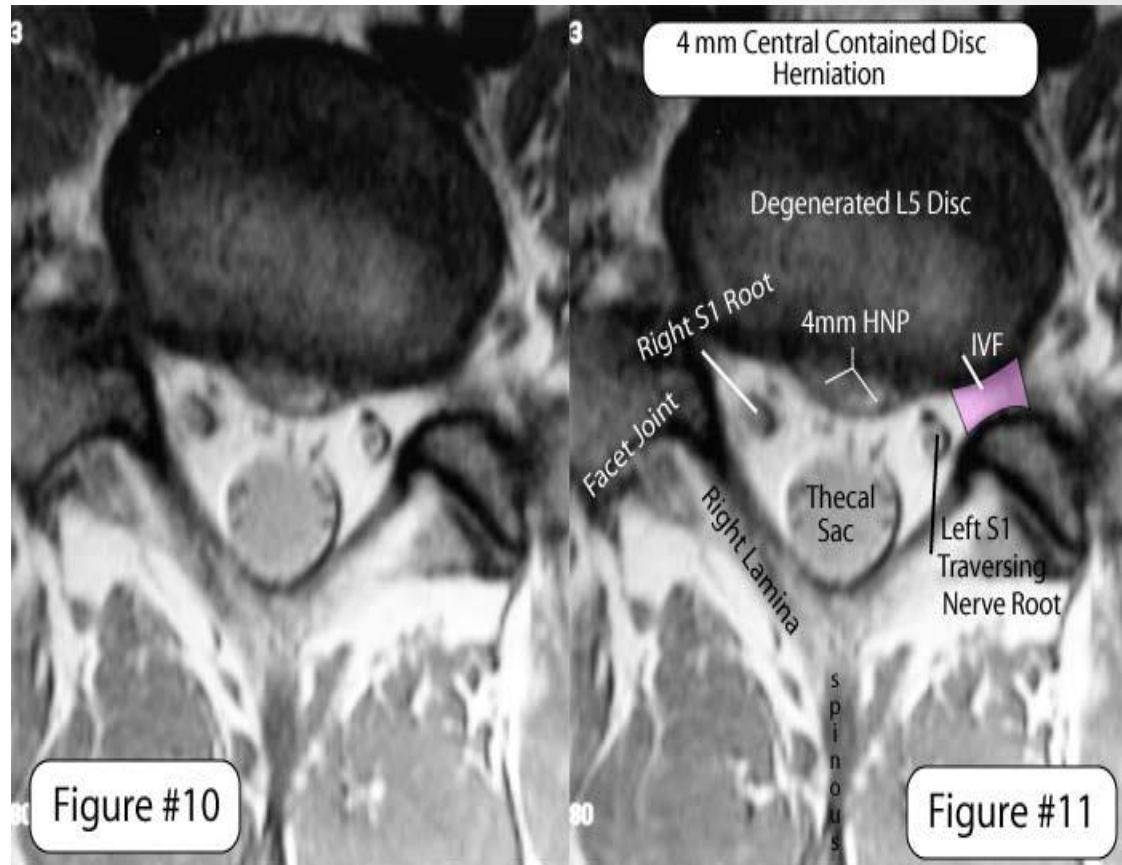
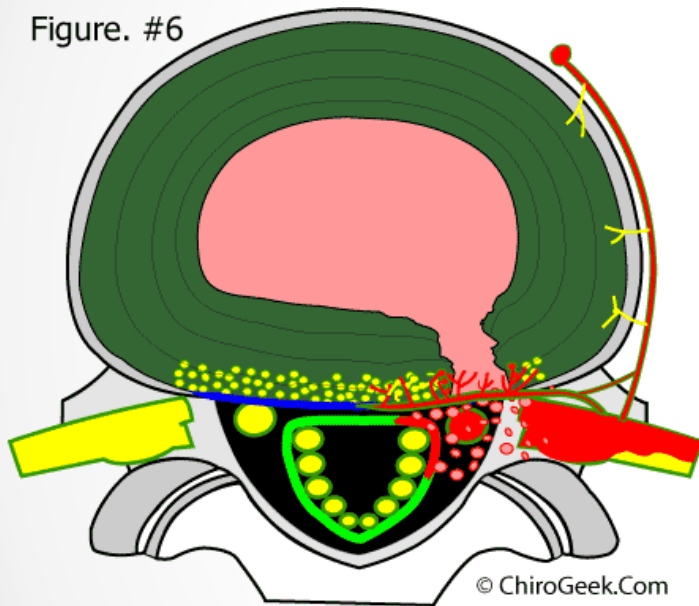
Degeneration physiology

1. Increase in axial load causes increase in intradiscal pressure.
2. Proteoglycan synthesis stops (anhydrosis begins) Disc cells need @ 3atm to function normally.
3. What water is left is slowly being forced out.
4. Nucleus deforms, shifts axial load to annulus causes lamellae to fold inward.
5. H₂O leaves (H₂O is basic) and the disc becomes acidic, further diminishing cell reproduction.



Understanding the MRI

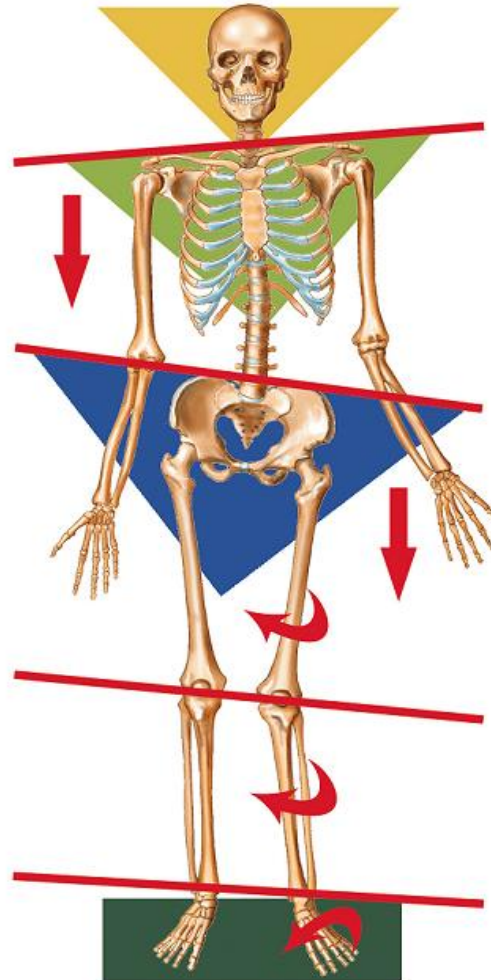
Figure. #6



Avoid Twisting



Look for the Root cause



The End THANK YOU!

MMT Mod 3 Sciatica