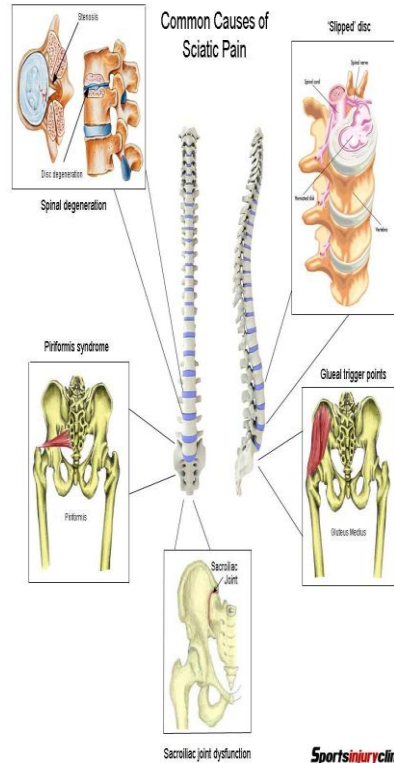
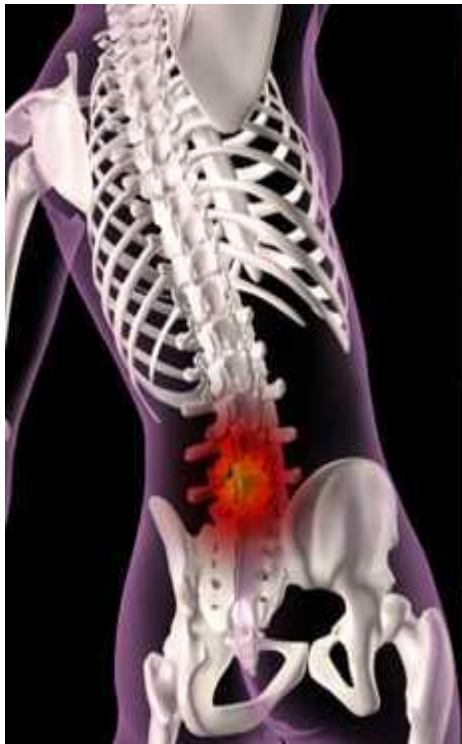
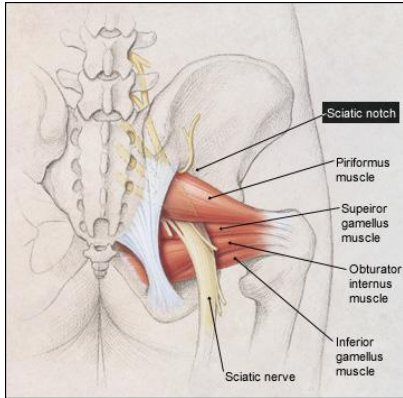


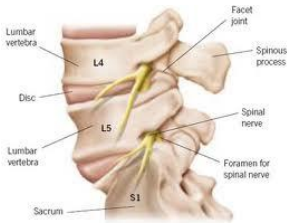
Sciatica

Yuliya Mutsa
PTA 236



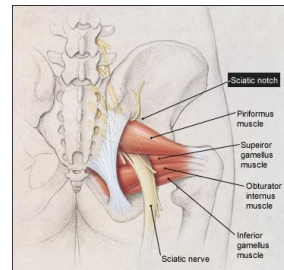
Sciatica

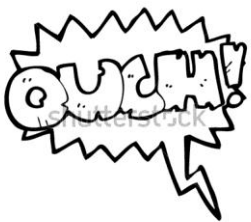
- is a common type of pain affecting the sciatic nerve, which extends from the lower back all the way through the back of the thigh and down through the leg. Depending on where the sciatic nerve is affected, the pain may also extend to the foot or toes. Usually only one side of the lower body is affected.



Causes

- Sciatica most commonly occurs when a herniated disk or a bone spur on the spine compresses part of the nerve causing inflammation, pain and numbness in the affected leg.
- Irritation of the roots of the lower lumbar and lumbosacral spine
- Lumbar spinal stenosis (narrowing of the spinal canal)
- Degenerative disc disease (breakdown of discs, which act as cushions between the vertebrae)
- Spondylolisthesis (a condition in which one vertebra slips forward over another one)
- Piriformis Syndrome
- More rarely, the nerve can be compressed by a tumor or damaged by a disease such as diabetes.





What are the symptoms?

- Pain - vary widely from a mild ache to a sharp, burning sensation or excruciating discomfort. Sometimes it may feel like a jolt or electric shock. It may be worse when you cough or sneeze, and prolonged sitting can aggravate symptoms.
- Tingling, weakness and numbness
- Difficulty moving the leg or foot



Statistics

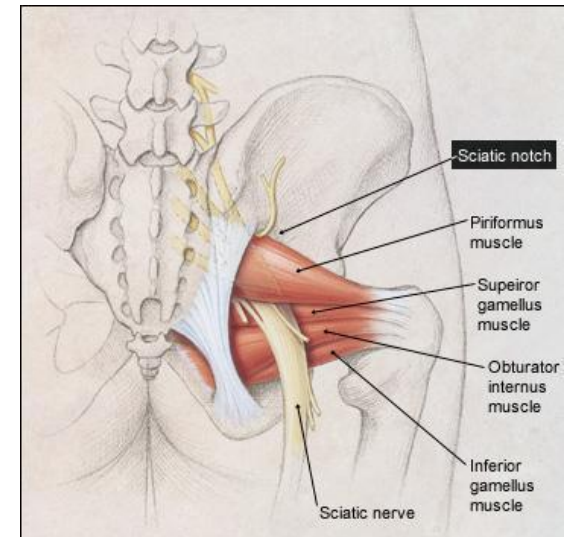
- Sciatica is relatively common affecting 15% to 40% people during their lifetime. This incidence is related to age, rare before 20 y/o, the highest incidence is found in the fifth decade and then decreases with increasing age. Regular walking also was found to increase the incidence of sciatica. In addition, occupations with greater physical labor, such as carpenters and machine operators, have a higher likelihood of developing sciatica compared to less mobile office workers.

Risk factors for sciatica include:

- *Age*
- *Obesity*
- *Occupation*
- *Prolonged sitting*
- *Diabetes* affects the way your body uses blood sugar, increases your risk of nerve damage.

Complications

- Nerve damage
- Loss of feeling in the affected leg
- Weakness in the affected leg
- Loss of bowel or bladder function



Diagnosis

- The most applied diagnostic test is the straight leg raise to produce [Lasègue's sign](#), which is considered positive if pain in the distribution of the sciatic nerve is reproduced with between 30 and 70 degrees passive flexion of the straight leg. While this test is positive in about 90% of people with sciatica, approximately 75% of people with a positive test do not have sciatica.
- <http://www.youtube.com/watch?v=GEm9TzkVPQQ>
- Imaging tests such as CT or MRI can help with the diagnosis of lumbar disc herniation.

Treatments and drugs

- **Medications:** Anti-inflammatory, Muscle relaxants.
- **Steroid injections:** Corticosteroids help reduce pain by suppressing inflammation around the irritated nerve.
- **Surgery**
- **Physical therapy** (see next slide)
- Acupuncture
- Chiropractic

Physical Therapy

- **Posture correction** - Pay special attention to your *core muscles* — the muscles in your abdomen and lower back that are essential for proper posture and alignment.
- **Back support**
- **Good body mechanics**

Physical Therapy

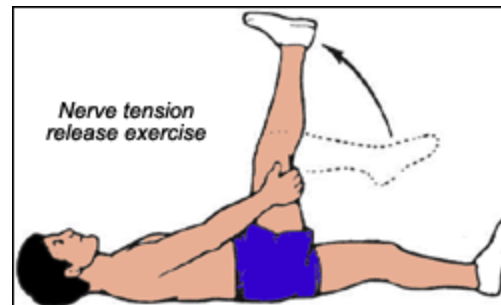
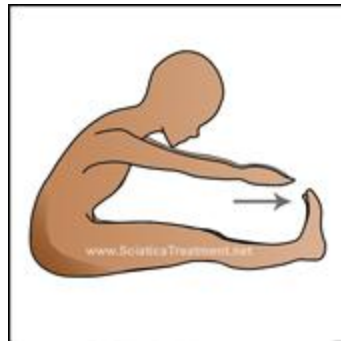
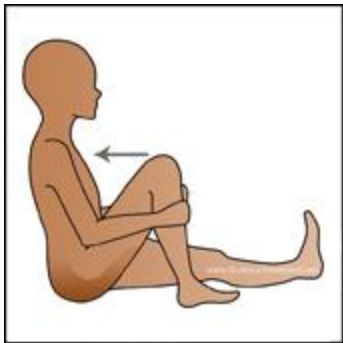
- **Exercise is usually better for relieving sciatic pain than bed rest.** Patients may rest for a day or two after their sciatic pain flares up, but after that time period, inactivity will usually make the pain worse.
- Without exercise and movement, the back muscles and spinal structures become weak and less able to support the back, that can lead to back injury and strain, which causes additional pain.
- Active exercise is important for the health of the spinal discs. Movement helps exchange nutrients and fluids within the discs to keep them healthy and prevent pressure on the sciatic nerve.

Exercises

- Incorporate strengthening, stretching and aerobic activities -they are central components of almost any sciatica treatment plan.
- **Stretching** is usually recommended to alleviate sciatic pain (Piriformis and hamstrings)
- **Strengthen** the spinal column and the supporting muscles, ligaments and tendons, the abdominal muscles, gluteus and hip muscles. (McKenzie exercises and Dynamic Lumbar Stabilization)

Piriformis/hamstring stretch

Figure 4 Stretch
Hold Stretch 30 seconds
2-3 times, each leg



BACK - 22 Pelvic Tilt:



Flatten back by tightening stomach muscles and buttocks.
Repeat 20 times per set. Do _____ sets per session.
Do 2 sessions per day.

HIP / KNEE - 48 Piriformis (Supine)



Cross legs, left on top. Gently pull other knee toward chest until stretch is felt in buttock/hip of top leg.
Hold 20 seconds.
Repeat 10 times per set. Do _____ sets per session.
Do 2 sessions per day.

BACK - 44 Backward Bend (Standing)

Arch backward to make hollow of back deeper.
Hold 10 seconds.



Repeat 20 times per set.
Do _____ sets per session.
Do 2 sessions per day.

BACK - 54 Lumbar Rotation Stretch



Lie on back with left knee drawn toward chest. Slowly bring bent leg across body until stretch is felt in lower back/hip area. Hold 20 seconds.
Repeat 10 times per set. Do _____ sets per session.
Do 2 sessions per day.

TRUNK STABILITY - 6 Bent Leg Lift (Hook-Lying)



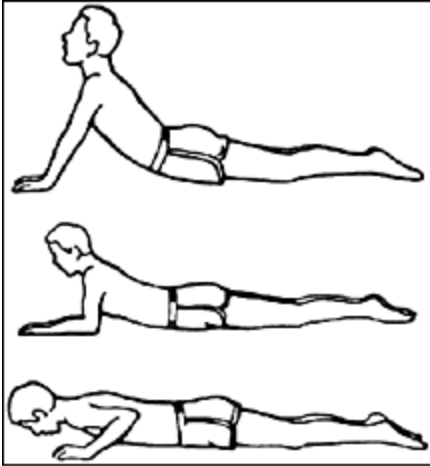
Tighten stomach and slowly raise right leg _____ inches from floor. Keep trunk rigid. Hold 20 seconds.
Repeat 10 times per set. Do _____ sets per session.
Do 2 sessions per day.

TRUNK STABILITY - 9 Bridging



Slowly raise buttocks from floor, keeping stomach tight.
Repeat 20 times per set. Do _____ sets per session.
Do 2 sessions per day.

McKenzie



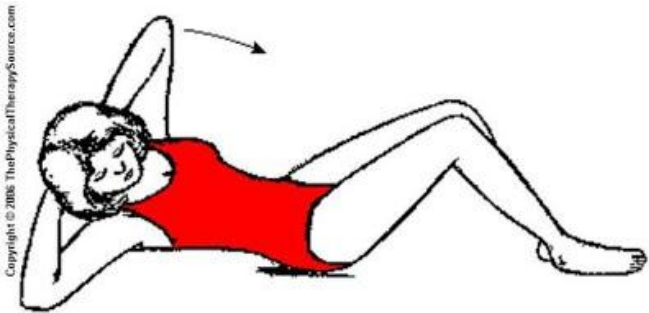
McKenzie extension exercise.



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Dynamic Lumbar Stabilization



Lie on your back on the floor with your knees bent. Lace your fingers behind your head and keep your elbows pointing outwards. Using your stomach muscles, curl up so that one shoulder blade raises up off of the floor and that elbow points to the opposite knee. Repeat.

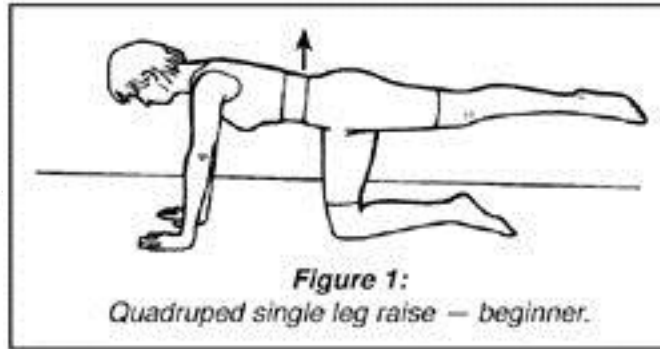
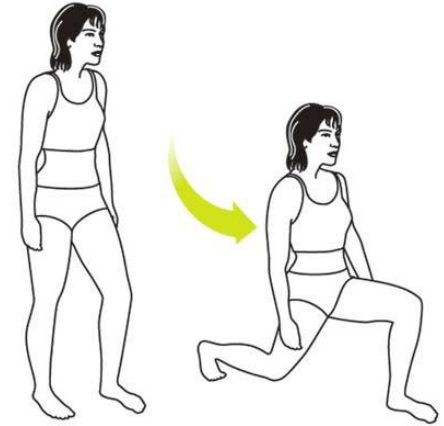
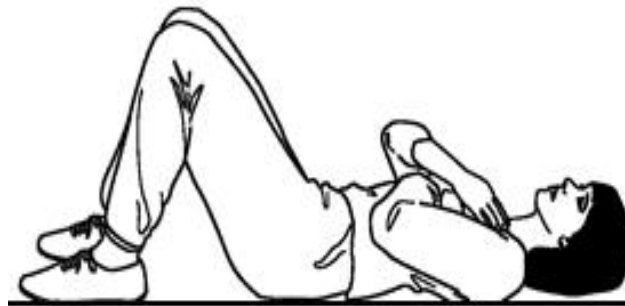


Figure 1:
Quadruped single leg raise — beginner.



Partial sit-up



Physical Therapy

- **Ultrasound**– decrease healing time and relieve stiff and inflexible muscles by improving the circulation and gently heating the muscles.
- **Massage** –deep and firm massage will not only help soothe those cramped muscles but can actually make the nerves and ligaments both relax.
- **Transcutaneous Electrical Nerve Stimulation** – In some cases using a very small and controlled amount of electricity can decrease the intensity and number of muscle spasms and can help release pain blocking endorphins, much like aerobics.



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