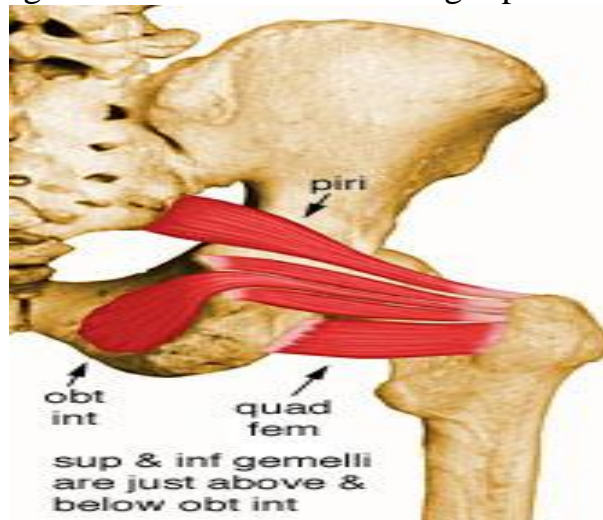


## Piriformis Syndrome

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Piriformis Syndrome is a condition in which the Piriformis Muscle irritates the sciatic nerve, causing pain in the buttock and referring pain along the course of the sciatic nerve down the leg. This referred pain, called "sciatica", often goes down the back of the thigh and into the lower leg. Low back pain is not a common symptom. Patients generally complain of pain deep in the buttock, which is made worse by sitting, climbing stairs, or performing squats.

The piriformis muscle assists in abducting and laterally rotating the thigh. In other words, while balancing on the left foot, move the right leg directly sideways away from the body and rotate the right leg so that the toes point towards the ceiling. This is the action of the right piriformis muscle.



### Anatomic Considerations

Anatomically, the piriformis muscle lies deep to the gluteal muscles. It originates from the sacral spine and attaches to the greater trochanter of the femur, which is the big, bony "bump" on the outside top of the thigh. The sciatic nerve usually passes underneath the piriformis muscle, but in approximately 15% of the population, it travels through the muscle. It is thought that acute or chronic injury causes swelling of the muscle and irritates the sciatic nerve, resulting in sciatica. Patients with an aberrant course of the nerve through the muscle are particularly predisposed to this condition.

## **Diagnosis**

Piriformis Syndrome is diagnosed primarily on the basis of symptoms and by physical exam. Some patients with this condition are initially thought to have lumbar nerve root inflammation or compression (radiculopathy), but lumbar spine MRI and other imaging studies are often normal. There are no other tests that accurately confirm the diagnosis, but X-rays, MRI, and nerve conduction testing may be helpful in excluding other conditions. Some of the other causes of sciatica-like symptoms include disease in the lumbar spine (e.g. disc herniation or spinal stenosis), chronic hamstring tendonitis, and fibrous adhesions of other muscles around the sciatic nerve.

## **Treatment**

### I. Physical Therapy and Stretching

Probably the most important aspect of care for this condition, physical therapy with a therapist experienced in the management of this condition is essential. Treatment modalities can include stretching, heat, ultrasound, electrical stimulation, and massage therapy.

### **Piriformis Muscle Stretching and Strengthening Exercises**

#### Exercise 1

Stretching the piriformis muscle often reproduces the pain. To perform the piriformis stretch, lie on your back, and flex the right hip and knee. Now, while grasping the right knee with your left hand, pull the knee towards your left shoulder. This adducts and flexes the hip. In this position, grasp just above the right ankle with the right hand, and rotate the ankle outwards. This applies internal rotation to the hip and completes the stretch. Another way to do this stretch is to stand on your left foot and place the right foot on a chair, such that the right knee and hip are flexed at about 90 degrees. Now, using the right hand, press the right knee across towards the left side of the body while keeping the ball of the right foot on the same spot on the chair.

#### Exercise 2

While standing lift the affected leg. Rotate the leg in so that your toes point towards the other leg. Hold ten seconds, repeat 10 times. This is easy to do, and should not aggravate symptoms.

### Exercise 3

After much progress has been made and the patient is relatively asymptomatic, one may try this third maneuver. Stand on a 6" platform or step near a rail. The injured leg should be the high side, the uninjured dangles. Bend the upper supported knee slightly, only 10 - 20 degrees and move your body forward. The hip of the upper leg should be higher than that of the lower leg. Move your body forward several inches and then try to move it backwards without touching the lower legs foot to the floor. This seems to strengthen and stretch many of the hip external rotators and abductors.

During running one should avoid hills and canted surfaces. Shorten stride and curtail speedwork. Also, try a brief period of rest for a few weeks, while continuing stretching and strengthening exercises.

## **II. Injection of the Piriformis Muscle**

The piriformis muscle can be injected with a steroid medication like cortisone to reduce inflammation and swelling about the sciatic nerve. This technique involves the fluoroscopic guidance of a small needle into and through the medial part of the muscle just lateral to the sacrum on the affected side. Reduction of inflammation in the muscle and about the sciatic nerve can result in significant pain relief. There are also anecdotal reports involving the use of Botox injection into the piriformis muscle with relative efficacy, but controlled, peer-reviewed studies on this technique are not yet available.