

Therapeutic Exercises for Piriformis Syndrome In Strength Routine

Li Jianjiao 14364009

Common Signs and Symptoms



A positive piriformis sign:

Ipsilateral external rotation of the lower extremity in a patient who is relaxed in the supine position.



Pricking feeling in the legs or the lower back.
Burning feeling in the buttocks or the lower back.
Numb sensation in legs, feet and buttocks.

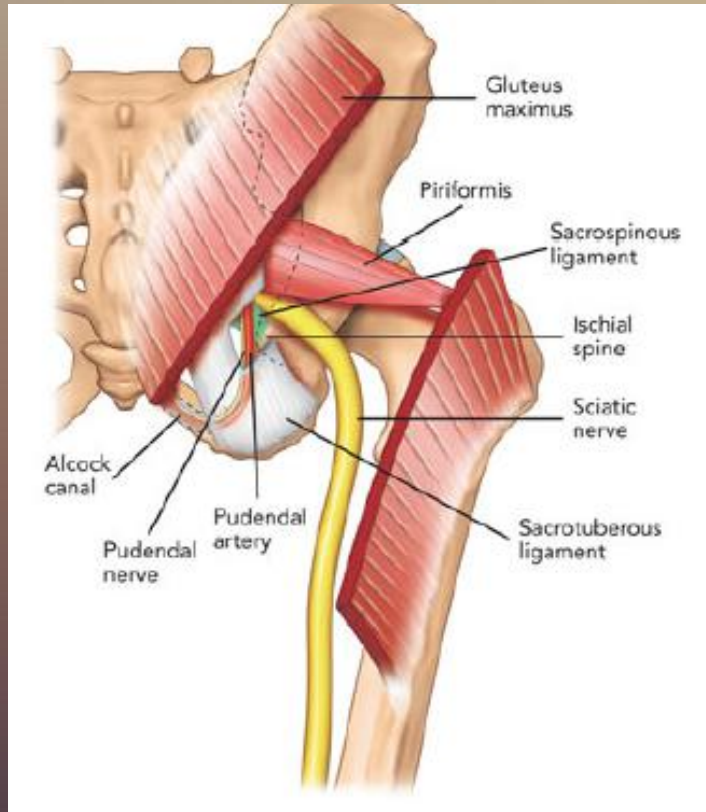


FAIR (flexion, adduction, and internal rotation) test:
Production of symptoms with passive stretching and activation of the piriformis muscle.

Anatomy and Mechanism

PART
ONE

Anatomy



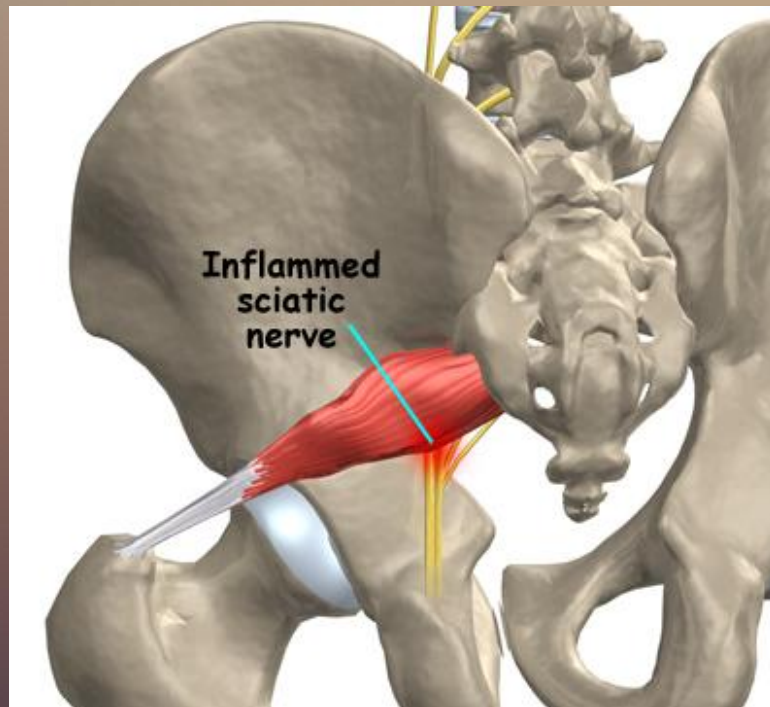
The piriformis muscle originates at the anterior surface of the sacrum, usually at the levels of vertebrae S2 through S4. The muscle attaches to the superior medial aspect of the greater trochanter via a round tendon .

The piriformis muscle acts as an external rotator, weak abductor, and weak flexor of the hip.

The sciatic nerve runs from lumbar and sacral areas all the way to the lower leg.

It runs under or pierce the piriformis.

Mechanism



The piriformis is shortened or in spasm, creating compression of the sciatic nerve.

The piriformis muscle may be functioning in an elongated position or subjected to high eccentric loads during functional activities secondary to weak agonist muscles, which may result in sciatic nerve compression or irritation.

Hip abductor weakness is an associated finding with piriformis syndrome.

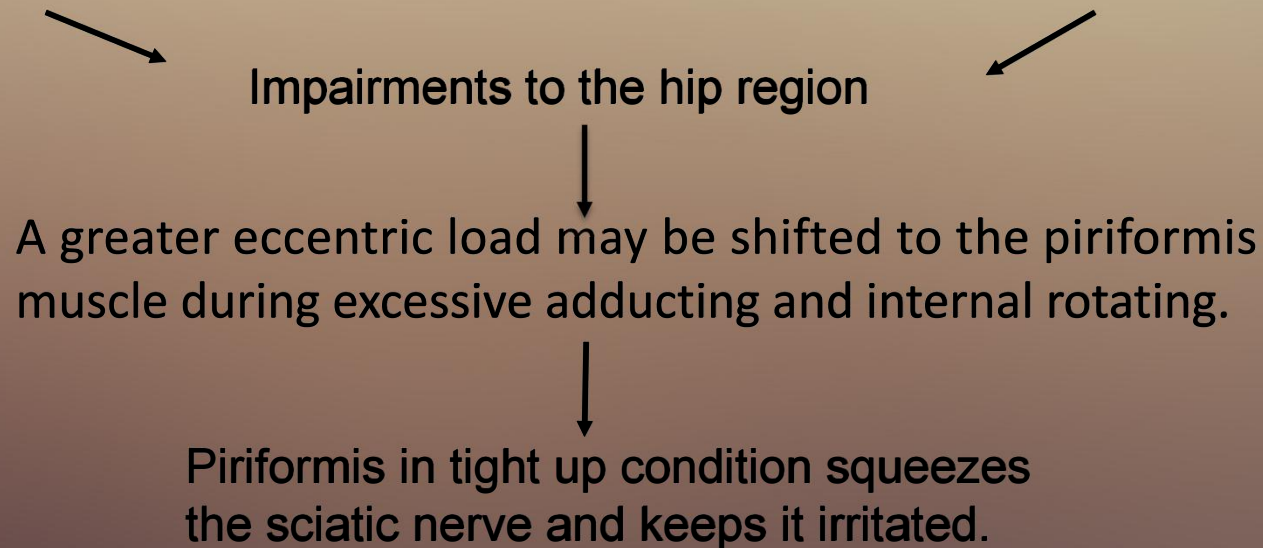
Therapeutic Exercises

PART
TWO

Therapeutic Theory—Abnormal Hip Kinematics

Excessive motions of hip adductors and internal rotators.

Weak motions of hip abductors and external rotators.



By strengthening weak motions of hip external rotators, abductors:

Decrease the demand on the piriformis through agonist activity.

Prevent hip motion that would cause increased strain on the piriformis.

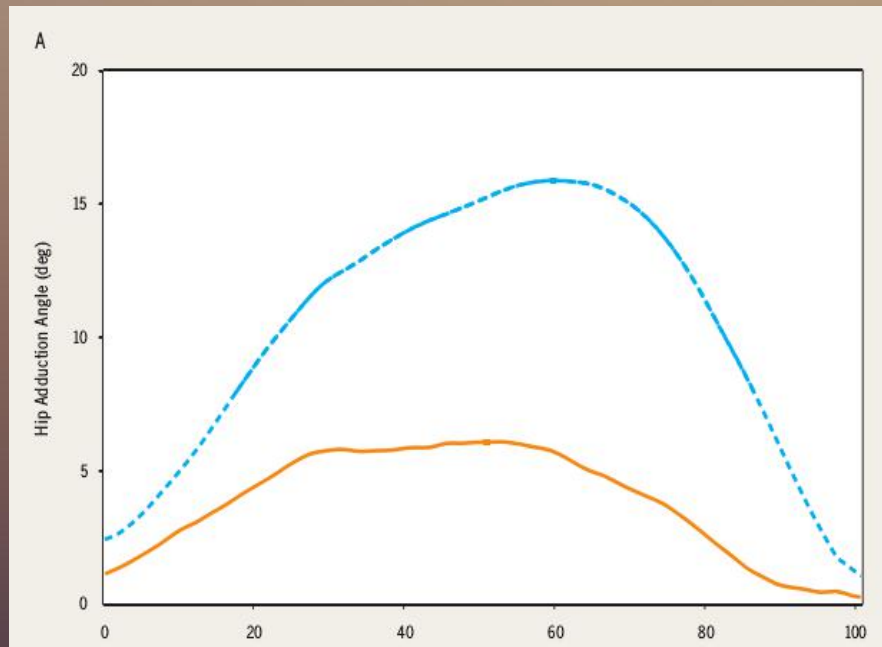
Biomechanical Evaluation—Step-down Test

Step-down Maneuver	Without Intervention	Hip-strapping Device
Impact of Intervention		Pulls the hip into external rotation
Dynamic Assessment	Contralateral pelvic drop, Increased hip adduction and internal rotation	Decreased hip adduction and internal rotation
Symptoms of Piriformis Syndrome	Increase	Decrease

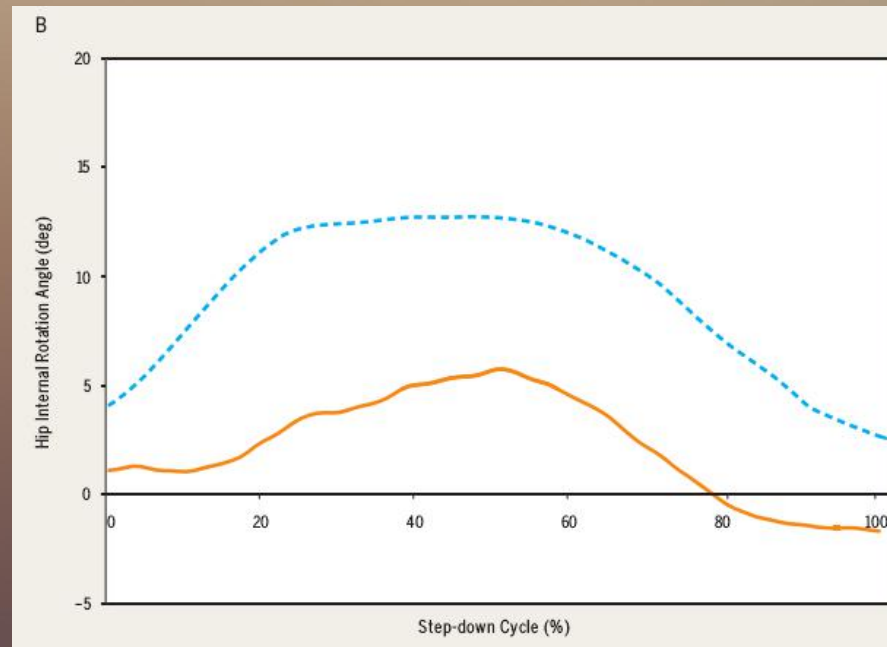
The step-down test involved the patient stepping down slowly from a 20.4-cm step using the affected limb over a 2 second period.

Biomechanical Evaluation

A preintervention and postintervention biomechanical evaluation was done at the Musculoskeletal Biomechanics Research Laboratory at the University of Southern California.



(A) hip adduction



(B) hip internal rotation

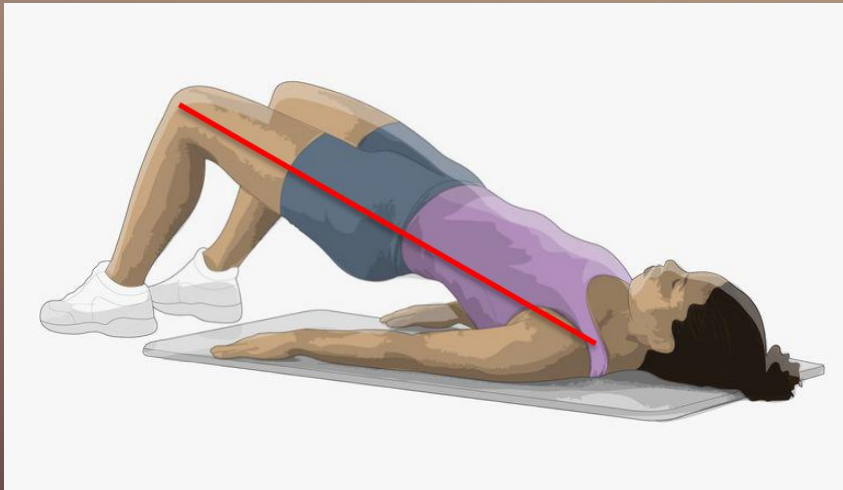
■ Pretreatment
■ Posttreatment

Given the information obtained during the examination, it is our impression that the patient demonstrated significant impairments specific to the hip region.

More specifically, our patient presented with weakness of the hip extensors, abductors, and external rotators.

Gluteus maximus and gluteus medius, which are evaluated in the examination, are largely responsible for the control of hip internal rotation and adduction during dynamic tasks.

Strengthening Exercises--Hip Bridge



Hip Bridge targets hip extensors, abductors and external rotators (Gluteus and Abdominal)

The key to doing this exercise for your piriformis syndrome is to keep your lower extremities and the trunk well-aligned.

Try not to allow either or both knees to knock in towards the other.

Stay in this position between 5 and 30 seconds. Then gently return to the position. Repeat the entire sequence 2-3 times.

Bilateral Bridges with Thera-band Resistance



Bilateral bridges with Thera-band resistance target hip extensors.

Elevate pelvis, while simultaneously abducting and externally rotating hips.

Not allow thighs to adduct and internally rotate while lowering the pelvis.

Perform 3 sets of 15 repetitions everyday.

Clams with Thera-band Resistance



Clams with Thera-band resistance target hip abductors and external rotators.

The sidelying clam exercise is performed without resistance until patient is able to perform 3 sets of 15 repetitions of the clam exercises without resistance.

Perform 3 sets of 15 repetitions everyday.

References

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Thanks For Your Listening !