

Piriformis technique

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There has been numerous articles written on the piriformis syndrome that nicely describe the anatomical considerations and variations, and the diagnostic criteria.¹⁻²⁻³ However, it is my observation that these articles do not fully describe all the necessary and clinically relevant treatment approaches.

There are some major distinguishing factors that should be taken into consideration that will enhance the treatment selection. These are as follows:

- a primary (1°) or secondary (2°) piriformis involvement
- b acute inflammatory or chronic fibrosis, contracted states
- c functional or structural implications

These distinguishing factors help to determine the following treatment applications:

- a direct or indirect muscle pressure techniques
- b muscle stretching or shortening techniques
- c use of ice to control inflammation or moist heat to promote increased circulation and healing
- d use of modalities such as interferential
- e other sites requiring attention, ie. sacroiliac, hip, fibular head, calcaneous and cuboid

Like the psoas muscle,⁴ there are times when this muscle (piriformis) should not be stretched. For example, a primary acute piriformis syndrome should not have direct pressure applied to the muscle followed by stretching. Approaches like this can increase the inflammatory response, further entrapping the sciatic nerve. Stretching at this point, especially using a lateral recumbent position utilizing a long lever force (leg see Figure 1), can further damage the sciatic nerve, increasing the symptoms. Techniques like this one are indicated in a chronic secondary piriformis syndrome, and is usually followed by hip and sacroiliac manipulation.

In the acute phase, the muscle shortening technique is better suited (see Figure 2), with indirect pressure techniques. In the chronic phase where stretching is indicated (see Figure 3), direct or indirect pressure techniques can be applied.

Indirect pressure techniques are directed towards muscle relaxation through reflex mechanisms ie. pressure over the piriformis tendon, sacrotuberous and/or posterior sacroiliac ligaments. Direct pressure over the entrapment site in chronic cases helps to break down fibrositic adhesions. Ice or interferential current applied immediately after helps to reduce the inflammatory response associated with this technique.

When the SLR is positive 50° or less, the prone techniques are better suited. Whereas, if the entrapment has been reduced such as the SLR is greater than 50°, then the lateral recumbent technique is indicated. It should also be noted that a patient with recurring piriformis syndrome should be considered structural and therefore is better treated with the prone techniques. These indications and applications will help to reduce the incidence of further injuring the entrapped sciatic nerve.



Figure 1: This figure demonstrates a lateral recumbent position of the patient with the involved side up. The doctor applies long lever pressure on the upper flexed leg and the patient is stabilized by the indifferent hand holding the folded arms. The elbow is placed either directly or indirectly as indicated and held for anywhere up to 30 seconds. It can be followed by a thrust, although it is usually not preferable. Adjusting the hip and sacroiliac joint is often indicated following this technique.



Figure 2: This figure demonstrates a prone shortening technique for an acute piriformis syndrome. Notice the external rotation of the femur using the tibia with knee flexion as a lever. The pressure application is preferably done by the thumb, although the elbow at times can be used. Pressure can be applied indirectly as in a primary or secondary acute involvement or directly in a secondary sub acute case. Care is taken to prevent increasing the inflammatory response. Ice and/or interferential current can be used.

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Figure 3: This figure demonstrates a prone stretching technique for a chronic piriformis syndrome. Notice the internal rotation of the femur using the tibia with knee flexion as a lever. The pressure application is preferably done by the thumb, although the elbow at times can be used. The pressure is usually over the involved sight, directed towards breaking down any fibrous adhesions. This prone position is preferred over the lateral recumbent posture if the SLR is under 50° or if structural variations are suspected. Moist heat applied prior helps to increase vascularity and relax the region, whereas ice and/or interferential current applied after helps to control the inflammatory response to breaking down the fibrous adhesions.

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