

## Piriformis Syndrome

### **What is piriformis syndrome?**

Piriformis syndrome is a relatively uncommon cause of buttock pain and sciatica. The piriformis muscle lies deep within the buttock originating from the sacrum (tail bone) and attaching to the femur (thigh bone)

The piriformis muscle is responsible for rotating and stabilizing the hip joint. The sciatic nerve passes directly beneath or occasionally through the piriformis muscle. Due to this anatomic relationship, the sciatic nerve can be compressed due to tightness in the piriformis muscle. When this occurs the condition is known as piriformis syndrome.

### **Causes of piriformis syndrome**

Piriformis syndrome typically occurs due to tightness of the piriformis muscle. This may occur following piriformis injury, overuse of the piriformis, or due to repetitive strain or trauma. Piriformis syndrome is more common in people who sit badly, curled up on the sofa, crossing legs or twisting while sitting at computer, and prolonged sitting positions. Some sports or activities requiring repeated use of the piriformis muscle. These activities may include: running (especially changing direction), sprinting, jumping, squatting or lunging.

### **Signs and symptoms of piriformis syndrome**

Patients with this condition typically experience a pain or ache that is felt deep within the buttock. Pain may also radiate into the back of the thigh, calf, ankle or foot.

Patients with piriformis syndrome typically experience an increase in pain when placing the piriformis muscle on stretch (i.e. taking your knee towards your opposite shoulder) or during forceful piriformis muscle contraction (e.g. when running and changing directions). Other activities that may aggravate symptoms include: sitting, climbing stairs, squatting and lunging. In addition, patients may also have reduced hip range of movement and experience tenderness in the piriformis muscle on firm palpation.

### **Diagnosis of piriformis syndrome**

A thorough subjective and objective examination from a physiotherapist is usually sufficient to diagnose piriformis syndrome. Occasionally, further investigations such as an MRI scan or Ultrasound may be required, to assist diagnosis.

### **Treatment for piriformis syndrome**

Most patients with this condition heal well with appropriate physiotherapy. This often involves electrotherapy and/or acupuncture as well as massage and stretches to the piriformis muscle.

The success rate of treatment for patients with this condition is largely dictated by patient compliance. One of the key components is that the patient rests sufficiently from ANY activity that increases their pain until they are symptom free. This allows the body to begin the healing process in the absence of further tissue damage. Once the patient can perform these activities pain-free a gradual return to these activities is indicated provided there is no increase in symptoms.

Ignoring symptoms or adopting a 'no pain, no gain' attitude is likely to lead to the problem becoming chronic. Immediate, appropriate treatment in all patients with this condition is essential to ensure a speedy recovery. Once the condition is chronic, healing slows significantly resulting in markedly increased recovery times.

A graduated flexibility and strengthening program guided by a physiotherapist is essential to recondition the piriformis muscle. This is essential to reduce the likelihood of injury recurrence in patients with piriformis syndrome. Rehabilitation should focus on restoring normal piriformis flexibility with appropriate stretches and soft tissue techniques to reduce compression of the sciatic nerve. Careful assessment by the physiotherapist to determine which factors have contributed to the development of the condition, with subsequent correction of these factors is essential to ensure an optimal outcome.

In the final stages of rehabilitation, a gradual return to sport or activity is indicated as guided by a physiotherapist. This can commence once symptoms have resolved and adequate strength and flexibility of the piriformis muscle has been obtained.

### **Prognosis of piriformis syndrome**

With early diagnosis and appropriate management, most patients with this condition can usually recover in days to weeks. In severe or chronic cases of piriformis syndrome, recovery may take significantly longer.

### **Contributing factors to the development of piriformis syndrome**

There are several factors which can predispose patients to developing this condition. These need to be assessed and corrected with direction from a physiotherapist. Some of these factors include:

- muscle tightness (particularly the piriformis and adductor muscles)
- poor hip joint flexibility
- muscle weakness (particularly the piriformis and gluteals)
- lower back injury
- excessive or inappropriate training
- poor biomechanics
- inadequate warm up
- poor core stability
- muscle imbalances
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### **Physiotherapy for piriformis syndrome**

Physiotherapy for patients with this condition is vital to hasten the healing process, ensure an optimal outcome and reduce the likelihood of injury recurrence. Treatment may comprise:

- soft tissue massage
- electrotherapy (e.g. ultrasound)
- stretches
- dry needling
- muscle energy techniques
- joint mobilization
- neural mobilization
- ice or heat treatment
- education
- biomechanical correction
- progressive exercises to improve strength, flexibility and core stability

- activity modification advice
- technique correction
- devising and monitoring a return to sport or activity plan
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### **Other intervention for piriformis syndrome**

Despite appropriate physiotherapy management, some patients with this condition do not improve adequately. When this occurs, the treating physiotherapist or doctor can advise on the best course of management. This may include investigations such as an ultrasound, CT scan or MRI, pharmaceutical intervention, corticosteroid injection, or referral to appropriate medical authorities who can advise on any intervention that may be appropriate to improve the condition. In very rare cases of severe or recalcitrant piriformis syndrome, surgical intervention may be considered.

### **Exercises for piriformis syndrome**

The following exercises are commonly prescribed to patients with this condition. You should discuss the suitability of these exercises with your physiotherapist prior to beginning them. Generally, they should be performed 3 times daily and only provided they do not cause or increase symptoms.

#### **Piriformis Stretch Supine**

Begin lying on your back (figure 2). Using your hands, take your knee towards your opposite shoulder until you feel a stretch in the buttocks or front of your hip. Hold for 15 seconds and repeat 4 times at a mild to moderate stretch pain-free.



**Figure 2** – Piriformis Stretch (right leg)

#### **Piriformis Stretch Prone**

Begin this stretch on your hands and knees (figure 3). Place the leg to be stretched under your stomach / chest, with your knee in front of your hips and your foot to the side as demonstrated. Gently lower your upper body towards the ground, keeping your back leg straight, until you feel a stretch in the buttock. Hold for 15 seconds and repeat 4 times at a mild to moderate stretch pain-free.



**Figure 3** –

If you suffer from buttock pain and referred pain into the leg, get expert help from us by contacting +442866328200 or email [info@lindaburke.co.uk](mailto:info@lindaburke.co.uk)