

# How to assess & treat posterior hip pain

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There are a multitude of conditions that can present with pain in the posterior hip region. The most common cause of posterior hip pain is referral from the lumbar spine. A detailed subjective history will help guide diagnosis and should identify the following:

- History of trauma
- Red flag questions
- Neurological symptoms – pins and needles, numbness
- Presence early morning stiffness – SIJ or inflammatory condition
- Location of pain – SIJ region, greater sciatic notch, ischium or greater trochanter
- Associated with lower back or posterior thigh pain
- Quality of pain – diffuse/hard to localise or specific and easy to localise
- Aggravating factors – sitting, running, walking, lumbar spine movements, rotation, specific ADLs such as cycling
- Presence of gynaecological conditions as they can mimic pain in this region
- History of anxiety, depression and other psychosocial factors

## Layer concept

The layer concept is useful in simplifying the diagnosis of pathology around the posterior hip. Initially the clinician should screen for red flags and systemic factors, and then screen for pain from referred sources such as the SIJ, lumbar spine or hip. In the absence of red flags or referred pain then assessment should focus on the presence of local pathology.

## Gluteal tendinopathy

In clinical practice this is a common condition. Previously the trochanteric bursa was thought to be responsible for pain on the lateral hip, however a study by Long et al. (2013) has shown that only 15-20% of patients with lateral hip pain have bursitis. They concluded that the cause of lateral hip pain was a combination of pathology involving the gluteus medius and minimus as well as the iliotibial band. It is unusual for a patient to present with bursitis in isolation as it normally coexists with tendinopathy.

### Patient profile

Systemic factors including female gender and high BMI increase the risk of developing gluteal tendinopathy. This condition is more common in females with a ratio of 4:1. Local factors such as excessive hip adduction leading to compression, weakness in hip abductors and increased stepping or plyometric load.

There are 3 clinical subgroups for this condition;

- Peri/post menopausal women aged 40-60
- Young female runner with a crossover gait and excessive hip adduction
- Combined presentation with hip joint pathology (OA/FAI)

### Presentation

Due to the location and potential for symptoms to radiate this condition is often misdiagnosed as sciatica. The area of pain is often localised around the greater trochanter but it can also refer into the posterolateral hip region and into the groin. The pain may also radiate down the lateral thigh but it does not refer below the knee.

The common aggravating factors are side lying at night, walking, stairs, cross legged positions and getting in and out of a car. The presence of night pain in these patients may be due to the direct compression of the tendon in sleeping positions but also due to a local inflammatory response around the bursa. Patients report significant improvement in night symptoms following injection into the region suggesting an inflammatory driver for

night pain. Injections are not routinely recommended for gluteal tendinopathy as they have a negative long term effect on the tendons.

## Assessment

1. Single leg stand – presence of pain within 30 seconds
2. Palpation tenderness
3. De-rotation test – FADER position with resisted internal rotation
4. Resisted hip abduction in side lying
5. Screen for hip OA – capsular pattern and difficulty putting socks on

Grimaldi et al. (2017) compared these clinical tests with MRI findings and concluded that patients with lateral hip pain who are not palpably tender over the greater trochanter are unlikely to have gluteal tendinopathy.

## Treatment

Educate the patient about load management and avoiding excessive hip adduction. This may include advice about sleeping with a pillow between the knees, avoiding laying on affected side, the use of ice and a topical anti-inflammatory gel before bed. Plyometric training, hill walking and stair climbing should be limited in the initial stages to allow symptoms to settle. Address the patients' expectations from the start as it may take up to 4-6 months of rehabilitation.

A graded loading program similar to other lower limb tendinopathies is required after symptoms settle. Provide the patient with clear guidelines for pain when performing exercises. Pain when loading the structure is acceptable if below 5/10 VAS and if there is no 24 hour flare up.

Loading progression:

1. *Isometric loading* - Isometric hip abduction in supine with theraband around knees (15-20 secs)
2. *Isotonic loading in non-compressive position* - Bridging with theraband progressing to single leg, hip hikes, side lying abduction progressing with resistance, hip abduction machine, crab walks
3. *Isotonic loading in compressive position* - Hip thrusters, step ups, contralateral walking lunge
4. *Plyometric exercises*

The contralateral walking lunge exercise was assessed in a study by Stastny et al. (2015). They found that holding a dumbbell in the opposite hand when performing a split squat or lunge increased gluteus medius activation by 90% as it has to work to prevent hip adduction. The use of a dumbbell in the opposite hand can be combined with squats, reverse lunge and step up exercises in the later stages of rehabilitation.

Running analysis should be performed in patients wanting to return to running. Assess for the presence of excessive hip adduction, crossover gait and lack of knee window. Specific cues to improve running gait can be used with the patient. A couch to 5km training program can be used for a graded return to running. Initially hill and speed work should be avoided, instead focusing on increasing volume for 4-6 weeks. Patients who are unable to run due to pain should be advised to cross train to maintain cardiovascular fitness.

## Deep gluteal syndrome

### Presentation

Deep gluteal syndrome describes sciatic symptoms which are caused by entrapment or irritation within the gluteal space rather than discogenic lumbar spine pathology. Historically this has been termed piriformis syndrome however deep gluteal syndrome is more appropriate as there are many structures that could be involved not just the piriformis.

### Profile

This condition is common in sedentary females, over the age of 40. Other pathologies that produce pain in this area, such as proximal hamstring tendinopathy, normally present in active populations. Onset can be insidious, or occur following a fall or after bending. Suspicion of deep gluteal syndrome should be high in patients who have difficulty sitting for long periods and have failed previous spinal rehabilitation.

## Presentation

The pain presents around the greater sciatic notch, medial of the greater trochanter and proximal to the ischial tuberosity. This may be accompanied with burning or cramping in the posterior thigh region and patients may report tingling sensations and motor weakness. Patients report severe pain with sitting and find it difficult sitting for more than 30 minutes.

## Assessment

The presentation is similar to lumbar spine pathology. If lumbar spine assessment including active movement, SLR and slump do not reproduce pain then it suggests an entrapment at the pelvic level rather than the spinal level. Key objective tests include the active piriformis test and seated piriformis test which in combination have a sensitivity of 91%.

## Treatment

1. Education – advise the patient to reduce sitting time and use cushions on hard surfaces. Male patients should avoid putting their wallet in their back pocket.
2. Sciatic flossing, neurodynamic mobilisations and hands on treatment to relieve local hypertonicity
3. Strengthening of the hip abductors and external rotators

## Webinar

As mentioned in this episode Benoy will be hosting a webinar for clinical edge where he will discuss the assessment and treatment of deep gluteal syndrome in more detail. His webinar will also include:

1. Differential diagnosis of posterior hip pain
2. Key red flags questions
3. Management of proximal hamstring avulsion tears

## Links associated with this episode:

[Benoy Matthew twitter - @function2fitnes](#)

[Benoy Matthew courses](#)

## Articles associated with this episode:

[Clinical Edge research review – How can you diagnose gluteal tendinopathy?](#)

[Franklyn-Miller et al. \(2009\). The gluteal triangle: a clinical patho-anatomical approach to the diagnosis of gluteal pain in athletes.](#)

[Grimaldi et al. \(2017\). Utility of clinical tests to diagnose MRI-confirmed gluteal tendinopathy in patients presenting with lateral hip pain.](#)

[Grimaldi & Fearon \(2015\). Gluteal tendinopathy: integrating pathomechanics and clinical features in management.](#)

[Long et al. \(2013\). Sonography of greater trochanteric pain syndrome and the rarity of primary bursitis.](#)

[Martin et al. \(2016\). Deep gluteal syndrome.](#)

[Michel et al. \(2013\). Piriformis muscle syndrome: Diagnostic criteria and treatment of a mono centric series of 250 patients.](#)

[Stastny et al. \(2015\). Does the dumbbell carrying position change the muscle activity in split squats and walking lunges?](#)

## Previous episodes of interest:

[PE009 – Lateral hip pain with Dr Alison Grimaldi](#)

[PE011 – Hamstring tendiopathy with Dr Alison Grimaldi](#)

## [PE046 – Proximal hamstring tendinopathy with Tom Goom](#)