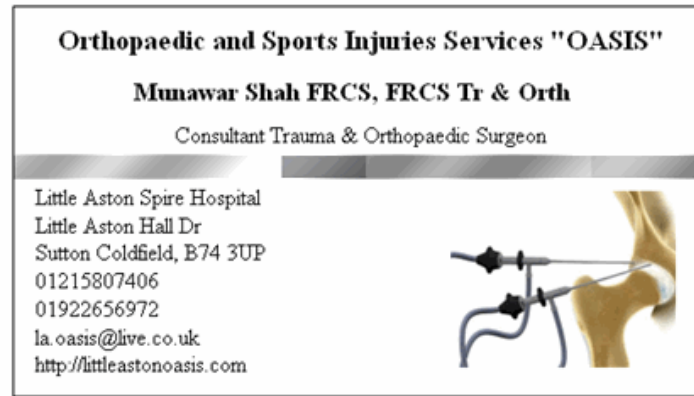


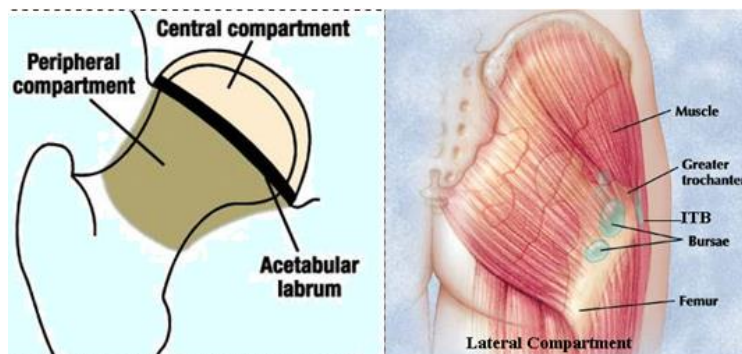


The Hip Joint has 3 compartments

Central

Peripheral

Lateral



The acetabular labrum is the dividing line between the central and Peripheral compartments in Hip Arthroscopy

The central compartment is the weight bearing part of the hip joint, with the corresponding joint surfaces of acetabulum and femoral head.

The peripheral compartment comprises the non-weight bearing part of the femoral head and the femoral neck up to capsule insertion

The lateral part comprises of the Peri Trochanteric space and its content

Symptomatic Snapping Hip

A painful condition known as snapping hip may prevent athletes from attaining peak performance, and it presents diagnostic and treatment challenges to the sports medicine physician as well.

Three types of snapping hip (external, internal, and intra-articular) are known, and each has a distinct pathomechanic cause, specific symptoms, and classic clinical presentation.

History and physical exam are coupled with a variety of imaging modalities to help distinguish the three types.

Nonoperative approaches are the mainstay of treatment, but, if unsuccessful, operative treatments also achieve good results. Patients may resume their activities when pain subsides.

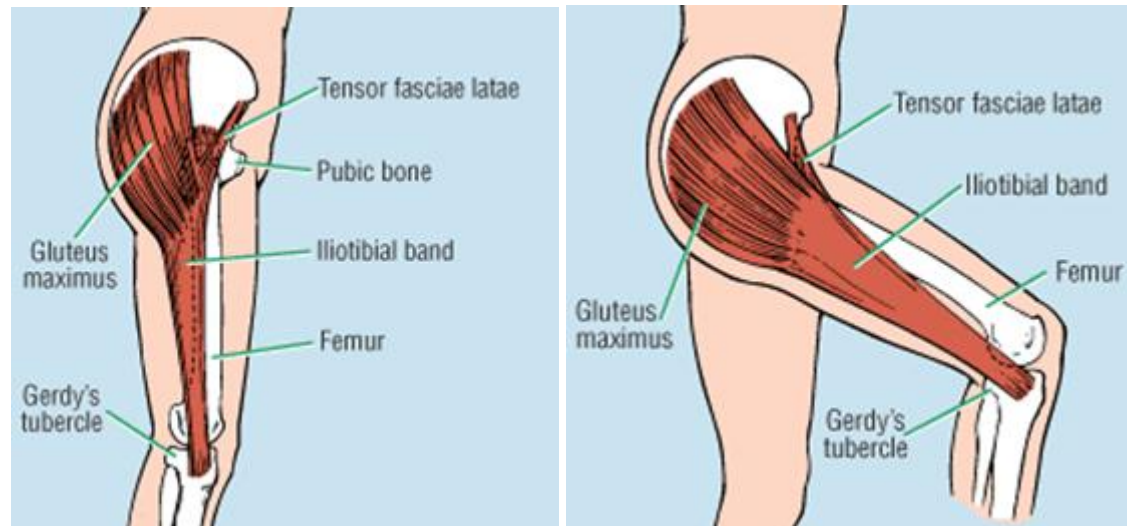
Benign, painless snapping in the hip is common in the general population. Symptomatic snapping hip with debilitating pain and weakness is often seen in participants of activities such as ballet and running hurdles. The repetitive nature of many sports may prevent athletes who have painful symptoms from performing at their highest level or prevent them from participating altogether. The clinician's goal is to determine the cause and treat active patients who have symptomatic snapping hip so that they may return to peak performance in their athletic activities.

Anatomy and Pathomechanics

The cause of symptomatic snapping hip may be external, internal, or intra-articular.

External type.

The Iliotibial band (ITB) is the usual culprit in the external type of snapping hip. The ITB originates from the gluteus maximus and the tensor fasciae latae. Most of the ITB inserts at the proximal lateral aspect of the tibia at Gerdy's tubercle, and some fibers insert on the lateral aspect of the distal knee, including the lateral femoral epicondyle and lateral patella. A large bursa overlying the greater trochanter separates the trochanter and the ITB. In general, the ITB is under tension throughout the range of hip motion. When the hip is extended, the band lies posterior to the greater trochanter. It moves anteriorly over the trochanter when the hip is flexed if the thickened posterior aspect of the ITB or the anterior aspect of the gluteus maximus rubs over the greater trochanter, a snapping sensation may be felt. The greater Trochanteric bursa may also become inflamed and painful.

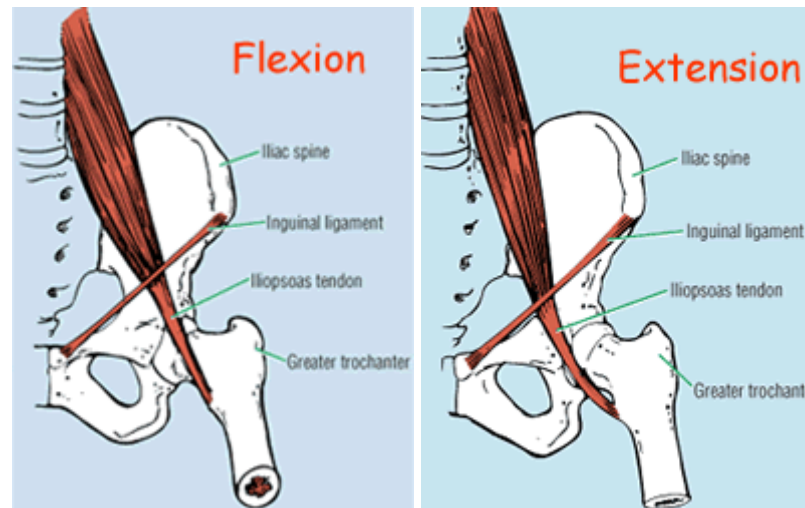


Other proposed causes of external snapping hip relate to alteration of hip mechanics.

Decreased angulations of the femoral neck (coxa vara) or fibrotic scar tissue after total hip replacement, narrower bi-iliac width or increased distance between the greater trochanters, prominent greater trochanters, and surgery for anterolateral knee instability are all thought to alter the normal relationship between the ITB and the greater trochanter, thereby causing the characteristic external snapping sensation. Muscle fibrosis after intramuscular injection may also cause snapping.

Internal type.

Pathology related to the iliopsoas tendon is most often seen as the source of the internal snapping hip. The muscle is a confluence of the iliacus, which originates mainly from the inner table of the Ilium and the sacral ala, and the Psoas, which originates from the vertebrae and intervertebral disks of T-12 to L-5. Most of the iliopsoas muscle inserts on the lesser trochanter of the femur. The tendinous portion of the muscle passes through the groove on the bony pelvis that is bordered laterally by the anterior inferior iliac spine and medially by the iliopectineal eminence. An anteromedial bony prominence lies adjacent to the lesser trochanter, over which the tendinous portion of the iliopsoas passes before its insertion. The iliopsoas bursa lies over the anterior hip capsule and deep to the iliopsoas tendon. When the hip is flexed, abducted, and externally rotated, the tendinous portion of the iliopsoas lies lateral to the anterior aspect of the femoral head and hip capsule. It passes over the femoral head and hip capsule to a more medial position with hip extension, adduction, and internal rotation, thereby causing snapping.



Another cause of internal snapping involves the iliopsoas tendon snapping over the iliopectineal eminence and the bony ridge of the lesser trochanter. Iliofemoral ligaments moving over the anterior hip capsule and the origin of the long head of the biceps moving over the ischium have also been described as potential sites for snapping. The iliopsoas bursa may also become inflamed and lead to painful snapping.

Intra-articular type.

A variety of intracapsular lesions may produce snapping, including loose bodies that can occasionally settle in the acetabular fovea or synovial folds and cause intermittent snapping symptoms. Torn acetabular labra, especially the posterosuperior portion that is more prone to damage from mechanical stress, can be associated with snapping.

Labral tears may also contribute to the risk of acetabular dysplasia caused by mechanical deformation of the acetabulum. Other origins of snapping include idiopathic recurrent subluxation of the hip, habitual hip dislocation in children, and synovial chondromatosis.



Symptoms

The cause and type of a patient's snapping hip may be found in the history. Patients who have the intra-articular type may report a sudden onset of snapping or clicking after trauma. Although trauma may eventually incite the internal or external types of snapping hip, the onset is usually more gradual and the trauma tends to be more minor.

For the external type, the location described by patients tends to be lateral to the greater trochanter; for the internal type, the location is anterior to the hip or in the groin. Patients may also report movements that reproduce snapping, especially dancers and hurdlers who tend to repeat particular motions. Dancers often have a painful internal type snapping hip and report. Exacerbation of symptoms during repetitive active hip flexion, external rotation, and abduction) while their hips are turned out. These repetitive movements place stress and torque on the iliopsoas tendon as it passes over the iliopectineal eminence and/or the femoral head and capsule. The history may also reveal other potential mechanical or anatomic causes of snapping hip, such as hip or knee surgery.

Clinical

External or internal snapping hip is usually a clinical diagnosis. The causes of snapping hip are directly related to Pathomechanics seen on physical exam. External snapping may be elicited by placing the patient in a lateral position (side lying) on the examining table with the unaffected side down. The affected hip is then passively flexed from extension (0° to 90°) and then returned to extension. The leg should be maintained in neutral position for abduction/ adduction and internal/external rotation while this test is performed. A palpable and audible snapping will be recreated as the ITB passes from the posterior to the anterior plane of the greater trochanter. Snapping may be prevented if the examiner's hand places

enough force on the greater trochanter or if the patient walks with the limb externally rotated. Pain associated with the provocative testing is often a symptom of Trochanteric bursitis.



The physical exam for internal snapping is done by placing the patient supine on the examining table and passively extending, internally rotating, and adducting a flexed, externally rotated, and abducted hip. Snapping will be recreated as the iliopsoas tendon passes from lateral to medial over the femoral head and joint capsule or other anatomic structures.



As with external snapping, the examiner will note a palpable and audible snapping over the anterior femoral head. Snapping may be prevented by placing significant pressure on the iliopsoas tendon and anterior hip. Iliopsoas syndrome, characterized by internal snapping hip, iliopsoas tendinitis, and bursitis, may be evaluated with the iliopsoas test. The test is positive if the patient has pain or weakness when the hip is flexed against resistance in abduction and external rotation. In some patients who have both the external and internal types, using other movements or examining the standing patient may be required to elicit snapping.

Intra-articular loose bodies may become more symptomatic if the patient loads the hip while standing.

Imaging

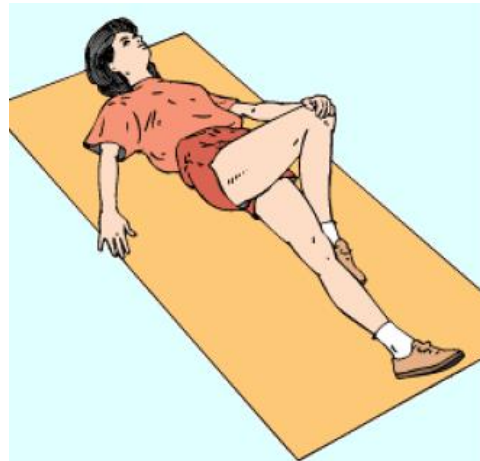
Plain radiographs are part of the routine evaluation for hip complaints. If the diagnosis remains unclear, or if intra-articular pathology is suspected, other techniques, such as magnetic resonance imaging (MRI), computed tomography (CT), or dynamic ultrasound, may augment the studies. Hip arthroscopy although invasive, may be indicated if the diagnosis remains unclear despite clinical findings and other diagnostic tests.

Conservative and Surgical Treatments

Most hip snapping is benign and painless and does not require treatment. Patients who have symptomatic snapping that is troublesome tend to seek medical help. Nonoperative management should be attempted first, including rest, avoiding movements that provoke snapping, oral nonsteroidal anti-inflammatory medication, and physical therapy.

Stretching exercises.

For patients who have external snapping, physical therapy should include stretching of the ITB. In one exercise, the involved leg is crossed over the unaffected leg in a standing position. The patient then leans to the uninvolved side until a stretch is felt on the outside of the affected hip. Another exercise stretches the ITB by having the patient lie or sits on the floor and bends and raises the affected leg (flexed knee) over the opposite leg for patients who have internal snapping, hip flexor stretching and strengthening, pelvic and peripelvic mobilization, and alignment exercises are used to help ease pain.

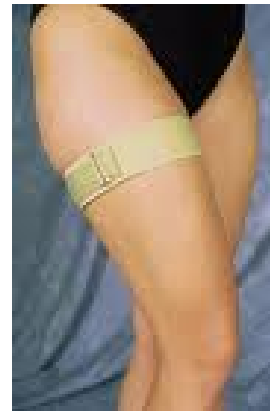


Type	Cause	Diagnostic Test	Imaging	Treatment
External	Thickened posterior aspect of the ITB or anterior gluteus maximus rubs over greater trochanter as hip is extended	Passive flexion of an extended hip may elicit a palpable and audible snap with pain over the greater trochanter	Dynamic ultrasonography	Activity modification, ITB stretching, pain medication (eg, NSAIDs), steroid injection, surgery
Internal	Iliopsoas tendon rubs over anterior hip capsule or iliopectineal eminence	Passive extension, internal rotation, and adduction of a flexed, externally rotated, and abducted hip may elicit a palpable and audible snap with pain in the anterior hip or groin	Static and dynamic ultrasonography, tenography, CT, bursography,	Activity modification, hip flexor stretching and strengthening, pelvic mobilization, alignment exercises, pain medication (eg, NSAIDs), steroid injection, surgery
Intra-articular	Loose bodies, torn acetabular labrum, recurrent subluxation, habitual hip dislocation in children, or synovial chondromatosis	Depends on cause	Plain x-rays, ultrasonography, MRI or CT	Depends on cause

ITB = iliotibial band; NSAIDs = nonsteroidal anti-inflammatory drugs; CT = computed tomography; MRI = magnetic resonance imaging

Pelvic tilt should be addressed, because an increased anterior tilt may cause subtle tightening of the hip flexor tendons. A pelvic tilt exercise can be performed by lying supine with the knees flexed and the feet flat on the floor. The patient tightens the abdominal muscles and squeezes the buttock muscles together, allowing the lower back to push into the floor. These exercises should be done with care to avoid repetitive snapping.

Biofeedback may also help to teach the patient how to avoid repetitive hip snapping. Local corticosteroid injection of the bursa may relieve pain and may help if other Nonoperative management fails. With these measures, most patients find relief and are able to return to activities. Nonoperative management of internal snapping hip is usually successful, but if it is not, surgery may be needed.



Operative treatment.

Surgery is sometimes indicated for an external snapping hip. Multiple techniques have been suggested, from resection of a portion of the ITB and the Trochanteric bursa, to lengthening the band and transposing it anterior to the greater trochanter. The goal of surgery is either to alter the anatomy and mechanics of the ITB so that it remains anterior to the greater trochanter or to lessen the tension of the ITB so that it does not snap over the greater trochanter. Surgery has decreased pain and snapping in a number of studies. Despite these outcomes, surgery is not without risk. The most commonly reported complications have been recurrence of pain and snapping. Although several approaches to operative treatment are used for internal snapping, the general goal is to lengthen or release the iliopsoas tendon to decrease snapping and pain. These can all be done **arthroscopically** now.

Despite relief from pain and snapping, some surgical complications can be serious. Recurrence of snapping, weakness, and numbness were the most common complications of surgery for internal snapping hip, and some patients required further surgery. Intra-articular snapping hip can result from a variety of lesions. Thus, whether treatment is Nonoperative or operative depends largely on the pathology. Hip arthroscopy may be both diagnostic and therapeutic and can be used to debride a torn acetabular labrum or to remove small loose bodies. An arthrotomy or other open procedures may be warranted for patients who have synovial chondromatosis, large loose bodies, or instability.

If you are interested in making an appointment to discuss a treatment, please click here to [contact us](#), or telephone 01215807406

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