

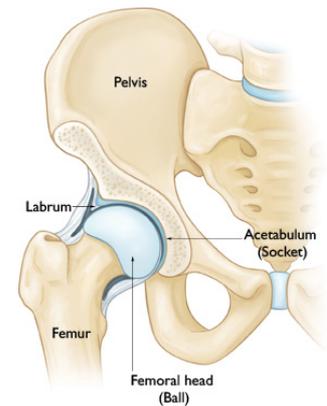


HIP (FEMOROACETABULAR) IMPINGEMENT

Femoroacetabular impingement (FAI) is a condition where the bones of the hip are abnormally shaped. Because they do not fit together perfectly, the hip bones rub against each other and cause damage to the joint.

HIP ANATOMY

The hip is a ball-and-socket joint. The socket is formed by the acetabulum, which is part of the pelvis. The ball is the femoral head, which is the upper end of the femur (thighbone). Articular cartilage lines the joint. It is a smooth, low friction material that covers the surface of the ball and socket, enabling the bones to glide easily across each other. In a healthy hip, the femoral head fits perfectly into the acetabulum.

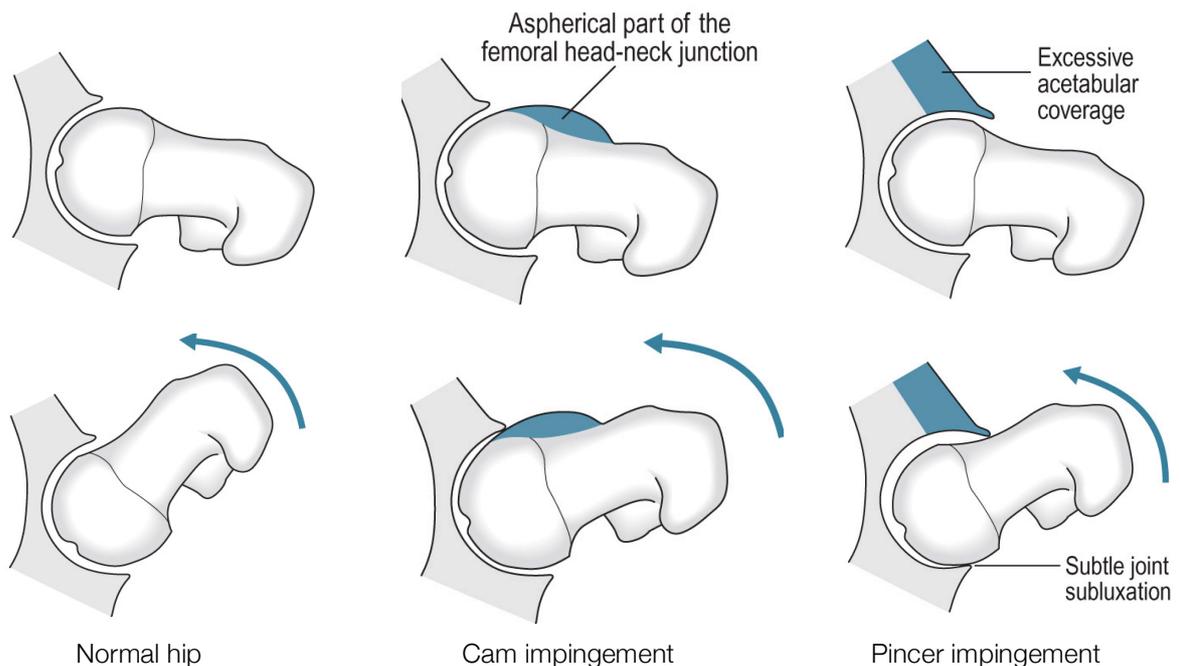


The acetabulum is ringed by a strong fibrocartilage gasket called the labrum. The labrum creates a tight seal, keeps in the lubricating fluid, and helps to provide stability to the joint.

WHAT IS HIP IMPINGEMENT?

Impingement usually occurs because the hip does not form as a perfect ball and socket during childhood. Either the ball is not properly round, causing *CAM impingement*; or the socket has extra bone extending out beyond the normal rim, causing *PINCEr impingement*. In many cases, there are elements of both cam and pincer impingement present. FAI leads to the cartilage and labrum being pinched or squeezed between the abnormal ball and socket, limiting movement and causing pain.

Over time, this action can result in the tearing of the labrum and breakdown of articular cartilage. Eventually, progression of this damage can lead to arthritis of the hip joint.





WHAT ARE THE SYMPTOMS OF HIP IMPINGEMENT?

Many people with the x-ray appearances of FAI never get significant problems, probably because they are able to avoid pushing their hip into positions of impingement. However people with large abnormalities or athletically active people who work the hip joint more vigorously may begin to experience pain earlier than those who are less active.

People with impingement usually have pain in the groin area, although it can be felt elsewhere. Sharp stabbing pain may occur with turning, twisting, and squatting, or specific sporting activities, but sometimes, it is just a dull ache. Catching, clicking or popping may indicate a labral tear associated with the impingement.

When symptoms first occur, it is helpful to try and identify an activity or something you may have done that could have caused the pain. Sometimes, you can just back off on your activities, let your hip rest, and see if the pain will settle down. Over-the-counter anti-inflammatory medicines (ibuprofen, naproxen) may help.

HOW IS IMPINGEMENT DIAGNOSED?

A diagnosis of impingement is suggested by the pattern of hip pain and limitations. Other problems can mimic hip impingement, including hernia, groin muscle injuries and back problems. An examination will help to exclude these diagnoses.

X-rays: of your hip will be performed to assess the shape and orientation of the bones.

MRI scan: will show up labral tears and cartilage damage.

Local anaesthetic: is usually injected into the hip at the same time as the MRI scan. This is important to figure out if your pain is truly coming from within the hip joint itself.

CT scan: In some patients, if we are considering surgery, we will perform a 3D CT scan to accurately map the shape and size of the abnormalities we need to remove during surgery. If you have early arthritis, CT is important to ensure you have enough cartilage in the joint to make hip arthroscopy worthwhile.



3D CT scan of hip before and after impingement surgery to remove cam bump (white circle) from femur

HOW IS IMPINGEMENT TREATED?

The initial treatment of impingement is non-surgical. This is a combination of:

- *Activity modification* to avoid painful movements and activities
- *Anti-inflammatory medications*
- *Physiotherapy* to improve the range of motion in your hip and strengthen the muscles that support the joint. This can relieve some stress on the injured labrum or cartilage.
- *Steroid injection:* If the hip is particularly irritable and inflamed, a steroid injection may be used to help settle the inflammation.



SURGICAL TREATMENT

Surgical treatment is indicated if:

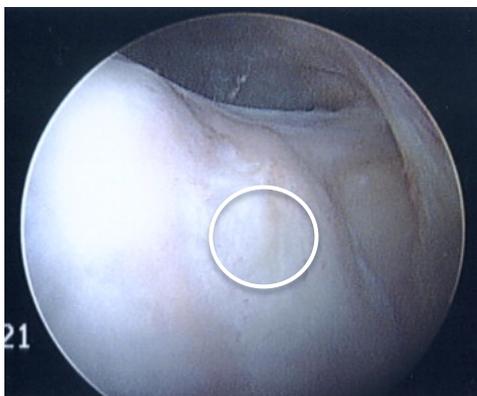
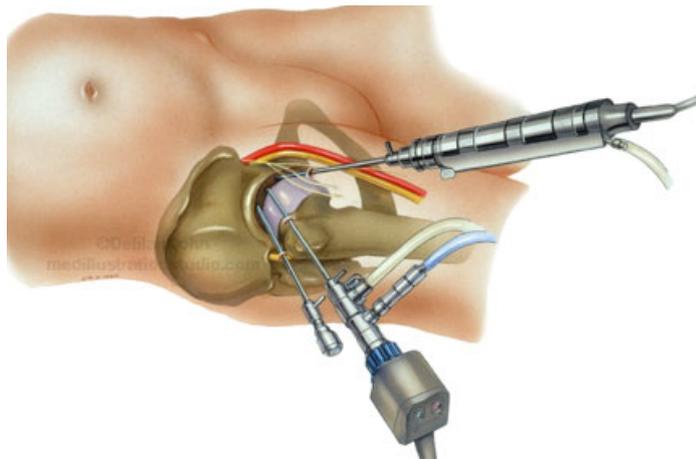
1. You have tried non-operative treatment and it hasn't improved your symptoms enough.
2. Scans show that the impingement is already causing damage to the joint surfaces or labrum

The most common types of impingement can be treated *arthroscopically*, that is via small (1 cm long) incisions on the side and front of the thigh. In some cases, the deformity is too severe to be managed arthroscopically and you will be referred to see a pelvic surgeon for a different type of operation.

The operation is performed under a general or spinal anaesthetic.

With x-ray guidance, the hip joint space is opened up by putting traction on the leg. The arthroscope is introduced into the hip and a thorough examination is performed. Other instruments are then introduced to trim away excess bone or repair damaged tissue, in particular the labrum and articular cartilage. After this is done, the hip movements are checked to ensure that there is no more impingement affecting your motion.

The procedure is usually performed as a day stay operation. You can go home on crutches afterwards once you are comfortable and safely mobilizing. Rehabilitation instructions will be given to you before going home.



Front of the hip joint with cam bump



Trimming off cam bump with burr



WHAT ARE THE RISKS OF HIP ARTHROSCOPY?

All surgery entails some risks, including hip arthroscopy and FAI treatment. There are risks related to having an anaesthetic, which your anaesthetist will talk to you about. In brief these include: allergic drug reactions, heart attack, stroke, blood clots and breathing complications.

Risks of hip arthroscopy include:

Nerve injury (uncommon): Significant or permanent nerve injury is rare, however up to 10% of patients may experience some transient numbness in the groin or on the top of their foot after surgery as a result of pressure from the traction on the nerves. In the vast majority of cases, this resolves quickly without any problems. Occasionally (0.5%) a nerve to the skin on the outer thigh can be damaged, resulting in a small area of permanent numbness.

Blood clots: Leg vein clots (DVT) are thought to occur in less than 1% of patients after hip arthroscopy. The incidence of clots breaking off and going to the lungs is around 1 in 1000 cases. If you have an increased clotting risk, you will be given blood thinners after your surgery until the high-risk period has passed.

Stiffness and loss of motion: This can occur with scarring inside the hip joint after surgery. You need to carefully follow the rehabilitation protocol to limit the risks of this problem.

Tendonitis: The tendons around the hip are particularly susceptible to becoming inflamed if your rehabilitation is too aggressive after surgery. The pain and limitation that this causes can be hard to get over and slows your recovery. The rehabilitation protocols are designed to avoid this problem.

Infection: This is a rare complication of hip arthroscopy, occurring in less than 0.5% of patients.

Risks specific to FAI surgery include:

Femoral neck fracture: Reshaping the femoral neck temporarily weakens it after surgery. An uncontrolled fall or excessive activity places the hip at risk of fracture in the 6-8 weeks after surgery. A complete hip fracture is rare, but can be a catastrophic complication. Stress fractures are less serious, but can sometimes require surgical fixation to prevent complete fracture.

Failure to completely relieve symptoms: Studies of outcomes after FAI surgery show that about 75% of patients have significantly better quality of life scores 12 months after surgery, 15% are not significantly better and 9% are worse. In most cases this is because too much damage to the hip has already occurred prior to surgery.

Progression of arthritis: The underlying damage present at the time of surgery can progress in spite of your treatment. In rare cases, arthritis or femoral head collapse can rapidly progress after surgery.

Overall, hip arthroscopy for the treatment of FAI is a safe and effective procedure. The chance of serious or life-threatening complications of hip arthroscopy is rare and the vast majority (>90%) of patients experience a significant improvement in their hip symptoms and quality of life.



WHAT ABOUT MY OTHER HIP?

Many patients have the x-ray appearances of impingement in both hips, stiffness in both hips, but only one side is symptomatic. We are often asked whether surgery is indicated on the non-symptomatic hip. At present this is an area of great interest to us and one we haven't got an answer for yet.

What we do know is this:

- Of all patients who have impingement in one hip and both hips are abnormal on x-ray, only 19% will become symptomatic in the other hip within 3 years.
- Our surgery is good for treating the symptoms of impingement, but no-one yet know if it effective at preventing arthritis.

Internationally, the consensus among the experts in impingement surgery is NOT to operate on pain-free hips. Until more evidence is developed, we agree with this view.

Our approach is to keep a close eye on you. If you develop any hip symptoms on the other side, you need to see us straight away, rather than waiting for months or years until the problems are too bad to be ignored. By that stage, the damage may have already been done.

WHEN CAN I RETURN TO SPORT, WORK OR DRIVING?

The time frame for return to sport or work is highly variable, depending on the demands involved and how much work was done on your hip joint.

Playing more demanding sports (eg rugby, netball, football or basketball) should not be considered until full strength and agility are regained. Regardless of whether or not surgery is undertaken, this may take up to 6 months or more.

As work demands and speed of recovery are variable, return to work timing is tailored to each patient as appropriate. As a rough guide, most patients can usually return to sedentary work within 2 weeks of surgery, however heavy manual labour or work involving prolonged movement on uneven ground should not be considered for a minimum of 3 months.

Getting back to driving can occur once you are safely able to rapidly and accurately use the foot pedals. With an automatic and a left hip procedure, this can be within a couple of weeks. With a manual car or right hip surgery, you must be off crutches and comfortably fully weight bearing before you start driving. No driving is allowed when taking some types of pain-killers. Check the prescription information.