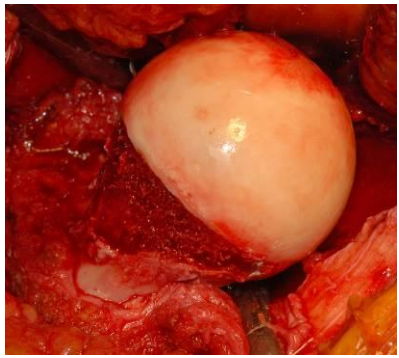
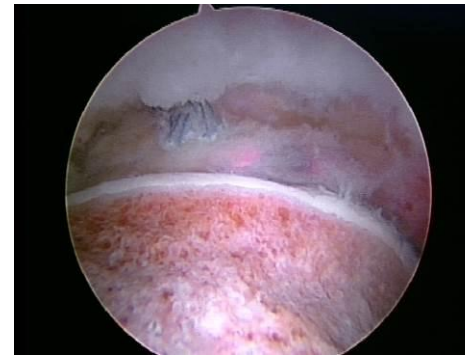
A patient guide to Hip Impingement
Surgical Management

Mr Sanjeev Patil
Miss Louise Duncan
Mr Frank Gilroy





Patient Name:

Occupation:

Operation / Restrictions:

Work/Sport:

Contents Page:

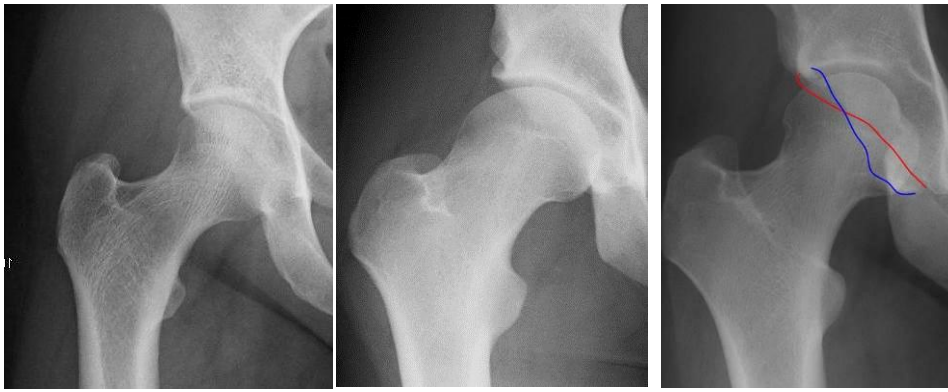
What is it?

Hip Impingement [Femoroacetabular impingement (FAI)], is a condition where there is unwanted contact between abnormally shaped parts of the head of the thigh bone and socket. In essence, the ball (femoral head) and socket (acetabulum) glide abnormally creating damage to the hip joint. Damage can occur to the articular cartilage (smooth surface of the ball or socket) or the labrum (soft tissue bumper of the socket).

FAI generally has two types:

The Cam type describes the situation where the neck of the femur is thickened as it forms the femoral head. This causes a loss of roundness of the femoral head which contributes to abnormal contact between the head and socket.

The Pincer type describes the situation where there is increased cover of the ball (femoral head) by the socket (acetabulum). This bony protrusion typically exists along the front-top rim of the socket and causes the labral cartilage to be "pinched" between the socket rim and front of the femoral head-neck junction. Often the Cam and Pincer forms exist together i.e. mixed impingement.



Normal Hip **CAM Impingement** **Pincer Impingement**

FAI can be associated with cartilage damage, labral tears, early hip arthritis, hyper mobility, sports hernias, and low back pain. Whilst it is common in high level athletes, it can also occur in any adult.

What does the operation involve?

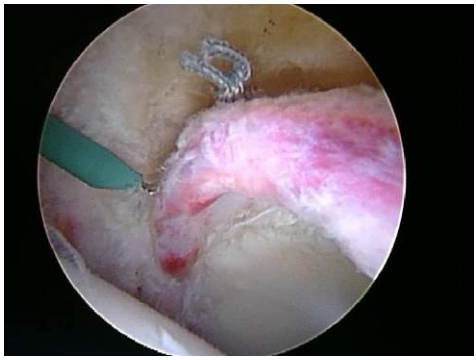
The aim of femoro–acetabular surgery is to relieve symptoms arising from the hip joint. It is believed that it may also help prevent hip arthritis in later life, but there is no evidence to support this theory to-date.

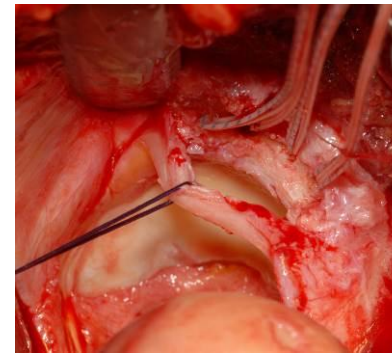
The surgery is performed generally under general anaesthesia and using a special camera (called an arthroscope) inserted into the hip joint through a small incision. The number of incisions located on the lateral aspect of the hip varies from patient to patient depending upon their pathology. Each incision is approx 2cm long and is closed with either two or three sutures. These sutures are not dissolvable and need to be removed in around ten days after surgery.

Using instruments inserted through incisions, the surgeon removes some of the cartilage or bone to reshape the joint surface. With this minimally invasive surgery the hip joint does not need to be dislocated and recovery is generally quicker.

Hip labral tear repair/ debridement

The type of operation performed will depend on the type and extent of the tear present. Generally every attempt is made to preserve the existing labrum or reconstruct one if need be in special cases.

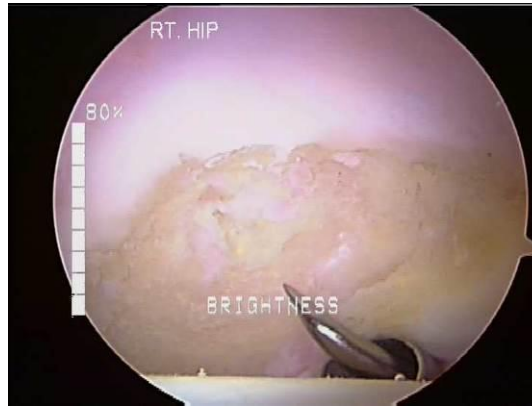




Labral repair in arthroscopic and open surgery

Microfracture / chondroplasty

This procedure is performed when there is presence of localised full thickness defects within the lining of the joint. This involves drilling small holes in small areas of subchondral bone thus producing a marrow clot in a bid to create new fibrocartilaginous cells responsible for the formation of new fibro-cartilage. (This is not as durable as the original hyaline cartilage however can reduce symptoms.



Open Surgery:

Sometimes it is necessary to perform open surgery, where hip joint needs to be dislocated in a safe manner. After such surgery, some hip movements will be restricted and weight bearing will be limited for the first 6 weeks.

Post Surgery

We believe commitment to a rehabilitation programme monitored closely by an experienced physiotherapist is essential to ensure the best recovery from the operation.

Do not push yourself too hard in your day to day activities and rehab in the weeks after your hip arthroscopy surgery, as recurrent micro trauma at the site may be the cause of persistent symptoms.

Why Physiotherapy?

It is important that any rehabilitation guide is modified to meet the individual needs of the patient because symptom presentation varies. Age, previous fitness and activity levels and complexity of surgery are also considered with respect to management following the operation.

Physiotherapy is essential to assist you to restore increased range of movement and strength, thus allowing you to make a better recovery from surgery and speed up your return to function.

The most common and successful sequence of treatments is to mobilise the hip joint, stretch out the tight musculature surrounding the hip, strengthen the weak muscles around the hip and pelvis and correct the faulty biomechanics and altered movement patterns which often develop.

It is important to strengthen the gluteal muscles and deep hip rotator muscles of the buttocks. Additionally the abdominal and thigh muscles benefit from strengthening because weakness of these muscle groups means the hip joint has reduced support causing excessive force/strain to be placed on the ligaments/joint capsule and cartilage of the joint.

Return to work and activity

This will be decided on an individual basis following discussion with your consultant, GP and physiotherapist but the table below provides guidelines.

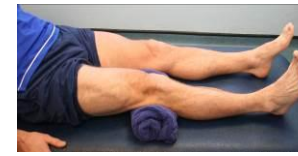
WORK	RETURN
Sedentary / desk	**4-6 weeks as pain allows**
Light / general office	**4-6 weeks as pain allows**
Heavy	**4-6 months**
SPORT	
Light individual exercise no contact	**4 – 6 months**
Heavy impact / contact sports	**4 – 6 months**

EARLY PHASE

Pre-discharge and immediate post-operative care – 2 weeks post op.

Isometric gluts
squeeze bottom muscles together and hold for 2 seconds, repeat 10 times.

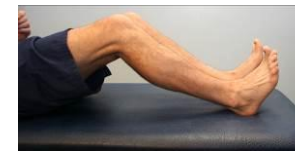
Isometric Quads
Roll up a towel and place it under your knee, Gently push down and tighten the muscles on the front of your thigh.
Hold for 5 seconds, repeat 10 times.



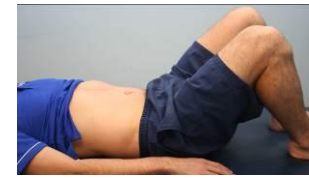
Inner range quadriceps exercise
Wrap a towel around a bottle or use a folded over pillow under knee. Gently push knee down tightening thigh muscles to raise heel off the bed to straighten knee. Maintain for 5 seconds then slowly lower and repeat 10 times

Straight leg raise exercise
Sitting with your back reclined against pillows. Push your knee down to tighten the thigh muscles and then keep it straight whilst you lift the leg 4-5" off the bed. Hold for 5 seconds and then relax, repeat 5 times and build up to 10 as able.

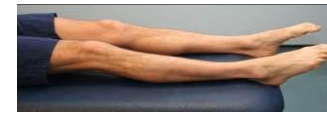
Static Hamstring – heel dig exercise
Bend knee and dig your heel into the bed gently pulling backwards feeling the muscles at the back of your thigh tighten. Hold for 3-5 seconds and repeat 10 times.



Isometric Tr Abs setting exercise
Lying on your back with knees bent. Pull inwards and upwards with your lower stomach muscles as if "squeezing a sponge and lifting it upwards". Hold for 5 seconds and repeat 10 times.

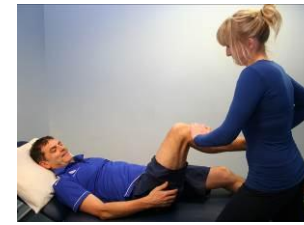


Ankle range of movement exercise
Move your ankles by lifting your toes up towards you and pushing downwards, turning the foot inwards and outwards and circle them round. Repeat 10 times each.



Knee range of movement exercise
Put a plastic bag or board under your heel and gently slide your heel up towards your bottom, bending your knee and straightening. Repeat 10 times.

Passive hip flexion to 90 degrees
Lying on your back, use a towel to pull your knee up only to 90 degrees ie so that it points towards the ceiling – do not pull the knee any further at this stage. Hold for 5 secs and repeat 10 times.



Partial weight bearing for first 2 weeks using elbow crutches

Flexion and internal rotation should be avoided for 6 weeks to assist with healing.

Week 2 onwards

Full weight bearing may now commence

Hydrotherapy programme – aqua jogging (**providing wounds are clean**) may commence

Hip flexors stretch
Kneeling on to the knee on your affected side, tuck your bottom under and move your weight forwards so that you feel a stretch at the front of your hip/thigh. Hold for 10-20 seconds as able and repeat 2-3 times.

Hamstring stretch
Lying on your back, pull your knee up to 90 degrees, use your hands to support behind the knee and gently straighten the knee until you feel a stretch at the back of your thigh. Hold for 10-20 seconds as able and repeat 2-3 times.

Lower abdominal work – early
Engaging stomach muscles as previous.
Gently lift and lower knee to 90 and slowly lower, repeat 5 times on (L), 5 times on (R) and repeat.

Calf exercises with band
Place a band around your foot, holding the ends in your hands. Push your toes downwards into the band and slowly return to starting position. Repeat 10 times and perform 2 sets, increasing to 3 as able.

Knee extension
Standing with band around immovable object and behind knee. Repeat 10 times, increase to 2 and 3 sets as able.

Hamstring curl exercise
Lying on your stomach, pull your heel towards your bottom bending your knee. Repeat 10 times and increase to 2-3 sets as able.

Isometric adduction
Lying on your back with your knees bent and a ball or folded pillow in between your knees and gently squeeze your knees against the ball. Hold for 5 seconds and repeat 10 times.

Week 3

Double calf raise
Standing equal weight bearing on the ground initially, progress to standing with balls of feet on the edge of a step. Push up onto your toes and slowly lower. Repeat 15 times and increase to 2 sets as able.

Heel slides
Lying with your back flat on the bed, hold a band in your hands and round your foot and slide the heel away from you pushing against the band to straighten the knee. Repeat 10 times, increase to 2-3 sets as able.

Double bridging

Lying on your back, knees bent and feet flat on bed, tighten stomach muscles and push down through feet lifting your bottom up. Squeeze bottom muscles together at the top. Repeat 10 times.

Leg extension in 4 point kneeling

On all fours, find a neutral position for your lower back and recruit your tummy muscles then maintaining the position of your back, gently straighten your (L) leg and repeat 5 times, then do the same for the (R) leg, repeating 5 times, rest and repeat so you have performed 10 on each leg altogether.

Active hip exercises in standing

Standing in front of a support take your hip backwards keeping your knee straight and your body upright. Lift your knee up, flexing your hip to 100 degrees only and lower. Lift your affected leg out to the side, only to mid range so you avoid irritating the joint. Perform each of these activities 10 times

Swiss Ball

Sitting on ball, roll pelvis back and forwards, arching and slumping back, roll hips side to side. Can progress to alternate heel lifts and knee lifts – controlling your balance using your abdominal strength. Can also perform thoracic rotations (to dissociate thorax and pelvis movements

Weight transference work in standing
Hydrotherapy – walking programmes will be progressed gradually.
Theraband, weight or unstable surface to increase difficulty

Progression Criteria to move onto Middle Stage Rehabilitation

Full weight bearing gait (as appropriate dependent on restrictions)
Minimal pain experienced during early stage exercises
Ability to find and maintain pelvic neutral position
Equal weight bearing during sitting
Good strength and control of early stage exercises with correct sequences of muscle recruitment exhibited

MIDDLE PHASE

Week 4

Plank exercise
Leaning on your elbows, tuck your bottom under, tilting your pelvis backwards and recruiting your stomach muscles, hold for a period of 10 seconds increasing to 20 as able. Repeat in a side plank position keeping your hips level once you become more confident.

Abdominal mini crunch exercise
Lying on your back with your knees bent, place one hand on your thigh and the other on your stomach. Gently reach the hand on your thigh upwards towards your knee whilst recruiting your lower abdominal muscles. Your tummy should not bulge under your hand as you gently curl your shoulders round. Repeat 10 times

Double knee bends
Standing with support in front of you, gently bend knees to approximately 30-45 degrees, sticking your bottom out behind you. Repeat 10 times and increase to 2 and 3 sets as able.

Hydrotherapy – swimming but no breast-stroke for 4-6/52 as advised by your consultant

Mobilisation performed by the physiotherapist as required.

Week 5-6

Gait re-education – heel / toe gait & good pelvic alignment



Walking
Gradually increasing distance

X-trainer
Gradually build up time and resistance as guided by your physiotherapist

Single leg balance

Standing on one leg and moving arms in running action or using wobbleboard / sitfit as directed.


Kneeling hip flexor stretch

Kneeling on to the knee on your affected side, tuck your bottom under and move your weight forwards so that you feel a stretch at the front of your hip/thigh. Hold for 10-20 seconds as able and repeat 2-3 times.

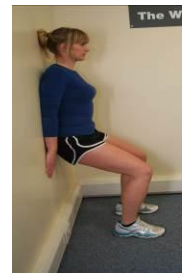
Double bridge and heel lift

Lying on your back with knees bent, recruit lower stomach muscles before pushing through feet to lift bottom off floor. Once able to maintain a steady position raise up onto your toes. Repeat 10 times. Lifting your arms off the ground will increase difficulty.

Side lying hip abduction

Lying on your unaffected side with full body supported and lower leg bent, lift the top leg upwards ensuring that it does not drift forwards. Do not lift the leg too high – mid range only to prevent joint irritation.
Repeat 10 times

Wall slides –



Feet should be positioned a step away from wall with shoulders and back supported. Slide bottom down bending knees – no further than 80 degrees hip flexion. Repeat 10 times.

Week 7-8

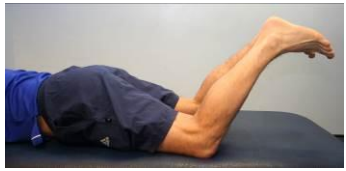
Long lever hip circumduction
Holding the band in your hands and around your foot, ensure your knee is straight and leg is supported by the band. Gently point your toes and make small circular movements with your leg in both directions.

Squat
Feet shoulder width apart, ensure that body is kept upright during exercise whilst slowly lowering bottom to touch a seat. Aim to reduce the amount of forward bend at hip to minimise compression at the front. Repeat 10 times. Can progress to holding weight in hands or performing on a less stable surface

Single leg bridge -
Push through both feet to lift bottom up off ground and tighten buttocks at the top. Then straighten out your unaffected leg, keep your pelvis level by keeping buttocks clenched. Repeat 5 times, then switch legs and repeat.

Leg extension with band –
Standing in front of support, place band around ankle or attach a weight to your ankle and keeping knee straight, take the affected leg behind you, keeping your body upright. If your back bothers you then lean onto your forearms. Repeat 10 times.

Prone heel squeeze
Lying on your stomach with your knees apart, bend your knees and push your heels together and hold for 5 seconds, repeat 10 times.



Single knee bend
With support in front of you, stand on to the affected leg and bend the knee only 30 degrees, ensure your knee does not bend over your foot by sticking your bottom out behind you. Repeat 10 times.

Re-train sit to stand with gluts activation
With feet placed shoulder width apart, bend forwards so head over toes and stand pushing up through feet, clenching buttocks to enable you to stand. Repeat 10 times. Can add a weight in hands to increase difficulty.

Progression to move onto Late Stage Rehabilitation
Full hip ROM achieved / spinal ROM
Normal gait without discomfort
Good neuromuscular control of all middle stage exercises
Minimal discomfort experienced during middle stage exercises
Patient must demonstrate good pelvic control during functional activities and increased length of cardiovascular tolerance

LATE PHASE

Week 9-12

Side steps with resistance band

Resistance band kicks

Pelvic rotation in standing

Dynamic lunges

Advanced plank / side plank

Forward bow - arabesque

Jog / Walk programme can now commence

****Please be aware that this programme is only a guide for patients who have had hip impingement surgery. This has to be modified to suit individual patient needs based upon their hip condition and requirements****

This last section may not be applicable depending on the condition of your joint and it may be necessary for you to limit impact activities in the future.

Week 16 onwards as required for return to function / sport

Skipping,

Figure 8’s, Z cuts, W cuts

Hopping / jumping

Bounding

Gradual return to more sport specific drills and activity as required ie football, tennis, hockey, golf, rowing.

Hopping on / off trampette or box

Ski – fitter if available

Guidelines

- Week 0-2
- Passive ROM ex's avoiding hip flexion beyond 90° and internal rotation
- Partial weight bearing

Week 2 – 6

- Hydrotherapy
- Full weight – bearing
- Increase ROM gradually
- Continue to avoid hip impingement positions

Week 6 – 12

- Full weight bearing correcting gait pattern
- Progressive strengthening
- Regain normal function

12 weeks onwards

- Running programme commences
- Progress to agility as able

Additional Exercise Prescription Form…..