Introduction

Since the early 20th century, when hip arthroscopy was regarded as being almost impossible to undertake, the procedure has developed in leaps and bounds. Presently there are many reasons why a surgeon might recommend hip arthroscopy to a patient. Some of these reasons are as follows:

1. To explain unexplained hip pain (diagnostic hip arthroscopy)
2. Removal of loose or foreign bodies
3. Repair of damaged articular cartilage (gristle)
4. Removal or repair of a torn acetabular labrum
5. Correction of femoroacetabular impingement
6. Management of damaged hip ligaments
7. Management of hip joint infection
8. Inflammation of the hip lining (synovitis)
9. Investigation of a painful joint replacement or hip resurfacing

Rehabilitation following Hip Arthroscopy is an essential part of full recovery. Ideally this rehabilitation should be carried out under the guidance of a physiotherapist.

This Rehab program has been designed to guide your physiotherapist through your rehabilitation as I think it should be done. All rehabilitation programs are flexible. Individual progress varies greatly, and this will require some modifications of the program at the discretion of your physiotherapist. Different techniques may also be used by your physio depending on available equipment, and your individual needs to meet the described aims.

Aims of Physiotherapy

Physiotherapy should ideally commence preoperatively. Patients who have a pain-free, mobile, healthy joint recover far quicker post operatively than those patients with acutely painful joints. It is ideal to learn the required exercises pre-operatively.
The treatment goals are:

1. Diminish post-operative pain and swelling
2. Restore full range of motion
3. Restore muscle tone and strength
4. Restore functional stability and strength
5. Maintain and develop aerobic conditioning
6. Proprioceptive retraining allowing a safe return to work and sport as soon as possible
7. Address pre-disposing conditions contributing to the hip pathology

This rehab program is based on the premise that education, retraining and strengthening of the Deep Hip Rotators (Quadratus Femoris, Obturator Internus, Superior and Inferior Gamelli) will accelerate the recovery.

The Deep Hip Rotators (DHR) have a short lever arm and therefore act as deep stabilisers of the hip. They provide dynamic stability of the hip throughout its ROM. Ideally the rehab process should be initiated preoperatively by educating the patient regarding the role of the DHR and the way in which the hip, pelvis and lumbar spine interact.

**Brief Timeline:**

- **Day 1** Begin physiotherapy
- **Day 10-14** Wounds usually healed enough to remain uncovered
  - Can start swimming (no kicking)
  - Can usually return to work for “light duties” if available
  - Usually walking reasonably comfortably without crutches
  - Commence DHR strengthening and retraining
- **Week 6** Can commence running in a straight line
  - Can start hip stretches
- **Week 12** Commence sport specific training. Can start to jump.
  - Return to sport as able
The Rehabilitation Program

Stage 1 Wound Healing

Day 1- Day 14

Aims

Adequate pain relief
Progressively stop using crutches
Decrease leg and joint swelling
Establish muscle control and aim for normal gait

Treatment Guidelines

- Weight bearing as tolerated, decreasing dependence on crutches
- Pain and swelling reduction techniques including
  
  Ice
  
  Co-contraction
  
  Biofeedback and selective muscle stimulation if necessary
- Range of motion exercises
  
  Stationary bike- start with seat high, low resistance
  
  ROM exercises are encouraged only as comfort allows. Avoid pushing end range for initial 6 weeks
- Commence retraining and strengthening of the Deep Hip Rotators
  
  Quadratus Femoris
  
  Obturator Internus
  
  Superior and Inferior Gamelli
- DHR contraction is best assessed prone. In equivocal cases, real time ultrasound can be used to assess contraction

Avoid gluteus medius strengthening.
Stage 2 Restore hip stability

Week 2- week 6

Aims

- Continue to develop DHR retraining and strengthening
- Restore hip and pelvic stability and strength with low load closed chain functional exercises
- Develop good muscle control and early proprioceptive skills
- Maintain cardiovascular fitness

Treatment guidelines

Advance DHR rehabilitation as able

- After retraining prone, ensuring appropriate activation, progress to 4-point kneeling.
- Resistance band should be included once accurate activation in 4-point kneeling is achieved
- DHR retraining is encouraged in prone and 4-point kneeling at all stages

Assessment of lumbar-pelvic region

1) Assessment and manual therapy treatment as appropriate for articular restriction in the lumbar spine or SIJ

2) Analysis of motor control around the lumbar spine and pelvis including accurate activation and timing of pelvic floor, multifidis and transversus, without substitution of more global muscles (such as external oblique or posterior pelvic floor and piriformis)

Assessment of the pelvic-hip region

1) Analysis of dynamic hip stability including single leg balance watching for excessive lateral shift or pelvic tilt that may indicate dysfunction with gluts control

2) Analysis of hip motor recruitment patterns watching for signs of excessive use of global muscles including adductors, TFL and hamstrings

A focus on low load and higher repetitions will help retrain motor control pattern and endurance.

Exercises can include:

Supine core activation with hip movements (such as pilates matwork; bent knee fallout, heel slides and single leg heel taps)

Low load tasks such as quarter and half squats

Lunges with pelvic and hip control, maintaining foot and knee alignment
Weight shift and transfer with pelvic and hip control in half squat, quarter squat and upright postures

Step ups with pelvic, hip and knee control

Steps downs with pelvic, hip and knee control

Gym equipment can be introduced

- Stepper
- Leg Press
- Mini Trampoline

**Stage 3 Proprioception**

**Weeks 6-12**

**Aims**

- Restore proprioception
- Commence Psoas stretching
- Commence Piriformis stretches

Progress functional exercises to include more challenges to pelvic and hip control

Continue addressing pre-disposing factors

Continue with DHR rehab

**Treatment guidelines**

Progress squats and lunges to include proprioceptive challenges such as air cushion or spin discs. Can include hand held weights to build strength.

Gradually increase gluteal challenges with the use of theraband (such as multidirectional leg movements in single leg balance). This is provided the patient can maintain accurate alignment and is not substituting with over active TFL or hamstrings

- Progress with resistance on gym equipment
  - Leg press
  - Hamstring curls
  - Stairmaster
  - Treadmill power walking
Progress with strength training
  Progress co-contractions to dynamic
  Step lunges
  Half squats
  Wall squats

Can begin jogging in straight lines on the flat

Start cycling on a normal bicycle

Progress with proprioceptive work
  Lateral stepping
  Slide board
  Wobble board
  Trampoline balance

Stage 4  Sport specific

Weeks 12-20

Aims
  Prepare to return to sport
  Incorporate more sport specific activities
  Introduce agility and reaction time into proprioceptive work
  Increase leg strength
  Develop patient confidence

Treatment guidelines:
Increase challenges to proprioception including single leg balance on air cushion or wobble board

Sports specific retraining with hip and pelvic control
  General strength work
    Half squats with resistance
    Leg press
    Leg curls
    Wall squats
Step work on progressively higher steps
Stepper and rowing machine

- Sport specific
  Shuttle runs
  Ball skills
  Sideways running
  Skipping rope

- Low impact step aerobics class
- Swimming can include using flippers
- Return to sport as able

Possible Complications

**Infection**
The patient complains of a constant, severe pain. The patient may be sweaty, ill, have a temperature and often a tense effusion.

**Post operative haemorrhage**
Results in a hot tender area over the proximal thigh. May be difficult to distinguish from infection.

**Deep Venous Thrombosis**
The patient has calf, popliteal, thigh or groin pain and tenderness associated with swelling. Should have a venous duplex performed if this concern exists

**Stiffness**
May occur at any stage of the rehabilitation. The causes include:

  - Arthrofibrosis
  - Complex regional pain syndrome

If any concerns please contact the rooms, the private hospital, or the orthopaedic registrar through the public hospital ASAP