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Post-operative Physiotherapy Protocol
Hip Arthroscopy

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Hip arthroscopy offers a method of treatment for hip disorders including (most commonly) labral tears, loose bodies, impinging osteophytes and chondral injuries. The benefit of hip arthroscopy is that the surgical technique is more accurate and less invasive, and the rehabilitation is much simpler than for open surgery.

The mechanism of injury for labral tear can be significant trauma involving hip rotation. Patients can also present with a gradual progressive onset of symptoms (without trauma) if a predisposition to increased load on the anterior hip and labrum is apparent. Predisposing factors that can increase stresses on the anterior hip joint can include:

- Abnormal femoral or acetabular morphology (including FAI and dysplasia)
- Repetitive twisting sports such as tennis or golf
- Excessive anterior translation of the femoral head

To improve patient recovery following hip arthroscopy it is important to assess and address any pre-disposing factors that may have contributed to labral tear. This includes thorough assessment of the pelvis, hip, lower limb chain and thorax including movement patterns and motor control. Poor motor control strategies around the lumbar-pelvic-hip region and postural malalignment can all contribute to functional hip impingement or excessive anterior translation of the femoral head. When a labral tear presents as a traumatic injury there may be no pre-disposing factors evident.

Aims of Physiotherapy

- Minimise post-operative pain and swelling
- Restore hip and pelvic functional stability and strength
- Restore hip ROM
- Restore proprioception for return to work and sport
- Address pre-disposing factors contributing to biomechanical overload on anterior hip structures

Rehabilitation Program:

The rehabilitation program is not a recipe. Modifications and considerations should be made according to;

- Patient goals
- Patient age and pre-operative level of fitness
- Pre-existing contributing factors to labral tear
- Any associated concurrent dysfunction in the hip and pelvic region

Assessment and rehabilitation of the hip and pelvic area is a complex and requires thorough analysis of the pelvis, hip and lower limb. Exercises provided in this protocol are to serve as guidelines only. Actual progress may be faster or slower depending on the individual patient.

An early goal is to restore a normal gait pattern based on symptoms and functional pelvic-hip control. For this reason it may be beneficial to use crutches in the first week only if a limp is present, until normal gait pattern is restored. For patients undergoing labral resection crutches are not usually required. For patients undergoing labral repair it is recommended a period of 2-3 weeks PWB on crutches.

Typically 4 to 6 weeks is needed to recover from the aspects of surgical intervention including intra-articular effusion. Therefore pushing end range of movement during this time can be counterproductive to a patient's recovery. Hip ROM is encouraged only to tolerance.

Throughout rehabilitation manual therapy by the physiotherapist (such as massage) may be appropriate for patients with a tendency to hypertonicity in deep posterior hip muscles, TFL, adductors or hamstrings. Manual therapy for lumbar spine, SIJ and thorax may also be appropriate to optimise biomechanical and postural load through the anterior hip. Care should be taken to avoid hip traction, end range hip flexion and end range internal rotation.

Gradual resumption of activities over a 6 to 16 week period is expected. During this time low-impact closed chain exercises can be progressed to a functional hip and pelvis rehabilitation program. Modifications to exercises should be considered according to the patients pre-disposing factors and addressing these factors is essential during this time frame. This will incorporate retraining motor patterns around the hip and pelvic region, which has more emphasis on motor control than power or strength of individual muscles. Rehabilitative exercises should not be painful within the hip joint or labrum. Return to sport will depend on the patient's pre-operative level of function and their ability to control the hip and pelvis in dynamic single leg balance. Stationary bike or cycling (if pain free) may be appropriate in the early stages of rehabilitation (2 to 6 weeks) if the patient wants to maintain cardiovascular fitness. Light jogging may be appropriate following the 8 to 12 week mark. Returning to hip challenges such as change of direction or speed work should be assessed on an individual basis.

Phase 1: 0-14 days

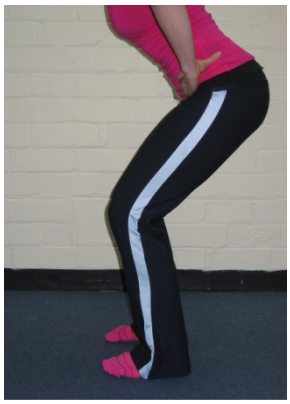
Goals:

- Reduce swelling and pain
- Restore normal gait pattern
- Education on minimising anterior hip load in daily activities
- Regain ROM within tolerance
- Isolate hip and pelvic stability muscles

Treatment guidelines:

- Ice or NSAIDS as required
- Crutches PWB 2-3 weeks for labral repair, and only if required for labral resection. Training on correct gait pattern
- Analysis and patient education on sitting postural alignment to offload anterior hip by ensuring centered femoral head to sit without posterior pelvic tilt. Avoid low chairs (hip less than 90 degrees flexion) for up to 4 weeks.
- Analysis and patient education on standing postural alignment to offload anterior hip by ensuring centered femoral head with basic plumb line posture without posterior or lateral pelvic tilt
- Exercises to improve postural endurance, which should begin with accurate activation and timing of pelvic floor, multifidis and transversus, without substitution of more global muscles (such as external oblique or obturator internus/posterior pelvic floor)
- Exercises to improve hip stability including isometric isolation of quadratus femoris
- Start supine active assisted hip ROM exercises within tolerance. Include education of maintaining lumbar-pelvic control and centered femoral head with accurate activation of lumbar-pelvic and hip stability muscles. Care with flexion and rotation ROM.
- Start low load tasks such as quarter and half squats maintaining hip centering and alignment, core activation and body weight toward heels

Poor standing alignment with hip anterior to base of support and thorax posterior can overload the anterior hip



Squats with hip centered & core active

Phase 2: 2-6 weeks

Goals:

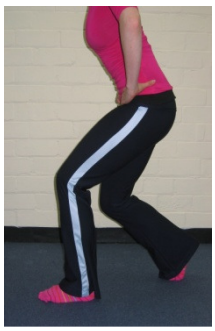
- Address any pre-disposing factors contributing to excessive load on anterior hip. This can include assessment and treatment of foot/lower limb biomechanics, lumbar-pelvic and hip stability, SIJ, thorax, postural habits and movement patterns.
- Restore hip- pelvic stability & strength with low load closed chain functional exercises.

Treatment guidelines:

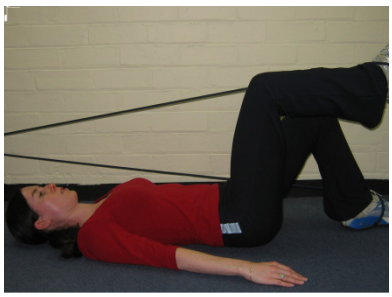
- Manual therapy (such as massage) to the hip and pelvic region may be suitable in cases where muscle imbalance is evident. This can include release to ITB, TFL, piriformis, OI and rectus femoris. Care to avoid hip traction or end range hip rotation.
- Manual therapy (such as massage and joint mobilisation) may be appropriate for other areas in the body with signs of excessive compression or rigidity that may be contributing to additional load onto the anterior hip. This will be unique to each patient and can include the lumbar spine, SIJ, thorax and lower limb chain.
- Progress hip and pelvic strength and stability with a graded and progressive functional closed chain gluteal exercise program. Assess dynamic hip stability and hip motor recruitment patterns watching for signs of excessive use of TFL or hamstrings, excessive lateral shift, pelvic tilt or toe clawing.

Therapeutic exercise prescription in this phase will be determined by each patient's assessment findings. As a general rule progression of exercises should always include activation of deep stability muscles and cues to allow centering of the femoral head. Once accurate activation can be maintained exercises can be progressed to include retraining of good functional movement patterns. Foot and knee alignment during these exercises must be also maintained. A focus on low load and higher repetitions will help retrain motor control pattern and endurance. Exercises can include:

- Supine core and deep hip flexor activation with closed chain hip movements. Accurate activation of inner unit must be maintained. Lower limb support with the use of band (pictured) or ball can assist in reducing load through anterior hip
- 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 and step downs with pelvic, hip and knee control
- Addition of theraband around the knees to encourage gluts activation during squats, lunges and step ups



Lunges with hip control
Operated hip forward



Use of resistance band to supine hip control exercises to support hip

Use of resistance band

Phase 3: 6-12 weeks

Goals:

- Restore proprioception
- Progress functional exercises to include more challenging pelvic and hip control work
- Continue addressing pre-disposing factors

Treatment guidelines

- Progress squats and lunges to include proprioceptive challenges such as air cushion or spin discs. Can include hand held weights to increase strengthening.
- Increase weight transfer exercises to balance work, whilst maintaining activation of inner unit muscles and pelvic-hip control
- Gradually increase gluteal challenges with the use of theraband (such as multi-directional leg movements in single leg balance). This is provided the patient can maintain accurate hip and pelvic alignment and is not substituting with over active TFL or hamstrings

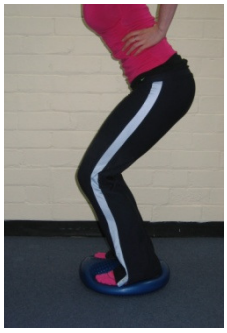
Phase 4: 12 weeks plus

Goals:

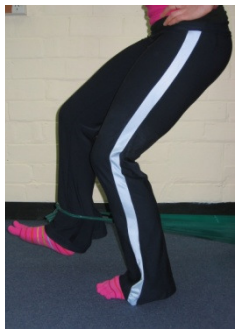
- Improved functional strength and endurance
- Return to sporting activities

Treatment guidelines:

- Increase challenges to proprioception including single leg balance on air cushion or wobble board
- Sports specific retraining with hip and pelvic control



Squats and lunges with air cushion



Balance with theraband

Balance with air cushion

Free online video support for physiotherapists is provided as a guide to demonstrate example exercises.

www.synergyphysio.com.au/workshops

Hip Arthroscopy: Guidelines for manual therapy and exercise

	Phase One Week 1 & 2	Phase Two Week 3- 6	Phase Three Week 6-12	Phase Four Week 12 +
Gait retraining Standing posture/sitting posture Hip ROM to tolerance	• • •	• • •		
Manual therapy Massage to: Piriformis TFL and ITB Adductors Joint mobilisation to SIJ/LS if required Joint mobilisation to thorax if required	 • 	 • • • • •	 • • • • •	
Stretches if required: Piriformis Gastrocs Quads Hamstrings Adductor	 • 	 • • • •	 • • • • •	
Core and stability exercises with hip centered: Activation isometric QF Supine pilates matwork Supine reformer level one	 • • •	 • • •	 • • •	 • • •
Functional gluteal exercises: Performed with accurate core activation Squats Lunges Squats with theraband Lunges with theraband Weight transfer Step ups Step Downs Lunges with hand weights	 • 	 • • • • • •	 • • • • • • •	 • • • • •
Proprioception Squats on air cushion Lunges on air cushion Balance Balance with theraband challenges			 • • •	 • • • •

Online resources, support videos and lectures available
www.synergyphysio.com.au