**HAMSTRING REATTACHMENT REHABILITATION PROTOCOL**

Please note that the timeframes mentioned are general and will vary from patient to patient depending on their individual presentations, pre-injury activity levels, delay in presentation, goals, sciatic nerve involvement etc. They are meant to be guidelines only. **Please check with the surgeon if there are any major variances** during the rehab journey.

**Phase 1: Acute Phase (0 – 2 weeks)**

Goals:

* Reduce pain and swelling
* Wound care
* Restore standing posture and weight bearing
* Maintain sciatic nerve mobility

Guidelines:

* Physiotherapy intervention is at a minimum
* No muscle tension passive or active – i.e. hip flexion must only occur with simultaneous knee flexion
* Gentle neural mobilisations *(off-loading – not stretching)*

**Phase 2: Continued Healing and repair (2 – 6 weeks)**

Goals:

* Scar management and protection
* Restore normal gait pattern and full weight bearing status
* Pain free, non-resisted full hip AROM with the knee >90° flexion
* Pain free, non-resisted full knee AROM with the hip at 0° in supine or side lying.
* Dynamic core stability and gluteal strengthening
* No scar massage until 4 weeks post-op. Use Micropore tape and other scar management treatments such as Cica Care or Kelocote)

Guidelines:

* **Lying**: Supine heel slides – hip and knee flexion to hip and knee extension: progression = gradually sit up as doing the heel slides
* **Supine** crook lying single leg press against theraband: progression= supporting leg can hover or be raised whilst affected leg performs the leg press motion
* **Supine** over the bed Knee extensions – open chain progressive resistance for quads strengthening and neural mobilisation. **NB: Not sitting**
* **Standing**: Double leg calf raises: progression = single leg calf raises
* Glute strengthening: standing hip hitching and standing to side-lying straight leg abduction

**Phase 3: Continued Repair Phase (6 – 12 weeks)**

Goals:

* Begin gravity-only resisted hamstring strengthening in neutral hip position
* Start gentle proprioception/balance workout

Guidelines:

* **Standing**: Walking on flat ground as able but not as form of exercise. (Comfortable pace for 10 mins, progressing to 30min by week 12)
* ¼ squats with light hand-weights adding up to < ¼ of body weight
* Standing theraband exercises (hip Abd/Ext). Theraband attached to ankle, pulling involved leg out to side and backwards against a gentle resistance
* Exercise bike as tolerated
* **Lying**: Double leg bridging in crook lying with feet on the floor. Progression:
* *Decrease arm support from by side to across chest*
* *Add a box under feet then progress to legs on chair*
* Lumbar spine mobility with lower legs on a Swiss ball. Rolling the ball forward and back and side-to-side.
* Core stability progressions: Pilates reformer leg press (light springs)
* Prone leg curls, no added weight resistance. Progression = standing leg curls – (No weights until 12 weeks)

**Phase 4: Remodeling Stage (12 – 16 weeks)**

Goals:

* Increase strength of hip/knee/ankle and kinetic chain
* Full range of motion at hip and knee
* Begin hamstring stretches
* Begin strengthening Hamstring with added weight resistance
* Progress proprioception/balance work

Guidelines:

* **Standing**: Fast walking (flat ground – no hills)
* Walk and balance on mini-tramp/foam balance
* Pilates scooter and home scooter with Theraband. Slow and controlled with progressive increase in resistance
* **Lying**: Continue standing Theraband exercises (increase resistance)
* Stretching: Straight leg raise or sitting knee extension to a gentle discomfort (2/10 VAS)
* Hamstring strengthening with added resistance. Progression – prone – standing – machine leg curls
* Swiss ball double leg bridges with core pre-activation
* Single leg ¼ squats holding up to ¼ body weight
* Progress gluteal strengthening: Supine theraband hamstring pull downs
* Leg press: initially double leg and progress to single leg. Progressive resistance

**Phase 5: continued remodeling and strengthening stage (16 – 24 weeks)**

Goals:

* 60-70% hamstring strength of involved side vs. non-involved side
* Progress to eccentric hamstring strengthening
* Jogging to 75% pace
* Progress hamstring resisted weight training

Guidelines:

* **Lying**: Swiss Ball bridges: Progression – Double leg on Swiss ball, pull heels towards buttock, slow and controlled. Maintain a stable pelvis and slowly decrease arm support.
* Increasing core stability exercises (advanced Pilates)
* **Sitting**: Continue leg press > body weight
* Hamstring curls in positions gradually increasing hip flexion
* **Standing**: Fast walking up hills
* Progress hamstring resisted weight training: suggestions – double leg – single leg – 2 up concentric and 1 down eccentric. Gradually increase the speed.
* Balance on involved straight leg; bend over to touch the floor in front of you, then to the left, right and with alternate hands. Return to standing and repeat.
* Scooter: resistance on pilates reformer machine or with theraband
* Plyometrics: jumping, hops and landing with ¼ – ½ turns
* Sciatic neural mobilisation: Swinging leg and head nods
* Light jogging on flat surface, starting with intervals of 100m with walking in between. Eg: 30m acceleration / 40m jog at 50% / 30m deceleration. Increase intensity as appropriate
* Backwards striding. Increase speed gradually, focusing on deceleration control.

**Phase 6: Sports Specific phase (24 weeks plus)**

Goals:

* Return to sport
* Running to sprinting
* >80% hamstring strength of involved side vs non-involved side by 24 weeks
* >85% hamstring strength of involved side vs non-involved side by 18-24 months

Guidelines:

* Sport specific drills
* Plyometrics: alternate jump/split/scissor mini squats and mini lunges. Progression: add hand weights
* Running drills: increase speed work and multi-directional
* Straight leg dead lifts
* Nordic Hamstring curls (eccentric then concentric and eccentric)