PROXIMAL HAMSTRING REPAIR PHYSICAL THERAPY PROTOCOL

Jovan R. Laskovski, M.D.
Hip Arthroscopy
Sports Medicine & Orthopaedic Surgery
Crystal Clinic Orthopaedic Center

Please use appropriate clinical judgment during all exercise progressions. The specific exercises given in this protocol are provided for guidance, but it is important to use clinical judgment when determining appropriate progressions within the physician provided WBing and ROM restrictions. Any questions/concerns, please do not hesitate to contact Dr. Laskovski's office at 330-644-7436 or CCOC Green PT at 330-644-5461.

If you have any concerns regarding a patient's symptoms or overall progress, please evaluate, assess, and treat as you feel appropriate while maintaining Dr. Laskovski's precautions and guidelines at all times. Gradual progression is essential to avoid flare-ups. If a patient experiences a flare up, focus on ROM, stretching, manual therapy, and non-painful strengthening as tolerated. Do not push through pain.

- **WEIGHTBEARING and BRACE:** Patients will be foot flat weight bearing with crutches or a walker between 0-2 weeks post-op. They should be wearing their T-Scope Brace locked in neutral position at the hip at all times. It may be unlocked to allow patient to sit for eating, toileting, bathing and riding in a car/driving only. During these times when the brace is unlocked, the knee MUST be kept flexed.
    - 0-2 weeks: FFWB w/ brace locked
    - Week 2: PWB beginning with 25%, progressing to 50% w/ brace locked
    - Week 4: WBAT with bilateral crutches or walker
    - Week 6: WBAT with unilateral AD and then to FWB with brace unlocked. May D/C brace once tolerating FWB.

Phase I – Immediate Rehabilitation

Goals:

- Protection of the repaired tissue
- Restore ROM within guidelines
- Prevent muscular inhibition and gait abnormalities
- Diminish pain and inflammation

Precautions:
**DO NOT AGGRESSIVELY PUSH THROUGH PAIN/PINCHING
**Gentle stretching will gain more ROM

ROM guidelines:
- Avoid lengthened hamstring position x 6 weeks
- 2 weeks: limit PROM hip flexion to 45 degrees
- 4 weeks: limit PROM hip flexion to 60 degrees; SLR limit to 30 degrees; begin PROM hip abduction to tolerance below 30 degrees of hip flexion
- 6 weeks: limit PROM hip flexion to 90 degrees

Initial Exam Suggestions:
- Measure **NON-OP Hip**:
  - Seated AROM hip IR, ER; supine AROM hip flexion; supine PROM hip flexion, IR, ER
- Measure **OP-Hip**:
  - Supine PROM hip flexion (with knee in flexion) to 45 degree limit, PROM prone hip extension (with knee in flexion) to tolerance
- Manual Treatment: long axis traction with circumduction (for circulating synovial fluid and, therefore, cartilage health), PROM flexion – all in PAIN/PINCH FREE ranges of protocol limits; PROM prone knee flexion to tolerance, patellar mobilizations prn
- HEP given at initial evaluation: ankle pumps, glut sets, quad sets, transverse abs isometrics, hip ABD isometrics (be aware of hip flexion precaution)
  - At 2 weeks: NWB ankle strengthening, passive calf stretching with 0° hip flexion

Weeks 1-6 Exercises:
****NO hamstring stretching for 6 weeks****
- Continue Initial **Phase I exercises** given at evaluation: ankle pumps, glut sets, quad sets, transverse abs isometrics, submax hip ABD isometrics, NWB ankle strengthening, passive calf stretching with 0° hip flexion
- **Weeks 2-3:**
  -May add clams (be aware of hip flexion precaution)
- **Weeks 4-5:**
  - Gentle AROM of the hip initiated as tolerated
  -Supine SLR to 30 degrees hip flexion MAX
  -SAQ with hip flexion angle below 30 degrees
  -Sidelying hip abduction
  -Prone quad strengthening
  -Lumbopelvic stabilization
  -Single and double-limb balance and proprioception
- **Manual Considerations:** scar massage, TFL/ITB, quads, gluteals, QL, lumbar paraspinals, posterior thigh, and calves
- Modalities for pain control and swelling as appropriate

Phase II – Intermediate Rehabilitation (weeks 6-10)

Criteria for progression to Phase II:

- Full weight bearing must be achieved prior to progressing to phase II, including ambulation with low pain levels and minimal gait deviation.

Goals:

- Protection of repaired tissue
- Restore full hip ROM – **ROM must come before strengthening**
- Progressive strengthening of hip, pelvis, and lower extremities
- Restore normal gait pattern
- Restore muscular strength and endurance
- Restore cardiovascular endurance

Precautions:

- No forced/aggressive stretching of any muscles
- Avoid any terminal ranges of motion during exercises
- No contact activities

Weeks 6-10 Exercises:

- Continue with previous exercises, stretches as appropriate to maintain ROM/flexibility throughout strengthening, as patients will often tighten as they gain strength.
- Gait training to normalize mechanics
- Beginning at 6 weeks and progressing through 12 weeks: WB exercises (side stepping with resistance, mini squats, grapevines, etc.) aquatic therapy
- **Week 6:**
  -D/C brace after 6 weeks
  -May add stationary bike at 6 weeks if patient has achieved 90° hip flexion and can do supine SLRs with minimal/no pain
  -Supine SLR to 45 degrees hip flexion MAX
  -Submax hamstring isometrics, multi-angle, avoiding lengthened hamstring position
  -Supine transverse abs isometrics
  -Standing calf raises, resistance band TKEs
  -Treadmill with appropriate gait pattern
- **Weeks 7-8**
  -Isotonic strength training progressed
  -Dynamic training advanced
  -Isokinetic work and dynamic stretching
- **Weeks 9-12 (if LE strength is at least 4/5)**
  -Clamshells, supine physioball bridge with and without hamstring curl
  -Closed chain progressions
  -Resisted lateral walking
  -Progress to hamstring strengthening in lengthened position

-Elliptical, stairmaster

- **Week 12**
  -Eccentric HS strengthening

Phase III – Advanced Rehabilitation, Return to Sport

Criteria for progression to Phase III:

- AROM symmetrical to non-operative side
- Normalized gait pattern
- Hip flexor strength ≥4/5
- Hip abduction, adduction, extension, ER and IR strength of ≥4+/5
- SLS balance 30 seconds without LOB
- Medial tap down without valgus collapse

Goals:

- Full (5/5)/Symmetrical muscular strength
- Restoration of pre-operative cardiovascular endurance

Precautions:

- No contact activities
- No stretching into pain or pinch
- Use clinical judgement to determine if jump/hop/jog training appropriate for patient lifestyle and goals

Exercises Weeks 12-18:

- **Squat progression** (Functional Test: Star Excursion Balance Test or Single leg squat test)
  - Double leg press→ Double leg squat→ Single leg mini squat on total gym with partial weight → Single leg mini squat in standing → Lunges in all directions→Single leg squat within controllable range → single leg squat on unstable surface
- **Jump Progression** (Functional Test: 10 sec tuck jump)
  - Double leg hop on total gym with partial weight → Double leg hop on trampoline → Double leg hop on hard surface → Double leg vertical jump → Double leg tuck jump with controlled landing and even weight distribution
  - Depth jumps off of block
  - Box Jumps with even weight distribution
- **Hop Progression** (Functional Test: Hop tests x 4)
  - Single leg hop in place (vertical→ forward/backward over line→side to side over line)
  - Single leg hop for distance
  - Triple hop for distance

    - Consecutive single leg forward hops
    - Consecutive single leg cross over hops
- **Jog Progression**
    - Complete the following with good technique and without pain prior to adding jogging:
        - Ladder drills (lateral, anterior, z cuts)
        - Carioca
        - Slide board 50% max speed → full speed
        - Elliptical with resistance
    - Walk to Run Progression
        - **Phase I**: Run 1 minute, Walk 1-5 minutes, Repeat 2x
        - **Phase II**: Run 2 minute, Walk 1-4 minutes, Repeat 2x
        - **Phase III**: Run 3 minute, Walk 1-3 minutes, Repeat 2x
        - **Phase IV**: Run 4 minute, Walk 1-2 minutes, Repeat 2x
        - **Phase V**: Run 5 minute, Walk 1 minutes, Repeat 2x

****Complete each phase for 2 days. Do not progress to the next phase if you experience an exacerbation of pain.****

Source:https://osuwmcdigital.osu.edu/sitetool/sites/sportsmedicinepublic/documents/rehab_protocols/2012_return_to_running_basic.pdf

Revisions approved by Dr. Laskovski 7-7-17