

POST-OPERATIVE REHABILITATION PROTOCOL

Proximal Hamstring Repair

William McLaughlin, MD | Sports Medicine Surgery | Advanced Bone & Joint

Note: Formal physical therapy typically begins at 4-6 weeks post-op. Patients perform a home program (DVT prevention and isometric exercises) prior to that to allow time for optimal healing.

Phase 1 | Weeks 1-6

GOALS FOR THIS PHASE

- Protect the repaired tendon(s).
- Pain control.
- Touch-down weight bearing for weeks 0-2.
- Brace locked at 45-50° at all times until weeks 4-6 (per surgeon).
- Avoid hip flexion coupled with knee extension (hamstring stretch).

Weight Bearing & Bracing

- Use axillary crutches for up to 8 weeks.
- Weeks 0-2: touch-down weight bearing.
- Hinged knee brace locked at 45-50° at all times until weeks 4-6 (based on physician order).

Precautions

- Avoid hip flexion coupled with knee extension (hamstring stretch).
- Avoid unsafe surfaces and environments.

Therapeutic Exercises

- Quad sets.
- Ankle pumps.
- Abdominal isometrics.
- Passive knee ROM with no hip flexion during knee extension.
- Weeks 3-4: pool walking drills (if incision healed, without hip flexion coupled with knee extension), hip abduction, hip extension, and balance exercises.
- Scar mobilizations.

Cardiovascular

- Upper-body circuit training or upper-body ergometer (UBE).

Progression Criteria

- 6 weeks post-operative.

Phase 2 | Begin at ~6 Weeks | 2x/week x 5-12 Weeks

GOALS FOR THIS PHASE

- Unlock hinged knee brace progressively (30° → 0°).
- Progress weight bearing as tolerated; wean from crutches.
- Normalize gait.
- Achieve good control with functional movements (step-up/down, squat, partial lunge < 60° knee flexion).
- Avoid loading hip at deep flexion angles or impact.

Bracing & Weight Bearing

- Weeks 4-8: unlock hinged knee brace to 30° flexion for several days, then 0°.
- Progress weight bearing as tolerated; wean from crutches.

Precautions

- Avoid dynamic stretching.
- Avoid loading the hip at deep flexion angles.
- No impact or running.

Therapeutic Exercises

- Non-impact balance and proprioceptive drills — DL progressing to SL.
- Stationary bike.
- Gait training.
- Begin hamstring strengthening — avoid lengthened hamstring position (hip flexion + knee extension) by working hip extension and knee flexion separately.
- Begin isometric and concentric strengthening: hamstring sets, heel slides, double-leg bridge, standing leg extensions, physioball curls.
- Hip and core strengthening.

Cardiovascular

- Upper-body circuit training or UBE.

Progression Criteria

- Normal gait on all surfaces.
- Functional movements without unloading affected leg or pain.
- Single-leg balance > 15 seconds.
- Normal (5/5) hamstring strength in prone with knee in ≥ 90° flexion.

Phase 3 | ~3 Months | 2x/week x 12-16 Weeks

GOALS FOR THIS PHASE

- Good control and no pain with sport- and work-specific movements including impact.
- Progress hamstring strengthening toward lengthened positions and eccentric loading.
- Begin impact and movement control progression.
- Initiate running drills.

Precautions

- No pain during strength training.
- Post-activity soreness should resolve within 24 hours.

Therapeutic Exercises

- Progress hamstring strengthening toward lengthened positions; incorporate eccentric (single-leg forward leans, single-leg bridge lowering, prone foot catches, assisted Nordic curls).
- Hip and core strengthening.
- Impact control: 2-foot to 2-foot → 1-foot to other → 1-foot to same foot.
- Movement control: low-velocity single-plane → higher-velocity multi-plane.
- Initiate running drills (no sprinting until Phase 4).

Cardiovascular

- Biking, elliptical, StairMaster, swimming, deep-water running.

Progression Criteria

- Dynamic neuromuscular control with multi-plane activities at low to medium velocity without pain or swelling.
- < 25% side-to-side hamstring deficit on Biodex testing at 60° and 240°/sec.

Phase 4 | 4-5 Months | 1-2x/week x 16+ Weeks

GOALS FOR THIS PHASE

- Good control and no pain with sport- and work-specific movements including impact.
- Progress hamstring strengthening to higher velocity and reaction in lengthened positions.
- Build running and sprinting mechanics.
- Replicate sport-specific energy demands.

Precautions

- No pain during strength training.
- Post-activity soreness should resolve within 24 hours.

Therapeutic Exercises

- Progress hamstring strengthening: single-leg forward leans with medicine ball, single-leg deadlifts with dumbbells, single-leg bridge curls on physioball, resisted running foot catches, Nordic curls.
- Running and sprinting mechanics and drills.
- Hip and core strengthening.
- Impact control exercises advancing from 2-foot to 2-foot through 1-foot to same foot.
- Movement control from low to high velocity, single to multi-plane.
- Sport/work-specific balance and proprioceptive drills.
- Stretching for patient-specific muscle imbalance.

Cardiovascular

- Replicate sport- or work-specific energy demands.

CRITERIA FOR RETURN TO SPORT / FULL ACTIVITY

- Dynamic neuromuscular control with multi-plane activities at high velocity without pain or swelling.
- < 10% side-to-side hamstring deficit on Biodex testing at 60° and 240°/sec.
- < 10% deficit on functional testing profile.

This protocol is a general guideline. Progression is patient-specific and at the discretion of William McLaughlin, MD.