



Open Proximal Hamstring Repair Rehabilitation Protocol

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Diagnosis: Proximal Hamstring Rupture

Brace: Locked in 45-50° of knee flexion for 6 weeks.

Phase I: Weeks 0-6 (Home)

- **Weight Bearing:** Toe touch weight bearing with crutches/walker x 6-8 weeks
- **Brace:** hinged knee brace locked at 40-50 degrees of flexion at all times until week 6
 - Week 0-2: locked at 50 degrees
 - Week 2-4: locked at 45 degrees
 - Week 4-6: locked at 40 degrees
- Formal PT deferred until **6 weeks post-op**
- DVT prevention – ankle pumps, leg elevation, Aspirin 2x daily (every 12 hours)
- Precautions
 - **AVOID** hip flexion coupled with knee extension (hamstring stretch)
 - **AVOID** unsafe surfaces and environments
- Suggested Therapeutic Exercises
 - Quad sets
 - Ankle pumps
 - Abdominal isometrics
 - Passive knee ROM without hip flexion during knee extension
 - Scar mobilizations
 - **Cardiovascular Exercise:** Upper body circuit training or upper body ergometer (UBE)
 - **Post-operative weeks 3-4:** Begin pool walking drills (if incision healed, without hip flexion coupled with knee extension), hip abduction, hip extension, and balance exercises
 - **Progression Criteria:** 6 weeks post-operative

Phase II: Weeks 6-12 (Start Formal Physical Therapy)

- **Rehabilitation Goals**
 - **Post-operative weeks 4-8:** Unlock hinged knee brace to 30 degrees flexion for several days, then 0 degrees flexion/extension. Progress to partial weightbearing (PWB) 25% then 50% then weight bearing as tolerated with weaning from crutches
 - Normalize gait
 - Good control and no pain with functional movements, including step up/down, squat, partial lunge (do not exceed 60° of knee flexion)
- **Precautions**
 - **AVOID** dynamic stretching
 - **AVOID** loading the hip at deep flexion angles
 - **NO** impact or running



- **Suggested Therapeutic Exercises**

- Non-impact balance and proprioceptive drills – beginning with double leg with gradual progression to single leg
- Stationary bike
- Gait training
- **Begin hamstring strengthening** – start by avoidance of lengthened hamstring position (hip flexion combined with knee extension) via working hip extension and knee flexion moments separately
 - Begin with isometric and concentric strengthening with hamstring sets, heel slides, double leg bridge, standing leg extensions, and physioball curls
- Hip and core strengthening
- **Cardiovascular Exercise:** Upper body circuit training or UBE
- **Progression Criteria**
 - Normal gait on all surfaces
 - Ability to carry out functional movements without unloading the affected leg or pain while demonstrating good control
 - Single leg balance >15 seconds
 - Normal (5/5) hamstring strength in prone with the knee in a position of at least 90° knee flexion

Phase III: Weeks 12-16

- **Rehabilitation Goals**

- Good control and no pain with sport and work specific movements, including impact

- **Precautions**

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

- **Suggested Therapeutic Exercise**

- **Continue/advance hamstring strengthening** – progress toward strengthening in lengthened hamstring positions
 - Begin to incorporate eccentric strengthening with single leg forward leans, single leg bridge lowering, prone foot catches, and assisted Nordic curls
- Hip and core strengthening
- **Impact control** exercises: 2 feet to 2 feet → 1 foot to the other → 1 foot to same foot
- **Movement control** exercises: low velocity / single plane activities → higher velocity, multi-plane activities
- Initiate running drills (***NO sprinting until Phase IV***)
- **Cardiovascular Exercise:** Biking, elliptical machine, Stairmaster, swimming, and deep water running
- **Progression Criteria**
 - Dynamic neuromuscular control with multi-plane activities at low/medium velocity without pain or swelling
 - **< 25%** deficit for side to side hamstring comparison on Biodex testing at 60° and 240° per second



Phase V: Weeks 16-24

- **Rehabilitation Goals**
 - Good control and no pain with sport and work specific movements, including impact
- **Precautions**
 - No pain during the strength training
 - Post-activity soreness should resolve within 24 hours
- **Suggested Therapeutic Exercise**
 - **Continue/advance hamstring strengthening** – progress toward higher velocity strengthening and reaction in lengthened positions, including:
 - Eccentric strengthening with single leg forward leans with medicine ball, single leg dead lifts with dumbbells, single leg bridge curls on physioball, resisted running foot catches, and Nordic curls
 - Running / sprinting mechanics and drills
 - Hip and core strengthening
 - **Impact control exercises:** 2 feet to 2 feet → 1 foot to the other → 1 foot to same foot
 - **Movement control exercises:** low velocity / single plane activities → higher velocity, multi-plane activities
 - Sport/work specific balance and proprioceptive drills
 - Stretching for patient specific muscle imbalances
 - **Cardiovascular Exercise:** Replicate sport or work specific energy demands
 - **Return to Sport/Work Criteria**
 - Dynamic neuromuscular control with multi-plane activities at high velocity without pain or swelling
 - **< 10%** deficit for side to side hamstring comparison on Biodex testing at 60° and 240° per second
 - **< 10%** deficit on functional testing profile



Exercise	Week															
	1	2	3	4	5	6	7	8	9	10	12	16	20	24		
Initial Exercises:																
Scar mobilization																
Quad Series																
Abdominal isometrics																
Passive knee ROM (no hip flex w/ knee ext.)																
Ankle Pumps																
Crutch weaning																
PROM hip extension, abduction																
Non-impact Balance/Proprioceptive drills																
Hip and Core strengthening																
Weight-bearing Strength Exercises:																
Standing leg extensions																
Double Leg Bridges																
Physioball curls																
Single leg forward leans																
Single Leg Dead Lift																
Nordic curls																
Sports Test Exercises																
Cardiovascular Exercises:																
Bike with both legs-no resistance																
Bike with both legs-resistance																
Upper body circuit training																
Aqua walking (pending incision healing)																
Treadmill-walking 7% incline																
Swimming and deep water running																
Elliptical Trainer																
Rowing																
Stair stepper																
Agility Exercises:																
Running Progression																
Initial-Single Plane																
Advance-Multi Directional																
Functional Sports Test																
High Level Activities:																
Golf Progression																
Outdoor biking, hiking, running																
Return to Full Sport at 6 months post-op																

Adapted from post-operative protocol from Dr. Jorge Chahla created by Howard Head Physical Therapy, Jill Monson, PT, OCS and Jon Schoenecker, PT, OCS, CSCS