

Proximal Hamstring Repair Protocol

Proximal hamstring repair, sciatic neurolysis, posterior femoral cutaneous neurolysis

Frequency: 2 times / week

Duration: 3-9 months

GOALS:

- Protection Phase: Protect the repair by unloading the entire hamstring tendon-muscle complex
- Functional Mobility Phase: Ensure normal gait, begin gentle concentric hamstring activation
- Transition to Sports Phase: Increase hamstring strength, begin jogging / running program
- Return to Sports Phase: Once healing is completed, enable return to function, activities, and recreational and competitive sport(s)

PRECAUTIONS:

- **No** active hamstring at any point during the first 6 weeks following surgery
- **No** active knee flexion at any point during the first 6 weeks following surgery
- **No** passive hamstring stretch (knee extension and hip flexion) at any point during the first 3 months
- **Do not** push through pain at the hamstring origin / ischial tuberosity during the first 3-4 months after surgery
- **No** dry needling until at least 6 weeks following surgery
- **No** blood-flow restriction with thigh tourniquet until at least 8 weeks following surgery

PHASE 1: 0 to 6 weeks – Protection Phase

- Begin physical therapy two weeks after surgery
- Use crutches, begin mobilization (walking) the day of surgery, foot-flat partial weight bearing (no more than 20 lbs)
 - If Dr. Vera recommends a knee brace at nighttime, this should be used for 6 weeks
 - Knee brace should be locked at 45 degrees of flexion for 6 weeks
- Use DVT (deep vein thrombosis) blood clot prevention boots at nighttime while sleeping for the first 6 weeks
- Use ice packs, cryotherapy machine for the first 4 weeks following surgery to reduce swelling and reduce pain
- A donut or soft pillow can help with seated positions, including at home, car, work, school, etc.
- May begin driving 2 weeks after surgery (left hamstring) or 4 weeks after surgery (right hamstring), as long as not taking opioid pain medications
- Bathroom use: Elevated toilet seat is helpful. Avoid stretching the hamstring while seated (hip flexion and knee extension).
- Ankle pumps, quad sets, glute sets, supine isometric transversus abdominis, supine isometric rectus abdominis
- Passive motion, prone:
 - 0 to 3 weeks: 90 - 45 degrees knee flexion
 - 3 to 6 weeks: 90 - 10 degrees
 - > 6 weeks: Full knee motion
- Active motion:
 - 0 to 6 weeks: For hamstrings (hip extension, knee flexion): None
- Gentle sciatic nerve glides without any hamstring stretch – Critically important to ensure not stretching hamstring
 - This should be painless; if there is pain, do not continue
 - Encourage muscle relaxation, especially iliopsoas, quadriceps, hamstring, ankle dorsiflexion
 - Ensure slow deep breaths, do not hold breath

PHASE 2: 6 weeks to 3 months – Functional Mobility Phase

- Walking: **No brace**
 - 50% partial weight-bearing (6-7 weeks), full weight-bearing as tolerated (7-8+ weeks)
 - No crutches after 8 weeks – wean off, beginning at 6 weeks, normal gait by 8 weeks goal
- Sleeping: No brace
- Passive motion: Full motion, except – no forced hamstring stretch until at least 3 months following surgery
- Active motion:
 - Gentle isometric hamstring at 90 degrees knee flexion (6-7 weeks)
 - Isotonic concentric knee flexion 60 to 90 degrees (7-8 weeks) against gravity only without added resistance or weight
 - Isotonic concentric knee flexion 30 to 90 degrees (8-9 weeks) against gravity only without added resistance or weight
 - Isotonic concentric knee flexion 0 to 90 degrees (9-10 weeks) against gravity only without added resistance or weight.
- Begin stationary bike at 6-8 weeks post-op (depending on sitting tolerance on seat), low resistance, use contralateral limb to propel the pedal for first 1-2 weeks
- May walk in pool beginning at 6 weeks, no jogging, no jumping, no running
- Begin light swimming at 8 weeks post-op, using arms with buoy between ankles/feet for first 2 weeks
- Gentle isometric adductor long-lever and short-lever may begin at 6 weeks. Adductor magnus connection to inferomedial proximal hamstring may aggravate hamstring symptoms – if this occurs, reduce adductor activation
- Double leg bridges begin at 8 weeks
- Single leg bridges begin at 12 weeks
- Single leg stance (level ground, shoes on, eyes open, ensure good balance without pelvic drop / Trendelenburg) begins at 6 weeks, 15 second holds, increase in 15 second increments, goal 1 minute within 2-4 weeks.
- Body weight mini squats (to 45 degrees) begin at 8 weeks
- Elliptical may begin at 10 weeks, if pain-free

PHASE 3: 3 – 4.5 months – Transition to Sports Phase

- Continue phase 2 strengthening, add resistance/weight to isotonic concentric knee flexion
- Squat progression - begin lightweight, high-repetition and advance weight slowly as tolerated. Ensure proper form, if anterior hip/groin pain appears with increasing squat depth, then reduce squat depth
- Walking: Normal
- Passive motion: Full
- Active motion: Full
- Continue bike
- Begin jogging per return to running program (see separate program) – Phase 1 only at jog pace
- Begin Copenhagen adductor program, Phase 1-3, advance as tolerated over 6 weeks to 3 months, ensure symmetry

PHASE 4: > 4.5 months – Return to Sports Phase

- Normal strength, symmetric
- Normal lumbopelvic, hip, knee, and ankle active and passive motion, symmetric
- Plyometric program, as needed for return to sport
- Continue return to running program (see separate program) – Phase 2-3, advanced as tolerated over 2-6 months, to desired weekly mileage, pace, race-specific training
- Begin Russian and Nordic eccentric hamstring program, per Aspetar guidelines, advance as tolerated over 6 weeks to 3 months, ensure symmetry
- Begin hamstring stretching at 4.5 months post-op
- Continue Copenhagen adductor program