Cleveland Clinic
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Physical Therapy Protocol: Quadriceps Tendon Repair

Phase 1: Weeks 0 through 6 – Reduce Inflammation & Protect the Repair

Physician Goals: Decrease postoperative inflammation and pain, protect the quadriceps tendon repair which is at its most vulnerable during this phase of healing
Restrictions: Weight bearing as tolerated, brace on at all times, brace locked in full extension when ambulating for the full 6 weeks, locked in full extension when sleeping for full 6 weeks, ROM restrictions during PT/HEP: Locked at all times for first two weeks; 0 to 30 degrees weeks 2-4, 0 to 60 degrees weeks 4-6
Exercises: Patella mobilization, prone lying, supine with logroll under heel, gentle stretching to achieve full extension – prone lying with heel off bed or supine with logroll under heel, straight leg raises with brace locked in full extension, quad and hamstring isometrics, gastroc and hamstring stretching, floor-based body weight glute, hip, and core strengthening
Total Visits: 12 – once to twice per week with daily at home range of motion exercises, quad sets, ankle pumps

Phase 2: Weeks 6 through 12 – Regain Range of Motion

Physician Goals: Regain full range of motion, continue to work on volitional quad activation, normalize gait
Restrictions: Weight bearing as tolerated in brace locked in full extension for walking; OK to unlock brace at night for sleep and for physical therapy, no range of motion restrictions when nonweightbearing
Exercises: Heel slides, full arc active quad extension without resistance once full ROM restored, begin stationary bike, swimming/aquatic therapy OK, advance hip/core/glute strengthening, double leg quad strengthening with mini-squats/weight shifts, passive BFR at 100% LOP, 5-minute occlusion, 3-minute reperfusion cycles No exercise required during this phase. Focus on mitigating muscle atrophy
Total Visits: 12 – once to twice per week depending on patient's ability to perform HEP independent of PT sessions

Phase 3: Weeks 12+ – Regain Strength and Return to Recreation

Physician Goals: Normalize gait, wean from hinged knee brace completely, build lower extremity strength and endurance in anticipation of returning to recreational activities and/or sports, transition from formal PT to home exercise program alone
Restrictions: Begin ambulating with brace unlocked when volitional quad function normalizes, and then wean from brace; return to running, cutting/agility work, and sports per criteria below
Exercises: Progress lower extremity strengthening without restrictions, initiate plyometric program based on patient needs, begin single leg balance/strengthening exercises, begin endurance training with elliptical, continue to advance hip/core/glute strengthening, BFR with OKC exercises at 80% LOP, 30-15-15-15 rep scheme with gradual progression to 20-30% 1 rep max resistance
Total Visits: 12 – once to twice per week depending on patient's ability to perform HEP independent of PT sessions

Return to Running Criteria:

- ☐ Trace effusion, flexion within 5° of contralateral side
- ☐ Limb symmetric index (LSI) on anterior reach Y balance test ≥ 90%
- ☐ LSI on quadriceps torque output on isometric measurement ≥ 75%
- ☐ 12” single leg squat tolerance with good hip control
- ☐ Able to walk > 1 mile with no limping or pain
- ☐ Able to “hop” with upper extremity assistance on operative leg 5 times without pain or compensation
- ☐ Single leg balance with eyes closed ≥ 30 seconds

Return to Cutting / Agility Training Criteria:

- ☐ Return to running criteria met above
- ☐ No effusion
- ☐ Full range of motion
- ☐ Quad LSI on isokinetic ≥ 85%
- ☐ Hamstring LSI on isokinetic ≥ 85%
- ☐ LSI on anterior reach Y-balance ≥ 95%
- ☐ Single leg hopping pain free

Return to Sport Criteria:

- ☐ LSI ≥ 95% hamstring curl and leg press
- ☐ Able to perform single leg squat to 75° with correct form
- ☐ Single leg hop LSI ≥ 95%
- ☐ Y-balance ≥ 95% (mean of 3 trials in anterior, posterolateral and posteromedial ÷ 100)
- ☐ Vertical jump test, single leg hop distance, and timed single leg hop over 20 feet ≥ 90% contralateral side