

Physical Therapy Protocol: ACL Reconstruction

Phase 1: Weeks 0 through 6 – ACL Reconstruction Protection, Quad Activation, Motion Recovery

Physician Goals: Protect the ACL reconstruction, which is at its most vulnerable during this time, decrease pain, prevent significant stiffness, reactivate the quadriceps muscle group

Restrictions: Weight bearing as tolerated, brace on at all times, no range of motion restrictions, brace locked in full extension for sleep

Exercises: Patella mobilization, quad sets with brace locked at 0°, straight leg raises with brace locked in full extension until quad control is good, then straight leg raises unlocked, heel slides, ankle pumps, body weight core strengthening, isometric knee extensions (90-45°), no-load full-ROM knee extensions, progress to weighted knee extensions (1-2 lbs increments; must be pain free), Passive BFR at 100% LOP, 5-minute occlusion, 3-minute reperfusion cycles No exercise required during this phase. Focus on mitigating muscle atrophy; Weeks 4+ BFR with OKC exercises at 80% LOP, 30-15-15-15 rep scheme Gradual progression to 20-30% 1RM resistance. Avoid graft site irritation and monitor patient tolerance. NMES during OKC exercises Parameters: 2-second ramp-up, 10-second contraction, 50-second rest

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 – Early Strength Recovery

Physician Goals: Begin to build lower extremity strength and endurance while minimizing impact, discontinue brace completely

Restrictions: No running, jumping, cutting or pivoting

Exercises: Short arc squats/weight shifts, start proprioceptive training, initiate step-up program and progress to step-down program, leg press, lunges, isotonic knee extensions, stationary bike with low resistance, retrograde treadmill ambulation, advance hip/core/glute strengthening; continue BFR with OKC exercises at 80% LOP, 30-15-15-15 rep scheme with gradual progression to 20-30% 1 rep max resistance. NMES with advanced resistance exercises Adjust intensity as needed for strength recovery; ensure proper patient comfort. Swimming / aquatic cardio OK at this phase

Total Visits: 12 – once to twice per week depending on patient's ability to perform HEP independent of PT sessions

Phase 3: Weeks 12 through 24 – Strength & Endurance Recovery

Physician Goals: Increase strength throughout the entire range of motion without restrictions, begin to regain endurance

Restrictions: No cutting or pivoting

Exercises: Progress lower body strengthening with no restrictions, elliptical, return to run program beginning at 16 weeks, jump training beginning at 20 weeks, continue to emphasize core/hip/glute strengthening, **Biodex testing once 6 months postop**

Total Visits: 24 – once to twice per week depending on patient's ability to perform strength training independently – goal is strengthening 3-4x per week

Phase 4: 6 months to 8 months – Prepare to Return to Sport

Physician Goals: Use data from Biodex testing at 6 months to address residual muscular imbalance or weakness, continue to improve strength and conditioning in anticipation of full clearance at 8 months

Restrictions: No contact sports or contact sporting activities

Exercises: Exercises tailored to results of Biodex testing, plyometrics, cutting/pivoting/agility drills without restriction

Total Visits: 16 – once to twice per week depending on patient's ability to perform strength training independently – goal is strengthening 3-4x per week