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WOODSON TIBIAL TUBERCLE OSTEOTOMY & MPFL REHAB PROTOCOL

General Info:

This is a list of general guidelines for a tibial tubercle osteotomy and medial patellofemoral ligament (MPFL) repair rehab program. These guidelines may change based on fixation, condition of repaired tissue, variations in surgical procedures, age, and patient's response to treatment. Please call our office if there are any questions.

Post-Op Weeks 0-6: Phase I

- ROM:
 - 0-1 weeks: flexion to 30°
 - 1-2 weeks: gradually progress flexion to 60°
 - 2-4 weeks: gradually progress flexion to 90°
 - 4-6 weeks: gradually progress flexion to 120°
- Weight Bearing:
 - 0-2 weeks: toe-touch weight bearing
 - 2-6 weeks: partial weight bearing
 - 6+ weeks: weight bearing as tolerated
- Brace Use:
 - 0-2 weeks: brace locked in extension, crutches for 6 weeks
 - 2-6 weeks: unlock brace 30° each week with good quadriceps control
- Strengthening and Conditioning:
 - 0-2 weeks: quad sets
 - 2-6 weeks:
 - Quad sets
 - Straight leg raises
 - Upper body ergometer
- Criteria for progression to Phase II:
 - Within 2° of normal knee extension and > 90° of normal knee flexion
 - < 2/10 pain at rest
 - Straight leg raises without quad lag
 - MD approval

Post-Op Weeks 7-10: Phase II

- ROM: gradually progress flexion to full
- Weight Bearing: weight bearing as tolerated
- Brace Use: progress to full with good quadriceps control
- Strengthening:
 - 7-8 weeks:
 - Quad sets
 - Leg raises
 - Hip and core strengthening
 - Side planks
 - Gait training
 - Single leg balance

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- 9-10 weeks:
 - Continue previous
 - Short and long arc quad exercises
 - Partial range leg press (light)
 - Step-ups (6" or less)
 - PSOAS and posterior chain flexibility
- Conditioning:
 - Upper body ergometer
 - Biking when > 115° flexion
- Criteria for ambulation without assistive device:
 - 7 weeks post-op
 - >2/10 pain
 - Within 2° normal knee extension and 120° normal knee flexion
 - Single leg balance > 20 sec (BESS)
 - MD approval

Post-Op Weeks 11-18: Phase III

- ROM:
 - Maintain ROM
- Strengthening:
 - 11-13 weeks:
 - Continue previous
 - Squat progression (partial range → bodyweight squats)
 - 13-16 weeks:
 - Continue previous
 - Single leg squats
 - Small hops in place
 - Jump rope
- Conditioning:
 - 11+ weeks:
 - Stationary biking
 - Elliptical
 - Rowing machine
 - Swimming
- Criteria for Jogging:
 - 16 weeks post-op
 - > 3/10 pain at rest
 - Within 2° normal knee extension and 125° normal knee flexion
 - At least 1 minute of single leg squats
 - MD approval

Post-Op Weeks 19-24: Phase IV

- Strengthening:
 - Gym specific strengthening (barbell squats and deadlifts)
 - Biodex quad and hamstring fatiguing protocols
 - Core exercises (mountain climbers, planks, v-ups)
 - Single leg squatting to fatigue

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- Conditioning:
 - Road or stationary biking
 - Jogging program
- Plyometrics and light agility:
 - Ladder drills
 - Box jumps (up/down to 24")
 - Broad jump
 - Vertical jumps
 - Hop progression
- Criteria for Heavy Agility and Sport Specific Movements:
 - 20 weeks post-op
 - > 2/10 max pain
 - Quad & hamstring strength > 80% normal; >50% H/Q ratio for females
 - At least 2 minutes of single leg squats (resisted)
 - < 5 on landing error scoring system (LESS)
 - MD approval

Post-Op Weeks 24+: Return to Play

- Strengthening:
 - Progress gym routine (squats, deadlifts, Olympic lifting)
 - Biodex quad and hamstring fatiguing protocols
 - Core exercises (mountain climbers, planks, v-ups)
- Conditioning:
 - Jogging, biking and swimming
 - Interval sprint workouts
- Plyometrics and light agility (2-3 days/week):
 - Max effort box jumps (progress with rotation)
 - Lateral and rotational agility
 - Single-leg hops testing
 - Unpredictable cutting and contact drills

Criteria for Return to Play:

- Quad & hamstring strength > 90% normal; >60% H/Q ratio for females
- At least 3 minutes of single leg squats (resisted)
- > 2/10 max pain
- 90% normal on all single-leg hop tests
- 95% normal on figure-of-8, 5-10-5 pro-agility and S-L vertical jumps
- MD approval