

Rehabilitation Following Unilateral Quadriceps Tendon Repair

I. Immediate Postoperative Phase (Days 1-7)

- Goals:
- Restore full passive knee extension
 - Diminish pain and joint swelling
 - Restore patellar mobility
 - Initiate early controlled motion
 - *Controlled forces on repair site

Postoperative Days 1-4

- Brace: Drop locked brace locked at 0° extension with compression wrap
Sleep in brace
- Weight bearing: Toe touch WB with two crutches
- Range of motion: 0-30°
CPM 0-45° as tolerated
- Exercises: Ankle pumps
Quad sets
Patellar mobilization
Hip abd/adductions
- Ice and elevation: 20 minutes of each hour at elevate

Postoperative Day 4-7

- Continue use of brace (sleep in brace locked)
- Weight bearing: Locked brace two crutches WBAT
- Range of motion: 0-45°
CPM 0-75° as tolerated
- Exercises: Continue all listed exercises
Initiate gravity eliminated SLR flexion (assisted)

- Continue ice and elevation

II. Maximum Protection Phase (Weeks 2 to 6)

Goals: Control forces on healing tendon
Gradually increase knee flexion
Restore full passive knee extension
Restore patellar mobility
Retard muscular atrophy

Week 2:

- Brace: Continue use of locked brace (6 weeks)
Sleep in brace (6 weeks)
- Weight bearing: WBAT (usually 50-75% BW)
- Range of motion: PROM knee flexion only 0-60°
Full passive knee extension
Patellar mobilization
- Exercises: Electrical muscle stimulation to quads
Quad sets
Ankle pumps
Hip abd/adductions
Gravity eliminated SLR flexion
- Continue ice, elevation and compression

Week 3:

- Continue above mentioned exercises
- ROM: 0-75°
- Continue use of two crutches – 75-80% BW

Week 4:

- Continue all exercises listed above

- Weight bearing: Progress to one crutch (at 28 days)
- PROM: 0-75°
- Exercises: Initiate mini-squats (0-45°)
Initiate weight shifts
Initiate proprioception drills

Weeks 5-6:

- Discontinue use of crutch at 5 weeks postop
- Unlock brace for ambulation at 6 weeks
- Range of motion: PROM
Week 5: 0-80°
Week 6: 0-90°
- Exercises: Initiate pool exercise program
Active knee extension 90-30°
Multi-angle isometrics knee extension (subnex)
Continue all exercises listed above
Initiate anti-gravity SLR flexion
- Continue ice, compression and elevation as needed

III. Moderate Protection Phase (Weeks 7-16)

- Goals: Control forces during ambulation and ADL's
Progress knee flexion ROM
Improve lower extremity muscular strength
Restore limb confidence and function

Weeks 7-10:

- Brace: Use postop brace unlocked for ambulation until 7-8 weeks
(or until determined safe)
Discontinue sleeping in brace
- Range of motion: Week 7: 0-95/100°

Week 8: 0-100/105°

Week 10: 0-115°

- Exercises:
 - *Gradually increase muscular strength
 - Straight leg raises (flexion)
 - Hip abd/adduction
 - Knee extension 90-0
 - ½ squats
 - Leg press
 - Wall squats
 - Front lunges
 - Lateral lunges
 - Calf raises
 - Hamstring curls (restricted ROM)
 - Proprioception drills
 - Bicycle
 - Pool program

Weeks 12-16:

- Range of motion: Week 12: 0-125°
- Exercises:
 - *Continue all exercises listed above
 - Initiate lateral step-ups
 - Initiate front step-downs
 - Initiate backward lunges
 - Walking program
 - *No sports!

IV. Light Activity Phase (Months 4-6)

Goals: Enhancement of strength, endurance
Initiate functional activities
Improve tensile strength properties of tendon

- Exercises:
 - Continue strengthening exercises
 - Continue emphasis on eccentrics and functional exercises
 - *May initiate plyometrics (month 5)
 - *May initiate agility drills (lateral shuffle) month 5
 - *If appropriate!
 - *May initiate light running months 5-6

V. *Return to Sport Activity Phase (Months 7-9)*

Criteria to Return to Activities:

1. Satisfactory clinical exam
2. Satisfactory strength
3. Proprioception test 80% > of opposite leg
4. Appropriate rehab progression

Goals: Gradual return to full-unrestricted sports
Continue strength program
Continue functional/agility drills

Exercises: Continue strengthening exercises
Continue agility program
Continue sport specific training