

Post-Operative Rehabilitation for Arthrofibrosis

Phase I: Extension Phase

- ***Emphasis on ROM and pain/swelling control***
- Typically minimal activities for first 5 days post-op to minimize swelling.
- Keep leg in CPM and with ice on nearly continuously for first 5 days
- Continue with use of ice machine after therapy and frequently throughout the day thereafter
- Weight bearing as tolerated, however up only for bathroom/eating for first several days post-op
- Crutches are used until quad control and gait normalize (no extensor lag).
- Emphasis is on regaining/maintaining full terminal extension
 - First goal is symmetric extension (including hyperextension)
 - It is often counterproductive to work on both flexion and extension at the same time.
 - Once normal extension is achieved, progression of flexion ROM can be initiated
- Elite Seat 10-15 minutes, 4-5 times per day
- Heel props, prone hangs (4-5 times/day *after* Elite Seat usage, 10 min each)
- Encourage patient to put full weight on leg and lock knee into hyperextension
- Prone hangs, towel stretches, quad sets



Figure 4. In prone position, the patient suspends both knees off the edge of a table, allowing the knees to passively extend. A weight may be added to the ankle to increase the stretch. This exercise is performed for 10 minutes 3 to 4 times per day.



Figure 2. The patient holds on to the ends of a towel that is wrapped around the ball of the foot. While using 1 hand to hold part of the leg above the patella down on the table, the other hand pulls the ends of the towel so that the knee is hyperextended and the heel lifts off the table. This stretch is held for 10 seconds and the patient performs 10 repetitions 3 to 4 times per day.



Figure 6. Patient activates the quadriceps muscle in order to raise the heel off the table.

(Images from Biggs-Kinzer A, et al. Sports Health, Sept 2010)

- Ankle Pumps, calf stretching, patellar mobilizations

Phase II: Flexion Phase

- Begins once normal, *symmetric* knee extension is obtained (***including full hyperextension***) and patient is able to actively lift heel off table with quadriceps activation
- If at any time the patient starts to lose symmetric extension, stop working on flexion and return to Phase I
 - Consider using EliteSeat throughout this phase as above to maintain extension
- Heel slides, wall slides, sitting on heels in quadruped position (10 min each, 4-5 times daily)
- Standard ergometry (when knee flexion ROM > 115 degrees)

Phase III: Strengthening Phase

- Progress with step up/down exercises (low intensity, high repetition: 50 reps, 6x/day)
 - Must have good technique before height is progressed
- Leg Press (90-0 degree arc)
- Mini Squats / Weight Shifts
- Proprioception training

Phase IV: Advance sport specific exercises

- Begin forward running (treadmill) program when 8" step down satisfactory
- Continue Strengthening & Flexibility program
- Advance Sports-Specific Agility Drills
- Start Plyometric program
- Recommend every other day rest and monitor for swelling/pain.

Phase V: Return to sports

- With MD approval
- Strength maintenance
- Advance Plyometric program
- Return to Sport

References

1. Biggs-Kinzer A, Murphy B, Shelbourne KD, Urch S. Perioperative Rehabilitation Using a Knee Extension Device and Arthroscopic Debridement in the Treatment of Arthrofibrosis. *Sports Health: A Multidisciplinary Approach* September 2010 2:417-423; doi:10.1177/1941738110379088