



UNION GENERAL ORTHOPEDICS & SPORTS MEDICINE

AFFILIATE OF: UNION GENERAL HEALTH SYSTEM

Jacob B. Stirton, MD

www.jacobstirtonmd.com

706-439-6858

KNEE QUADRICEPS TENDON REPAIR PHYSICAL THERAPY

Philosophy

This protocol is to be utilized as a guideline. There will always be individual differences amongst patients regarding progression and tolerance of specific activities. Progression through the protocol will depend on successful accomplishments of set milestones as assessed by the physician and the physical therapist/athletic trainer.

The physical therapist and patient must constantly be aware of changes in condition, including but not limited to signs and symptoms of joint irritation/pain, tendonitis, and effusion. The patient's home exercise program is of utmost importance and should be monitored and emphasized.

Rehabilitation should create the optimal environment for the natural process of healing to occur. Initially, there should be a strong emphasis on minimizing swelling and pain as well as motion restoration. If a patient's progress is significantly delayed, please contact the physician office to keep them informed.

If you have any questions regarding this protocol, please contact the UGH Orthopedics and Sports Medicine Department at (706) 439-6858.

CAUTION: Return to intense activities such as impact loading, jogging, deep knee flexion, or pivoting and shifting early post-operatively may increase the overall chance of setbacks and symptoms of pain, swelling, or instability should be closely monitored and reported by the patient.



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WEEKS 1-2 (Immediate POST-OP PHASE)

TREATMENT GOALS:

- Minimize swelling/pain.
- ROM: none (locked in full extension).
- Gait training, crutches with brace locked in full extension.
- Achieve quad activation.

PRECAUTIONS:

- No flexion, stay in brace.

BRACE:

- Week 0-2: locked in full extension at all times

MANUAL THERAPY:

- Patellar mobilizations out of brace at home daily.

SUGGESTED EXERCISES:

- Isometrics (quadriceps, gluteals, hamstrings).
- Ankle pumps-> heel raises.

MODALITIES:

- cryotherapy, vasocompression.



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WEEKS 3-6 (Early POST-OP PHASE)

TREATMENT GOALS:

- Minimize swelling/pain.
- ROM: see below
- Gait training, in brace locked in full extension, wean off crutches.
- Progress to non-weight bearing flexibility
- Achieve quad activation and improve quad set.

Note: It is essential to monitor trunk/core for proper proximal control while doing exercises to avoid substitution.

PRECAUTIONS:

- Week 2-3: ROM 0-30
- Week 3-4: ROM 0-60
- Week 4-5: ROM 0-75
- Week 5-6: ROM 0-90
- Week 6+: full ROM

BRACE:

- Week 3-6: locked in full extension at night and when ambulating.

MANUAL THERAPY:

- Patellar mobilizations at every session (patient taught to do at home daily).
- Physiologic stretching flexion/extension.

SUGGESTED EXERCISES:

- Isometrics (quadriceps, gluteals, hamstrings).
- Ankle pumps-> heel raises.
- SLR's (supine with prop under heel as needed, advancing to standing next phase).
- Heel slides (seated or supine); can also do flexion over end of mat table.
- Long sit hamstring stretches (be mindful in patients with hamstring graft).
- AROM knee extension.
- Prone flexion ROM assisting with opposite LE if needed.
- Prone TKE over ball.
- Prone hip extensions.
- Weight shifting with an active quad set.
- Side lying Abduction series (straight plane ABD, circles, swings) emphasizing neutral spine.
- Trunk stabilization exercises in supine/prone.

Note: High reps, low resistance with focus on proper muscle recruitment.

MODALITIES:

- NMES quadriceps until no lag sign with SLR, biofeedback with quadriceps exercise, cryotherapy, vasocompression.



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WEEKS 6-12 (STRENGTHENING PHASE)

TREATMENT GOALS:

- Full flexion and symmetric to opposite side around weeks 6-8.
- Normal gait and reciprocal stair management without compensation.
- Fully resolve knee swelling.

PRECAUTIONS:

- Gradually increase exercise ROM and weight as dictated by patient response including swelling and soreness response. Articular soreness should be less than 12 hours without medication needed to alleviate symptoms.

BRACE:

- Week 6-7: ROM 0-45
- Week 7-8: ROM 0-60
- Week 8-12: unlocked

MANUAL THERAPY:

- Continue with mobilizations as needed to diminish soft tissue and joint restrictions to normal mobility.

SUGGESTED EXERCISES:

- Progress closed chain quadriceps strengthening.
- Progress balance.
- Core/pelvic and stability work.
- Lunges and leg press to 90° starting week 10.
- Begin stationary bike under PT supervision starting week 10.

MODALITIES: Cryotherapy, others PRN.



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WEEKS 12+ (Late PHASE)

TREATMENT GOALS:

- Full strength and ROM
- Progression of independent gym/home exercise program.

PRECAUTIONS:

- May begin impact activity at week 12.
- May begin pivoting and twisting at week 16.

BRACE:

- Week 12+: none

MANUAL THERAPY:

- Continue with mobilizations as needed to diminish soft tissue and joint restrictions to normal mobility.

SUGGESTED EXERCISES:

- **Frequency:** Alternate cardiovascular and leg strengthening days with goal of exercising 6 days/week if the patient desires to eventually participate in competitive athletics.
- **Cardiovascular:** Bike, Stair stepper, Elliptical and Retro Treadmill.
- **Strengthening:** Important to focus on quad, hip, and core strengthening.
 - Squats.
 - Progressive step ups/downs (forward, side, back, 4-8" step).
 - Lunges and wall-sits in appropriate ROM not to aggravate patellofemoral joint.
 - Single leg balance with opposite leg reaches.
 - One-legged deadlifts.
 - Slide Board.
 - Sport cord resisted walking forward/lateral/retro.
 - Swiss ball, planks, and trunk stabilization exercises.
 - Static balance exercises using balance cushions, BOSU ball, wobbleboard, half roller, etc.

FUNCTIONAL TRAINING (start at week 16)

- Initiate light plyometric/sports metric type program (as released by MD for impact loading).
- box jumps, level, double-leg, rope jumping, star jumps, hopping.
- Sport specific drills.
- Intensify circuit training - Stepper, elliptical, treadmill, ladder drills, rope jumping, reaction drills.

MODALITIES: Cryotherapy, others PRN.