



Quadriceps Tendon / Patellar Tendon/Fracture Repair

Protocol:

GENERAL GUIDELINES:

- PROM and gentle AROM 0-60 degrees x 4 weeks with the hip flexed; 0-90 degrees x 6 weeks
- No Active Knee Extension x 4 weeks
- WBAT in brace locked in full extension
- Wear brace for 6 weeks
- No driving for 6 weeks if right leg is involved
- Ice 3-4 time daily for the first week and then as needed thereafter for pain and swelling
- Return to sport and/or work to be determined by the physician
- Communication with the physician is imperative to obtain patient-specific recommendations; modify the protocol accordingly

PHASE 1: (0 - 4 Weeks)

- PROM and gentle AROM 0-60 degrees x 4 weeks with hip flexed
- WBAT in the brace with the brace locked in full extension
- No Active Knee Extension for 4 weeks
- Use hinged knee brace 0-60 degrees for range of motion exercises
- Submaximal isometrics – adductors, gluteals, abductors, hamstrings
- Initiate quad sets
- Active / Active-assisted ROM ankle
- Initiate patella mobilization
- Stretching – hamstrings, gastroc-soleus, iliotibial band (NWB)
- Begin seated hamstring curls 0-60 degrees
- Begin multi-hip machine with pad proximal to knee
- Electrical stimulation and / or biofeedback for quadriceps and hamstrings
- Modalities to minimize effusion
- Begin SLR in brace locked at 0 degrees without weight at 2-4 weeks.



PHASE 2: (4 - 6 Weeks)

- **Begin PWB at 4 weeks with brace (0-60 degrees depending on quad control)**
- **WBAT by 6 weeks with brace 0-90 degrees**
- Begin AROM without weight for short and long arc quads
- ROM 0-90 degrees with hip flexed and extended
- Begin aggressive patellar mobilizations and scar tissue massage
- Initiate weight shifting with isometrics. Hold in a mini-squat and anterior lunge position (20-30 degrees knee flexion)
- Consider aquatic therapy at this time
- Add seated heel raises. Progress to standing position as weight bearing status and quad control improves
- Modalities for continued control of effusion and edema

PHASE 3: (6 - 8 Weeks)

- **Wean from brace at 6 weeks as quad control improves**
- **Begin active ROM**
- **Consider SLR**
- Begin submaximal knee extension isometrics (60-90 degrees)
- Begin static single-leg balance on floor. Progress to dynamic single-leg balance activities (e.g. upper or lower extremity reaching, 4-way theraband, etc.) as lower extremity muscle control allows.
- Begin with bike for ROM. May begin exercise program as effusion and ROM allows.
- Begin retroambulation
- Add leg press
- Initiate isometric squats and progress to dynamic squats emphasizing lower ranges (e.g. 60-90 degrees) and proper technique
- Begin closed kinetic chain terminal knee extension with theraband resistance



PHASE 4: (8 - 12 Weeks)

- Emphasize concepts of frequency, duration, and intensity of training
- **Equal passive and active range of motion bilaterally by 12 weeks**
- Consider orthotics, taping, bracing as appropriate to facilitate training and proper biomechanics
- Begin lateral step-ups/downs beginning at 2" and progressing height only if proper technique is maintained (no hip substitution)
- Add Sportcord activities (e.g. marching, lateral stepping in squat position, etc.)
- Initiate knee extension isometrics (30-90 degrees) as tolerated
- Progress endurance training on bike with emphasis on high RPMs to minimize patellofemoral compression
- Progress static and dynamic single-leg balance activities to unsteady surfaces (e.g. pillow, half-foam roll, BAPS board, etc.) as lower extremity muscle control allows

PHASE 5 (12+ Weeks)

- **Equal strength bilaterally by 16 weeks**
- Progress to independent home exercise program
- Emphasize importance of proper lower extremity biomechanics
- Return to sports and/or work to be determined by the physician
- Progress knee extension isotonic. May progress to 0-90 degree arc as tolerated
- Progress to lunges (e.g. anterior, lateral, etc) as tolerated
- Begin sport- and/or work-specific activities per physician
- Begin return to running program (e.g. treadmill, road, etc.) as appropriate
- Begin slide board
- Initiate plyometrics as appropriate