

# ANTERIOR CRUCIATE LIGAMENT REPAIR

## POST-OPERATIVE PHYSICAL THERAPY PROTOCOL

### General Considerations:

- Passive and active range of motion allowed immediately. Brace will set to this range of motion. Ok to stretch into flexion per patient comfort 2x/day immediately post-op. Come out of the brace twice a day for extension (straightening) and flexion (bending) range of motion stretching to full range as tolerated. Hold each stretch for 1 minute. Do 2 sets of 1 minute each time (therefore 4 sets of extensions per day and 4 sets of flexion per day). Remove brace for stretching.
- Crutches to assist weight bearing progressing to full as tolerated with brace.
- Patient to wear knee brace while sleeping for 4 weeks post-op.
- Soft tissue mobilizations to the incisions to decrease fibrosis and scarring; portals must be completely closed.
- Exercises should focus on early muscular recruitment.
- Begin physical therapy as soon as able for soft tissue mobilizations, anti-inflammatory modalities, and general conditioning.
- Patients are given a functional assessment/sports test at 3 months, 6 months, and 9 months.

### Week 1:

- Icing and elevation as per icing protocol
- Manual: Soft tissue treatments, gentle mobilizations to posterior musculature and patella. No portal mobilizations at this time
- Exercise:
  - Leg raises (30 degrees of knee bend with brace on): lying, seated and standing
  - Quadriceps/adduction/gluteal sets
  - Passive and active range of motion exercises within guidelines
  - Well-leg stationary cycling
  - Gait training to normalize walking pattern
  - Balance and proprioception exercises
- Goals:
  - Decrease pain
  - Weight bearing as tolerated with brace
  - Passive range of motion 0-90 degrees x4 weeks

### Weeks 2-4:

- Manual: Continue with effleurage, soft tissue treatments, patellar glides, and passive range of motion
- Exercise:
  - Progressive and gentle functional exercises (squats/knee bends, modified lunges, step-ups)
  - Continue with pain control, range of motion, gait training, balance/proprioception, and soft tissue treatments
  - Begin pool workouts after incisions are healed and with the use of the brace
  - Begin two-legged aerobic exercises as range of motion allows (upper body ergometer, versaclimber, stair machine, Nordic trac)
- Goals:
  - Minimal edema, decrease pain
  - Weight bearing as tolerated with brace
  - Range of motion 0-90 degrees x4 weeks

### Weeks 4-6:

- Discontinue use of post-op brace at this time
- May wean off brace with full range of motion if significant weakness or apprehension is present
- Manual: Push for full range of motion with emphasis on extension. Continue with soft tissue mobilizations, joint mobilizations as needed. Initiate scar mobilizations once incisions are healed and closed.
- Exercise:

- Increase intensity of all exercises with focus on closed chain and functional progression
- Stationery and road cycling as tolerated
- Goals:
  - Range of motion 0-110 degrees
  - Non antalgic gait without use of brace and good mechanics
  - Initiate scar mobilizations at 4 weeks

#### Weeks 6-8:

- Manual: Continue with soft tissue mobilizations, joint mobilizations and scar mobilization as needed to gain full range of motion
- Exercise:
  - Continue to increase intensity of exercises (i.e. stretch cord resistance, adding weight, increasing resistance of aerobic machines)
  - Add lateral training exercises
  - Begin to incorporate sport or activity specific training
- Goals:
  - Range of motion 0-130 degrees

#### Weeks 8-12:

- Exercise:
  - Progression of program of increasing intensity to sport specific tasks and activities of daily living
  - Continue to challenge balance and progress to increased dynamic tasks (i.e. Bosu ball, wobble board)
  - Progress single leg activities
- Goals:
  - Full range of motion
  - Able to descend stairs, double leg squat hold for >1 minute
  - Bike >30 minutes with moderate resistance, elliptical with interval training, flutter style swimming (no flippers or breast stroke kick)
  - Initiate sport specific training

#### Weeks 12+:

- Patients are not scheduled for another M.D. appointment until 3-4 months post-op. At this time, range of motion should be near 100% and any restrictions or concerns should be communicated to our office.
- Exercise:
  - Incorporate bilateral jumping exercises once able to demonstrate adequate strength. Watch for compensatory patterns with take-offs or landings.
  - Complete 1<sup>st</sup> sports test at 3 months
  - Continue to increase strength, endurance, balance, and sport specific training drills.
- Goals:
  - Swimming (No fins until >12 weeks)
  - Outdoor cycling
  - Slow return to sports >6 months if approved by M.D. and completion of sports functional test.