**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
  + Stationary 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 1st 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.