ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION
WITH MENISCUS REPAIR
Post-Operative Physical Therapy Protocol

General Considerations:
- It is important to recognize that all times are approximate and that progression should be based on careful monitoring of the patient's functional status.
- Early emphasis on achieving full hyperextension equal to the opposite side.
- Patients will be in a hinged knee brace for 4 weeks post-op locked in full extension.
- No active knee flexion X 4 weeks.
- Partial / toe-touch weight bearing for 3-5 days post-op, increasing to full weight bearing--important to watch for lower leg rotation or “heel whip” with ambulation to avoid stress onto the meniscus.
- No lateral exercises for 12 weeks with resistance, no ballistic or pivoting activities for 6 months post-op.
- Regular manual treatment should be conducted to all incisions so that they remain mobile.
- Exercises should focus on the early recruitment of the quadriceps especially VMO.
- No resisted leg extension machines (isotonic, isokinetic, or manual resisted) at any point.
- Patients are given a functional assessment/sport test at 3, 6 months, 1 year post-op.
- OK to sleep without a brace.
- No direct palpation to surgical portals x 4 weeks; consider the edges of the bandages as the “no touch zone” approximately 2 inches from all portals. See wound care protocol for further detail.

Week 1:
- Nurse visit day 2 post-op to change dressing and review home program.
- Icing and elevation every 2 hours for 15-20 min sessions.

Manual
- Effleurage for edema. Soft tissue treatments and mobilization to all associated musculature (quads, hamstrings, gastrocnemius, popliteal fossa, ITB).
- Patellar glides all directions; avoid palpation of surgical portals x 4 weeks.
- Passive “dangle” edge of bed for knee flexion range of motion; allow leg to bend up to 90 degrees in pain-free range 4X/day for 5 minutes.
- Focus knee extension range of motion equal to 0 degrees.

Exercises:
- Straight leg raise exercises (lying, seated, and standing), quadriceps/abduction/ gluteal sets; balance/proprrioception exercises; well-leg stationary cycling; upper body conditioning.
- Once or twice per day: open-chain flexion of knee to end range per patient tolerance.
- Can start double leg standing calf raises and stretches.

Goals:
- Decrease pain, edema.
- Brace locked in extension x 4 weeks for weight wearing.
- Touch down weight bearing x 3-5 days, progress to full weight bearing with good mechanics.
- Passive range of motion 0-90 degrees.

Weeks 2 - 4:
- Nurse visit at 14 days for suture removal and check-up.

Manual:
- Continue with soft tissue mobilization, patellar glides, range of motion.
# Exercise:  -Continue with previous exercises; increase core/gluteal strength. Balance/propiroception exercises (e.g., single leg standing balance). Activate quads to maintain knee extension.  
-Aerobic exercises consisting upper body ergometer, well legged stationary cycling.

## Goals:
Continue to decrease pain.  
Brace locked in extension for weight bearing, progress to full weight bearing.  
Passive range of motion 0 to 90 degrees.

### Weeks 4 - 6:
-M.D. visit at 4 weeks, discontinue the use of the post-op brace.

**Manual** - Continue with soft tissue mobilization to surrounding musculature, patellar glides. 
-Light joint mobilizations and scar mobilization if portals completely closed.

**Exercises** -Can start progressive resisted leg training with weight machines without symptoms. 
-Stationary cycling, cautious introduction of stair machine.  
-Can start pool exercises and swimming without brace (can use brace for support if desired) once portals are completely closed.

## Goals:
Discontinue post-op brace. Can initiate stationary cycling.  
Active range of motion 0-120 degrees.

### Weeks 6 - 8:
**Manual**- Continue with above manual as needed, increase range of motion.

**Exercise** -Increase the intensity of functional exercises (i.e stretch cord resistance, adding weight, increasing resistance of aerobic machines). 
-Road cycling as tolerated.

## Goals:
Initiate road cycling.  
Full range of motion of knee.

### Weeks 8 - 12:
-Add lateral training exercises (i.e. lateral stepping, lateral step-ups, step-overs).  
-Progress proprioceptive and balance exercises, increase dynamic challenge.  
-Begin to incorporate sport-specific training (i.e. volleyball bumping, light soccer kicks and ball skills).

## Goals:
Full knee range of motion. 5/5 muscle strength in surgical leg.  
Initiate sport-specific training.

### Weeks 12-16:
-Complete Sport Test 1; initiate pre-running program (see additional handout for specific details). 
-Incorporate bilateral jumping and bounding exercises, making sure to watch for compensatory patterns.
and any signs of increased pronation and/or valgus moment with take-offs or landings.
- Patients should be weaned into a home program with emphasis on their particular activity.

**Goals:**
Complete and pass Sports Test 1, initiate pre-running drills/plyometric.

**Weeks 16 +:**
- Initiate return to running program.
- Sagittal plane plyometric training focus on form and control.
- Working towards single leg plyometric training.