UNIVERSITY OF MIAMI PROTOCOL
Anterior Cruciate Ligament Reconstruction
Rehabilitation Guidelines

This protocol is a model for ACL reconstruction with autograft or allograft reconstruction.

PRE-OP:
Instruct patient in quad sets, ankle pumps, SLR's, gait training with crutches, WBAT, ice and elevation guidelines.

POST-OP WEEK 1:
1. VMO quad sets with biofeedback
2. Straight leg raises
3. Gentle patellar mobilization/scar mobilization
4. Theraband ankle exercises
5. EMS especially important in patient unable to initial quad sets or independent SLR
6. Prone Extension
7. Gastroc/hamstring stretching
8. Cryotherapy
9. Manual/self ROM zero to 90 degrees

* Patient should be Full weight bearing, brace locked at zero degrees extension. At the end of the first week the brace should be opened to patient limits when adequate quadriceps control is obtained.

POST-OP WEEK 2:
1. Continue previous treatment
2. Isotonic program
    a. Hip abduction/adduction
    b. Leg Curl
3. Mini Squats 0-30 degrees
4. Wall Squats 0-30 degrees
5. Posterior tibial glide joint mobilization at 30 degrees and 90 degrees if ROM problem persists especially in ext.
6. Bicycle ROM: 1/2 arcs progressing to full ROM

* End of 2nd week, patient should be single crutch if normal gait is achieved. Brace should be opened to patient limits when adequate quad control is obtained.

POST-OP WEEK 3:

1. KT-1000
2. Continue with previous treatment
3. Heel walking; toe walking
4. Balance/proprioception training on flat terrain
5. Reformer single leg press
6. PROM/Self ROM full extension equal to opposite side and flexion to 120 degrees sitting. Upon obtaining 110 degrees of flexion proceed with prone ROM.
7. D/C brace and crutches if ambulating without a limp
8. Isotonic terminal knee extension, low resistance and high repetitions

POST-OP WEEK 4-6:

1. Continue Isotonic program (hips, hamstrings, leg press)
2. Continue with previous program
3. Treadmill forward and backward walking
4. Seep ups
5. Trampoline – single leg standing
6. Balance board
    a. Lateral tilt
    b. A/P tilt
7. Weight shifting (modified lunge to 30 degrees flexion)
    a. Forward
    b. Backward
    c. Sideways
8. Continue biofeedback for neuromuscular CMO re-education
9. Aggressive patellar and soft tissue mob, post-tibial glides
10. PROM/Self ROM full extension to 135 degrees seated, prone full extension to 120 degrees
11. Interval stationary bike program

* At the end of 6 weeks, a patient should have between full extension and 135 degrees of flexion, good patellar mobilization. Normal WB and gait. Minimal pain and swelling. Biofeedback can be included in closed chain activities.

POST-OP WEEK 6-12:

1. Continue with previous treatment
2. Isokinetics limited range (90-45 degrees), high speed above 150 to 180 degrees/sec at 10 weeks. (If pain free and on patella femoral problems)
3. Isotonic squats – Smith machine bar weight only (feet forward; tibia perpendicular)
4. Lunges
5. Stairmaster
6. Slide board
7. Sport cord walking
    a. Forward
    b. Backward
    c. Sideways
8. Trampoline
    a. Single leg bouncing
    b. Stepping high knee
    c. Weight shifting forward, sideways, diagonally

* Patient should obtain full ROM between 8-10 weeks. Self-ROM seated and prone should be continued for 6-8 months to allow full harvest site tissue maturation.

POST-OP WEEKS 12-16:

1. Continue with previous program
2. Isotonic terminal knee extension, low resistance high repetition
3. Theraband slow running low intensity
4. Controlled slow forward and backward jogging on level surface
5. Trampoline jogging
6. Low intensity impact activities (In absence of patella femoral pain or general knee pain. Patient should also have full ROM at this time).
    a. Double leg jumping
    b. Sideways jumping
    c. Forward jumping
    d. Running on spot
7. Functional closed chain evaluation
8. At 15-16 week, Isokinetic evaluation

(In absence of patellafemoral pain or general knee pain).

POST-OP 16-20:

1. Continue with previous program
2. Running program if 70% quad strength per Biodex tests and asymptomatic function evaluation. Test speed dependant on sport specific and symptomatic basis.
3. Sport specific activities
4. Plyometrics medium to high intensity
    a. Broad jump
    b. Single leg jumping
    c. Vertical jumps
5. Agility limits
6. Isokinetic evaluation and functional evaluation on a monthly basis until discharge from formal medical care. Patient will be discharged from formal physical therapy with a home program at 20 weeks.