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**Multiple Ligament Injury Rehabilitation**

**(ACL, PCL, +/- MCL, LCL, or PLC)**

The goals of this protocol are to protect the reconstruction while preventing knee stiffness. So early Passive ROM exercises are very important but in addition, preventing excessive anterior and/or posterior tibia translation is also very important.

Goals:

Full knee ROM – all ROM exercises must be performed in the prone or side lying position for the first 6 weeks 50% WB in Brace and crutches for first 6 weeks.

Pain/Edema reduction.

Begin and Enhance normalization of quad recruitment.

Prevent anterior/posterior translation and tibia rotation.

1 – 42 days post op (6 weeks post op)  
 Modalities as needed.

Brace locked at 0° for the first 2 weeks. Can be unlocked only for Prone ROM exercises by ATC for PT.  
Brace at 0-90° if able to tolerate from weeks 2-6.

Teach partner to perform Home Stretching Exercises 2-3x’s daily.

ROM Ex’s:

In prone position or side lying only, grip the heads of the gastroc /soleus group and maintain neutral pressure proximally to the tibia while flexing the knee

Advance ROM as tolerated.

Begin patella mobilizations.

Scar management

Quad sets/SLR in brace at 0° (assist patient with this exercise until solid quad contraction developed, prevent posterior sag) 10x10 3x’s/daily, may use ankle weights as they will increase anterior translation.

No hamstring isometrics for seven weeks.

Seated calf ex’s.

Time Modulated AC (a.k.a. Russian Stim) in full extension.

Teach Quad ex’s for home program.

PT visits 2x/week for first month.

2 weeks post op

Cont. as above

Stationary Bike to increase ROM, start with high seat and progress to normal height when able, resistance as tolerated.

3 weeks post op

Cont. as above

Leg press with both legs

Leg extensions with anti shear device or cuff weights progress weight as tolerated, keep resistance proximal

6-8 weeks post op

Cont. as above

May begin aquatic therapy emphasizing normal gait, marching forwards/backwards

Begin weaning crutches, D/C brace and normalize gait mechanics

Full WB as tolerated

ROM – prone flexion 120° or more, and advance to full ASAP

Treadmill walking – forwards and retro

Closed and Open Chain Tubing ex’s

Single leg stands for balance/proprioception on Airex pad on trampoline

Chair/Wall squats-keep tibia perpendicular to floor

10 Weeks post op

Cont. as above

All ex’s should be on affected leg only at this time

ROM should be progressing, if not contact doctor

Stairmaster

Slide Board—start with short distance and progress as tolerated

Filter

Versa Climber

Nordic Track and Elliptical Trainers

Cable Column ex’s—retro walking, lateral stepping, NO cross over stepping or shuffling

Standing leg curls with cuff weights or seated leg curls with NK table at 5lbs max

Advance strengthening for quads as tolerated

12 Weeks post op

Cont. as above

Advance hamstring strengthening into prone position

Assessment of jogging on treadmill

Lateral Movement supervised by ATC o PT

Stepping, shuffling, hopping, carioca

Isokinetic Ex’s 180,150, 120, 90, 60°/sec 8-10 reps each speed and down spectrum

13—24 Weeks post op

Cont. as above

Plyometrics—low intensity vertical and lateral hoping to begin with, use both feet and move to one foot, ASAP

Volume for plyometrics ( this is not conditioning exercise but a strengthening one) for rehabilitation

40-60 for contacts/session for beginners

60-80 for contacts/sessions for intermediate

80-100 + foot contacts/sessions for advance

If plyometrics exercise intensity is high the volume must be decreased, give ample recovery time between sets

2-3 sessions a week preferably on weight lifting days

Initiate sport specific activities under supervision by ATC or PT

24 Weeks post op (6 month+)

Cont. as above

Emphasize strength and power development

Running and sport specific drills under ATC or PT supervision

Isokinetic test for Quad strength difference 15% and unilateral Hamstring Quad strength ratio of 65% or better

Cont. strength testing monthly until patient passes then perform functional testing

Functional testing is appropriate for people returning to advanced recreational activities or sports