



Brian P. Davis, MD
ABOS Board-Certified Sports Medicine,
Shoulder, Knee, & Elbow Surgeon
office: 303.321.1333
BrianDavisMD.com

Knee Multiple Ligament Reconstruction Rehab Protocol

POST OPERATIVE MANAGEMENT

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

- 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

Week 0-6:

- Modalities as needed
- Brace locked at 0° at all times except for ROM exercises by ATC/PT for first month
- Advance ROM as tolerated
- Teach patient to perform Home Stretching Exercises 2 –3x's daily
- 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
- 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) 13x10 3x's/daily, may use ankle weights as they will increase anterior translation
- No hamstring isometrics for seven weeks
- Seated calf exercises

Week 4:

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

Week 6:

- Begin weaning off crutches, D/C brace and normalize gait mechanics
- Cont. as above
- Leg press with both legs
- Leg extensions with anti-shear device or cuff weights progress weight as tolerated, keep resistance proximal

Week 10-12:

- Cont. as above
- Full WB as tolerated
- ROM – prone flexion 120° or more, and advance to full ASAP
- May begin aquatic therapy emphasizing normal gait, marching forwards/backwards
- Treadmill walking – forwards and retro
- Closed and Open Chain resistive tubing ex's
- Single leg stands for balance/proprioception
- Chair/Wall squats – keep tibia perpendicular to floor
- Unilateral step-ups – start with 2" height and progress to normal step height as able

Week 16:

- Cont. as above
- All exercises should be on affected leg only at this time
- ROM should be progressing, if not contact doctor
- Stairmaster, Versa Climber, Nordic Track and Elliptical Trainers

- Slide Board – start with short distance and progress as tolerated
- Cable Column exercises – retro walking, lateral stepping, NO cross over stepping or shuffling
- Standing leg curls with cuff weights or seated leg curls
- Advance strengthening for quads as tolerated

Week 20:

- Cont. as above
- Advance hamstring strengthening into prone position
- Assessment of jogging on treadmill
- Lateral Movement supervised by ATC or PT
 - Stepping, shuffling, hopping, carioca
- Isokinetic Exercises

Week 24-32:

- Cont. as above
- Initiate plyometric program as appropriate to patient's functional goals
- If plyometric 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

Week 32+:

- Cont. as above
- Emphasize strength and power development
- Running and sport specific drills under ATC or PT supervision
- Isokinetic test for Quad strength difference $\leq 15\%$ 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
- Clearance by doctor prior to return to sport

Criteria for discharge:

1. Full, pain free range of motion
2. Strength is equal bilaterally
3. Has met specific functional/activity goals
4. Has been cleared by physician