



ORTHOPAEDICS

Rehab Guidelines following Multiple Ligament Knee Reconstruction

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The rehabilitation guidelines are presented in a criterion based progression program. General time frames are given for reference to the average, but individual patients will progress at different rates depending on their age, associated injuries, pre-injury health status, rehab compliance, tissue quality, and injury severity. Specific time frames, restrictions, and precautions may also be given to protect healing tissues and the surgical repair/reconstruction.

General guidelines immediately after surgery:

- WBAT for PCL and ACL/PCL injuries
- NWB for combined MCL reconstruction for 3 weeks, then PWB for 3 weeks, then FWB at 6 weeks
- No active hamstring activity for 8 weeks after PLC (Posterolateral Corner) reconstruction
- No hamstring strengthening for 16 weeks after PLC (Posterolateral Corner) reconstruction

PHASE 1 (0-2 weeks post-op)

Rehab Goals:

- Control inflammation and pain
- Full active extension
- Achieve quadriceps control



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Brace:

- Locked in extension for ambulation for 4 weeks for ACL/PCL and/or MCL reconstruction, then unlocked for ambulation for 2-4 weeks until normal gait is established
- Locked in extension for ambulation for 12 weeks for PLC reconstruction
- May remove for ROM exercises
- Keep brace locked in extension for SLRs for 6 weeks to prevent posterior sag, may remove when quad control is good enough to prevent extension lag

Weigh Bearing Status:

- WBAT with crutches for ACL/PCL
- NWB for 3 weeks, PWB for 3 weeks, then FWB for MCL
- NWB for 6 weeks, PWB for 6 weeks, then FWB for PLC

Suggested Therapeutic Exercise:

- SLR in all planes (brace locked in extension)
- Calf pumps, quad sets
- E-stim as needed
- Patellar mobilizations
- Balancing activities on a stable platform with eyes open and closed

PHASE 2 (2-6 weeks post-op)

Criteria:

- Good quad sets and SLR with brace
- No active inflammation
- Full extension

Rehab Goals:

- Achieve 90 degrees of flexion
- Protect graft fixation



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Brace and Weight bearing Status:

- As above in Phase 1

Suggested Therapeutic Exercise:

- Begin ROM (prone passive knee flexion to 90 degrees with care to avoid posterior tibial sag)
- Wall slides, then progress to mini squats (0-45 degrees) when quad control is good (AVOID if PLC reconstruction was performed within 8 weeks)
- Pool walking to restore normal gait pattern
- Toe raises
- Gastrocnemius stretches
- Ankle strengthening with sports tubing (Theraband)

PHASE 3 (6-12 weeks post-op)

Criteria:

- Knee flexion to 90 degrees
- No active inflammation
- Good quadriceps control

Rehab Goals:

- Achieve full flexion
- Establish normal gait
- Progress with strengthening and endurance

Brace and Weight Bearing Status:

- FWB with brace unlocked, may discontinue brace when normal, may discontinue brace when normal gait is established for ACL/PCL and/or MCL reconstructions
- PWB with brace locked in extension for PLC reconstruction



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Suggested Therapeutic Exercise:

- Begin active knee flexion at 6 weeks for ACL/PCL and/or MCL and at 8 weeks for PLC reconstruction
- Begin the following at 6 weeks for ACL/PCL and/or MCL and at 8 weeks for PLC recon.
 - Stationary bike (low resistance, high seat, with NO toe clips – so as to prevent hamstring contraction)
 - Mini-squats to 45 degrees
 - Leg press to 60 degrees
 - Stairmaster
 - Elliptical trainer
 - Proprioception
 - Mini-tramp standing
 - Unstable platform (BAPS) with eyes open/closed
 - Standing ball throwing and catching

PHASE 4 (3-6 months post-op)

Criteria:

- Full, pain-free ROM
- No patellofemoral irritation
- Sufficient strength and proprioception to progress to functional activities
- Normal gait

Rehab Goals:

- Improve strength and proprioception
- Maintain FROM

Suggested Therapeutic Exercise:

- Progress to flexibility and closed-chain strengthening program
- Swimming (no breast stroke)
- Stationary bike (may increase resistance)
- Box steps (6 and 12 inches)



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- Jogging, straight ahead, may be started around 4-5 months when quad strength is 90% of contralateral side

PHASE 5 (6-9 months post-op)

Criteria:

- Full, pain-free ORM
- No effusion
- Sufficient hamstring and quad strength to progress to agility exercises

Rehab Goals:

- Return to all recreational and sporting activities by 9 months
- Maintain full, painless motion
- Progress with strengthening, agility, and endurance

Suggested Therapeutic Exercise:

- Progress with closed-chain quadriceps and hamstring strengthening
- Plyometrics
 - Stair jogging
 - Box jumps (6-12 inches)

Proprioception

- Mini trampoline bouncing
- Lateral slide board
- Ball throwing and catching on unstable surface

Functional Training

- Running – figure-of-eight pattern
- Agility
- Start at slow speed



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- Shuttle run, lateral slides, carioca cross-overs
- Plyometrics
- Stair running
- Box jumps (1-2 foot heights)
- At 8 months, may start:
 - Sports specific training (start at 25% speed and increase as tolerated)
 - Incorporate cutting
 - Increase heights for plyometric conditioning

Release to Sports:

- **Usually occurs at 9-12 months post-op**
- **Full painless ROM**
- **No effusion**
- **Quadriceps and hamstring strength at 90% of contralateral side**
- **No apprehension with all sports specific drills**