



Rehabilitation Guidelines after 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 or 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 reconstruction
- No hamstring strengthening for 16 weeks after PLC reconstruction

PHASE I (0-2weeks)

REHAB GOALS	<ul style="list-style-type: none"> • Control inflammation and pain • Full active extension • Achieve quadriceps control
BRACE	<ul style="list-style-type: none"> • Locked in extension for ambulation for 4 weeks for ACL/PCL and/or MCL reconstructions, then unlocked for ambulation for 2-4 weeks until normal gait is established • Locked in extension for ambulation for 12 weeks for PCL 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
WEIGHTBEARING STATUS	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • SLR in all planes (brace locked in extension) • Calf pumps, quadriceps sets • Electrical stimulation as needed • Patellar mobilizations • Balancing activities on a stable platform with eyes open and closed

PHASE II (2-6 weeks)

CRITERIA	<ul style="list-style-type: none"> • Good quad set and SL with brace • Full extension • No active inflammation
REHAB GOALS	<ul style="list-style-type: none"> • Achieve 90 degrees of flexion • Protect graft fixation
BRACE AND WEIGHTBEARING	<ul style="list-style-type: none"> • As above in Phase I
SUGGESTED THERAPEUTIC EXERCISE	<ul style="list-style-type: none"> • 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 for 8 weeks) • Pool walking to restore normal gait pattern • Toe raises • Gastrocnemius stretches • Ankle strengthening with sports tubing (Theraband)

PHASE III (6-12 weeks)

CRITERIA	<ul style="list-style-type: none"> • Knee flexion to 90 degrees • No active inflammation • Good quadriceps control
REHAB GOALS	<ul style="list-style-type: none"> • Achieve full flexion • Establish normal gait • Progress with strengthening and endurance
BRACE AND WEIGHTBEARING STATUS	<ul style="list-style-type: none"> • FWB with brace unlocked, may discontinue brace when normal gait is established for ACL/PCL and/or MCL reconstructions • PWB with brace locked in extension for PLC reconstruction
SUGGESTED THERAPEUTIC EXERCISE	<ul style="list-style-type: none"> • 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 reconstruction <ul style="list-style-type: none"> ○ 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 <ul style="list-style-type: none"> ▪ Mini-tramp standing ▪ Unstable platform (BAPS) with eyes open and closed ▪ Standing ball throwing and catching

PHASE IV (3-6 months)

CRITERIA	<ul style="list-style-type: none"> • Full, pain-free range of motion • No patellofemoral irritation • Sufficient strength and proprioception to progress to functional activities • Normal gait
REHAB GOALS	<ul style="list-style-type: none"> • Improve strength and proprioception • Maintain FROM
SUGGESTED THERAPEUTIC EXERCISE	<ul style="list-style-type: none"> • Progress with flexibility and closed-chain strengthening program • Swimming (no breast stroke) • Stationary bike (may increase resistance) • Box steps (6 and 12 inches) • Jogging, straight ahead, may be started around 4-5 months when quad strength is 90% of contralateral side

PHASE V (6-9 months)

CRITERIA	<ul style="list-style-type: none"> • Full, pain-free motion • No effusion • Sufficient hamstring and quadriceps strength to progress to agility exercises
REHAB GOALS	<ul style="list-style-type: none"> • Return to all recreational and sporting activities by 9 months • Maintain full, painless motion • Progress with strengthening, agility, and endurance
SUGGESTED THERAPEUTIC EXERCISE	<ul style="list-style-type: none"> • Progress with closed chain quadriceps and hamstring strengthening • Plyometrics <ul style="list-style-type: none"> ○ Stair jogging ○ Box jumps (6 to 12-inch heights) • Proprioception <ul style="list-style-type: none"> ○ Mini-tramp bouncing ○ Lateral slide board ○ Ball throwing and catching on unstable surface • Functional Training <ul style="list-style-type: none"> ○ Running <ul style="list-style-type: none"> ▪ Figure-of-eight pattern • Agility <ul style="list-style-type: none"> ○ Start at slow speed ○ Shuttle run, lateral slides, Carioca cross-overs ○ Plyometrics ○ Stair running ○ Box jumps (1-2 foot heights) ○ At 8 months, may start <ul style="list-style-type: none"> ▪ 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 range of motion
- No effusion
- Quadriceps and hamstring strength 90% of contralateral side
- No apprehension with all sports specific drills

