

Yuri Lewicky MD

1840 N. Jasper Dr.

Flagstaff, Az 86001

Phone (928) 226-2900 Fax (928) 774-7767

Multi Ligamentous Knee Reconstruction Protocol:

Multi-ligamentous knee reconstruction protocol (PLC posterior lateral corner / PCL posterior cruciate ligament / ACL anterior cruciate ligament / MCL medial collateral ligament): The patient underwent a multi-ligamentous knee reconstruction consisting of PLC (FCL & Popliteus & PFL), PCL, ACL and MCL (deep & superficial & POL) reconstruction with allografts in addition to lateral / medial meniscal repair. A neutral / valgus / varus knee alignment is present. Note: time frames for brace use, WB status and crutch use may be altered due to meniscus repairs, knee alignment and extent of ligament reconstructions. Physical therapy begins on postoperative day 3 with an initial focus on graft protection. Supervised PT will be utilized anywhere from 4 to 7 months with the goal being symmetric ROM with dynamic control of the knee. A CPM device will be utilized for 8 hours every day for the 1st 6wks. ROM will initially be set at 0-45 degrees with incremental increases over the next 3 days to achieve a maximum of 0-90. The pt is to sleep with post-op brace locked at 0 degrees extension for the 1st 6 weeks to maintain full extension unless using the CPM at night. The pt should perform patellar mobs every day. No driving for 6wks. NWB with crutches for 6wks.

Rehab Phase I: Weeks 0-5

- Goals: Maximum protection of grafts, maintain patella mobility, minimize quadriceps atrophy, maintain full PASSIVE extension, Control pain and swelling
- Program:
 - NWB ambulation with crutches
 - Brace locked in extension 24 hours/day except when in the CPM and at PT
 - Cryotherapy
 - Quad sets- enhance with electrical stimulation within tolerance
 - Patella mobilizations (therapist and self)
 - Low-intensity gastrocsoleus and hamstring stretching

Rehab Phase II: Weeks 6-10

- Goals: Initiate WB for articular cartilage nourishment, increase knee flexion gradually 90 to 100 degrees, improve quadriceps tone/strength, improve proprioception, Avoid isolated quadriceps and hamstring contractions/strengthening

- Program:
 - Begin PWB, grossly 20% body weight and increase by 20% per week over next 5 weeks to FWB by end of week 10
 - Open brace to full flexion and discontinue brace for sleeping
 - Prone Hangs
 - Passive flexion exercises
 - Electrical stimulation with knee at 60-70 degrees (optional)
 - Closed-chain strengthening once FWB and quadriceps strength reaches 3+/5 or greater
 - Advance proprioception
 - Fit for functional brace after week 10.
 - Discontinue ROM brace

Rehab Phase III: Week 10 to 6 Months

- Goals: Increase knee flexion to at least 120 degrees by end of month 6, Progress closed-chain strengthening, Initiate straight-line jogging at end of month 5, Improve cardiovascular endurance
- Program:
 - Progressive resistive closed-chain exercises avoiding flexion beyond 70 degrees
 - SL proprioception on unsteady surface
 - Aggressive flexion if necessary. (Note: patient may be candidate for MUA if ROM is <90 degrees by end of month 4)
 - Hip passive resistance exercises
 - Straight-line jogging at the end of month 5
 - Initiate low-intensity plyometrics at end of month 6 (side steps)

Rehab Phase IV: Months 7 to 12

- Goals: Maximum flexion (10-15-degree terminal flexion loss is common), Quadriceps strength 90% or greater of nonsurgical side, Progress to sports-specific activities, Return to sports between months 9 and 12 (leaning more towards 12)
- Program:
 - Progression of strengthening, conditioning, and agility exercises to achieve goals
 - Progressive plyometric proprioceptive program (jumping, figure 8 running, shuttles, cutting, SL jumps, ladder drills, acceleration/deceleration)
 - Educate pt on possible limitations
 - Return to sports if the following criteria are met: Minimal or no pain and swelling, Completion of all functional tests within 10% of the uninvolved side, Ability to bound without any gait alteration, Compliance with functional bracing
 - A functional ACL brace will be recommended for 1.5 year duration starting at the 6 month postoperative date when participating in athletics to allow for the grafts to completely incorporate.