

## Dr. Ernat's Multiligament Reconstruction Post-Operative Protocol

**May attend up to 1-3 times weekly for 8-12 weeks.**

**RESTRICTIONS:** Avoid hyperextension. No jogging until 1+2 weeks. No agility/contact sports until cleared around 9-12 months. **If hamstring autograft**, no aggressive hamstring stretches for 4-6 weeks and no resisted hamstring exercises for 8-12 weeks. If PCL is reconstructed then incorporate a PCL protocol limiting hamstring activation.

**WB / CRUTCHES:** TTWB w crutches and brace for 4 weeks. Then progress WB thereafter with brace on.

**BRACE:** Anticipate brace wear for first 6-8 weeks minimum. Brace locked in extension when ambulatory for first 4 weeks. Unlock 0-20 for first 4 weeks when NWB only.

**RANGE OF MOTION:** Full extension immediately. No hyperextension. ROM 0-20 degrees for first 4 weeks. After that progress as tolerated with goal of 0-90 by 6 weeks and 0-120 by 8 weeks.

**STRENGTHENING:** Quad sets immediately. Begin light hamstring strengthening progression around weeks 4-6 if BTB autograft or allograft, or around 8-12 wks if hamstring autograft or if PCL is reconstructed.

**MODALITIES:** Per PT or ATC's discretion. Ice use 3-5 x/daily for first 10-14 days then 2-3 x/daily over first 4 weeks as needed.

**RETURN TO ACTIVITY:** subject to change, based on individual progress, age, graft, activity level, and sport.

- **Recumbent bike:** 4 weeks
- **Road bike outside:** 12+ weeks
- **Elliptical:** 12+ weeks
- **Planks:** 12+ weeks
- **Swimming:** 10-12 weeks
- **Light jogging:** 12+ weeks
- **Running:** 3-4 months
- **Golf (chip/putt):** 3-4 months
- **Golf (full swing):** 5-6 months
- **Throwing:** 5-6 months
- **Skiing:** 9-12 months
- **Tennis:** 9-12 months
- **Soccer:** 9-12 months
- **Basketball:** 9-12 months
- **Contact sports:** 9-12 months

### **KEY FOR PATIENTS:**

- **POST-OP** = after your surgery
- **WB** = weight-bearing
- **ROM** = range of motion
- **PROM** = passive range of motion, someone else moves you
- **AAROM** = active assisted range of motion
- **AROM** = active range of motion, you move yourself
- **RROM** = resisted range of motion, motion against resistance, strengthening
- **SLR** = straight leg raise
- **WNL** = within normal limit

*Timing of each phase varies based on the size of the tear, quality of tissue, length of time immobilized, strength/ROM status, and expected short and long term performance/activity demands.*

**\*\*IF HAMSTRING AUTOGRAFT:** No aggressive hamstring stretches for 4-6 weeks. May begin resisted hamstring exercises after 8-12 weeks.\*\*

**PHYSICAL THERAPY (PT):** Begin formal PT about 3 days s/p surgery. Attend 2 times prior to your first post-op clinic visit. Please call as soon as you have your surgery date to set up post-op PT so the facility does not get over-booked.

### **PHASE I: PROTECTION, RANGE OF MOTION (POST-OP – WK 4)**

- 1) **PRESENTATION:** Post-op day 1-3, post-op hemarthrosis, post-op pain, decreased ROM, decreased voluntary quadriceps contraction, dependent ambulation, post-op knee brace.
- 2) **GOALS:** Protect grafts, control inflammation, prevent muscle shut down and pain, full bilateral extension, flexion 20, TTWB, establish home exercise program, good quad set, SLR without extension lag (all may change if meniscal repair performed).
- 3) Protective bracing, ice, compression, elevation (PRICE).
- 4) Ambulation training: Crutches TTWB
- 5) Patient education, modalities at therapist discretion; patella mobs
- 6) quad activation with quad sets and SLR, Ankle pumps
- 7) Gastroc/soleus and hip flexor stretches
- 8) Isometrics: quads, hamstrings, hip adductors (may augment with e-stim as needed).

### **PHASE II: MODERATE PROTECTION, ROM, LIGHT RESISTANCE (POST-OP WKS: 4-8)**

- **PRESENTATION:** Pain and swelling decreased, improving ROM, quad set and SLR
- **GOALS:** Restore normal gait, maintain full extension and progress flexion ROM, protect graft, and control swelling.
- Continue phase I exercises. Progress to full weight bearing if not reached yet. Initiate weight shifting exercises.
- Modalities at therapist discretion; Patella Mobs

- SLR's in 4 planes, heel/toe raises, closed chain double leg strengthening with no added resistance.
- Trunk and pelvic stability program.
- Progress to normal WB and gait
- Continue brace wear
- Wks 6-8, advance resistive exercises with quads, gastroc, hips.

### PHASE III: STRENGTHENING (*POST-OP WKS: 8-12*)

- **PRESENTATION:** Pain and joint swelling controlled, no increased joint instability, full or near full pain free ROM, fair-plus to good muscle strength with MMT, muscular control of joint, independent ambulation. Can start to transition off brace but do not rush.
  - **GOALS:** Keep full and pain free ROM and patellar ROM, start to gently improve strength, endurance and proprioception, protect the graft and PF joint, good to normal muscle strength with MMT, start dynamic control of joint normal ADL function, compliance with HEP, normal stair gait, sufficient strength (
  - **RESTRICTIONS:** No cutting, agility, pivoting, twisting, jumping/landing, contact sports.
  - Continue with previous phase's exercises.
  - Modalities at therapist discretion; Patella Mobs
  - Full ROM; Begin closed chain double leg strengthening and advance as tolerates with light resistance, no single leg.
- Isometrics. LE flexibility program; after 10-12 weeks may progress hamstring exercises as tolerates
  - May begin riding road bike outside on flat ground at about 12+ weeks and if have full ROM and good balance;
  - Advance trunk stability. Proprioception training: tilt boards, BAPS board, beam walking, single-leg stance, challenged stance
  - Rhythmic stabilization: manual resistance, band walking
  - Initiate a straight ahead walk/jog program at 12+ weeks, running progression after 12 weeks s/p as tolerated;
  - Golf short game progression 50% swing (chipping and putting) 8-12 weeks s/p.

### PHASE IV: FUNCTIONAL PROGRESSION (*POST-OP MONTHS: 4-9*)

- **PRESENTATION:** No instability, swelling or pain. Good to normal strength with MMT. Unrestricted ADL function.
- **GOALS:** Increase strength/power, endurance, neuromuscular control and dynamic stability in functional activities; education on RTP, no patellofemoral or soft tissue complaints
- **RESTRICTIONS:** No contact sports, no basketball/soccer or similar activities.
- Continue phase 3 exercises. Continue LE flexibility and advance progressive resistive exercises.
- Modalities per therapist discretion; Patella Mobs
- Advance proprioceptive training; Isokinetic training if desired; endurance training - bike, pool, ski machine, etc.

- Advance single leg closed chain activity as tolerates. PNF patterns.
- Can progress golf to full swing; racket and field sports skill training as advised by physician and therapist.

#### **PHASE V: RETURN TO ACTIVITY / SPORT (POST-OP MONTHS: 9-12)**

- **PRESENTATION:** No instability. Muscle function 75%-100% of uninvolved. No c/o instability, pain, or swelling.
- **GOALS:** Safe return to athletics; maintain strength, endurance, power and proprioception; patient education. Regain ability to function at highest desired level. Develop maintenance program.
- Initiate sport-specific and more functional drills as appropriate for patient.
- **RESTRICTIONS:** Progress gradually back to sport specific and contact sports.
- Progress running program: full-speed jog, sprints, figure-of-eight, running and cutting. Add agility drills specific to skill/sport - high-speed stepping drills, unstable surface drills, balance beam, etc. to increase proprioception.
- Gradual return to sports participation; maintain other programs for strength, endurance, and proprioception.
- Advance agility and running drills. Implement drills specific to sport or occupation.
- Determine the potential need for functional protective bracing as prescribed by the physician.
- Functional: Skiing and other sport activities.

#### **FREQUENTLY ASKED QUESTIONS:**

**WEIGHT-BEARING:** Touch down weight bearing with the brace locked in extension for the first 4 weeks.

**ICE:** Ice, elevation and compression. Ice machine on low pressure setting or other methods, 5-6 x daily for 20-30 min. for 7-14 days.

**BRACE:** Brace to sleep 0-28 days, locked in full extension for ambulation and while sleeping until full extension. Brace will be worn for minimum 8 weeks post-operatively even if you are progressing well. This is to protect you from others, not necessarily yourself. This may change if a meniscal repair is performed.

**CRUTCHES:** Typically use 4 weeks s/p surgery.

**TED HOSE:** Wear bilateral legs for 7 days post op, then remove from unaffected side. Wait 8-14 days to remove from surgical leg. You may removed them for bandage changes and hygiene purposes. You may request new ones if needed or can pick them up from your local pharmacy.

**DRIVING:** More a legal/liability concern. **MUST** be off ALL narcotic pain meds, have good control of the leg, and feel safe and in control of vehicle. Recommend to be off crutches and out of knee brace if R leg or if using manual. Assume all risks associated if decision made to drive.

**RUNNING:** Typically do not begin gradual running progression until 12+ weeks s/p procedure.

**JUMPING:** Typically no plyometrics initiated until around 5-6 months s/p procedure.

**RETURN TO SPORT:** Clearance around 9-12 mo., esp. sports requiring quick acceleration/deceleration, agility, and contact sports