

KNEE PLICA EXCISION REHABILITATION PROTOCOL

"As tolerated" should be understood to include with safety for the reconstruction/repair; pain, limp, swelling, or other undesirable factors are indicators that you are doing too much too soon. If any of these should occur, decrease activity level, ice and elevate the leg. Ice should be applied to the knee six to eight times per day and when swelling or pain is present. Return to sport based on provider team (physician, physician assistant, athletic trainer, therapist) input and appropriate testing. All times and exercises are to serve as guidelines. Progression through the protocol should be based upon criteria as opposed to dates listed and will vary depending on each individual patient. Progress should be agreed upon by the patient and his/her team of providers.

Post-Operative Phase I: (Weeks 0 - 2)

Brace:

- None

Crutches/Function:

- Ambulation: weight-bearing as tolerated with crutches

ROM:

- Extension: Full
- Flexion: 90°

Therapeutic Exercises:

- quad sets, isometric knee extension at multiple angles in allowed range of motion and as tolerated at patellofemoral (PF) joint, open kinetic chain (OKC) knee extension 90° to 0° as tolerated at PF joint
- Isometric and OKC hamstring strengthening in pain free ROM
- Hip 4-way SLR (straight leg raise)
- Ankle and foot stretching and strengthening

Manual:

- Scar and soft tissue massage, patella mobilizations

Proprioception:

- BAPS board, weight shifting

Cardio:

- UBE (arm bike)

Modalities:

- NMES (neuromuscular electrical stimulation) for quadriceps atrophy, strengthening as needed
- HVPC (high volt pulsed current) for effusion (swelling) reduction as needed
- Cryotherapy six to eight times per day for 15 to 20 minutes each

Progression to Phase II:

- Ambulation without limp
- ROM: Full extension, 90° of flexion
- Ability to perform a straight leg raise in flexion without knee extension lag

- Minimal effusion

Post-Operative Phase II: (Weeks 2 - 6)

ROM:

- Progress to full

Therapeutic Exercises:

- Closed chain strengthening in pain free ROM, OKC knee extension and flexion as tolerated
- Total leg strengthening
- Core strengthening

Manual:

- Scar and soft tissue massage, patella mobilizations

Proprioception:

- SLS (single limb stance), BAPS, unstable surfaces
- Joint repositioning

Cardio:

- UBE, stationary bike, elliptical

Modalities:

- NMES for quadriceps atrophy, strengthening as needed
- HVPC for effusion reduction as needed
- Cryotherapy 6 to 8 times per day for 15 to 20 minutes each

Progression to Phase III:

- Full and pain-free Knee ROM
- No effusion
- No pain
- Isometric quad strength 70% of non-involved side at 60° knee flexion
- Isometric hamstring strength 70% of non-involved side at 60° knee flexion
- Isokinetic quad strength 70% of non-involved side tested at 300°/sec
- Isometric hamstring/quad ratio >60% tested at 60° knee flexion

Post-Operative Phase III: (Week 6 - 12)

Therapeutic Exercises:

- Progress strengthening in all planes
- Hip and core strengthening

Proprioception:

- SLS, BAPS, unstable surfaces
- Joint repositioning
- Perturbation training (balance against resistance)

Cardio:

- UBE, stationary bike, elliptical, initiate treadmill running

Plyometrics:

- Double-leg plyometrics progressing to single leg as tolerated

Modalities:

- Cryotherapy after activity for 15 to 20 minutes

Progression to Phase IV:

- Full ROM
- No effusion
- No pain
- Isokinetic quad strength 90% of non-involved side tested at 300°/sec

Post-Operative Phase IV: (Month 3 – return to sport and function)

Recommend pursuing Transitional Therapy for return

to sport activities during this phase

- Transitional Therapy – a strength and conditioning program that is lead by medical professionals with a sports medicine background with the goal of transitioning from therapy back to sport
- Contact Connecticut Children's Sports Medicine for details

In addition to ongoing strength, balance, and cardio conditioning, initiate agility drills and sport-specific plyometric activities as tolerated such as:

- **Soccer/Football:** Two-foot ankle hop, double-leg hop, front barrier hop, lateral barrier hop, single-leg hop, power skip, backward skip, double-arm alternate-leg bound, and cycled split squat jump
- **Basketball/Volleyball:** Two-foot ankle hop, double-leg hop, squat jump, double-leg vertical jump, single-leg hop, single-leg vertical jump, power skip, backward skip, double-arm alternate-leg bound, alternate-leg push off box drill, and side-to-side push-off box drill
- **Baseball/Softball/Overhead throwing sports:** Two-foot ankle hop, double-leg hop, front barrier hop, lateral barrier hop, single-leg hop, power skip, backward skip, double-arm alternate-leg bound, cycled split squat jump, and return to throwing program