



ACL Reconstruction with Hamstring Autograft Rehab Protocol

General Guidelines

- Presuppose 8 weeks for complete graft re-vascularization
- CPM not commonly used
- ACL reconstructions performed with mensical repair or transplant follow the ACL protocol. For semitendinosus/ gracilis autografts, isolated hamstring strengthening for 6 weeks. Physician may extend time frames for use of brace or crutches.
- Supervised physical therapy takes place for 3-9 months,

General Progression of Activities of Daily Living

Patients may begin the following activities at the dates indicated (unless otherwise specified by the physician):

- Bathing/showering without brace after suture removal
- Sleep with brace locked in extension for 1 week
- Driving: 1 week for automatic cars, left leg surgery
- 4-6 weeks for standard cars, or right leg surgery
- Brace locked in extension for 1 week for ambulation
- Use of crutches, brace for ambulation for 6 weeks if altered gait. DC assistive device when FWB without limp, ROM 0-90, and patient able to perform SLR without extensors lag.
- Weight bearing as tolerated immediately post-op

Physical Therapy Attendance

The following is an approximate schedule for supervised physical therapy visits:

- Phase I (0-6weeks) 1 visit/week
- Phase II (2-3 weeks) 2-3 visits/week
- Phase III (2-6 months) 2-3 visits/week
- Phase IV (6-9 months) 1 visit/1-2weeks

Rehabilitation Progression

The following is a general guideline for progression of rehabilitation following ACL semitendinosus/gracilis autograft reconstruction. Progression through each phase should take into account-patient status (e.g. healing, function) and physician advisement. Please consult the physician if there is any uncertainty concerning advancement of a patient to the next phase of rehabilitation.

PHASE I: Begins immediately post-op through approx. 6 weeks



Goals:

- Protect graft fixation (assume 8 weeks fixation time) Minimize effects of immobilization
- Control inflammation
- Full extension range-of-motion
- Educate patient on rehabilitation progression

Brace:

- 0-1 week: Locked in full extension for ambulation, sleeping
- 1-6 weeks: Unlocked for ambulation, remove for sleeping

Weight bearing Status:

- 0-6 weeks: Weight bearing as tolerated with two crutches

Therapeutic Exercises

- 4-way multi-hop
- Knee Pendulum
- Heel Slides
- Quad Sets
- Patellar mobilization (emphasis on early superior/inferior glides)
- Non-weight bearing gastroc/soleus, begin hamstring stretches at 4 weeks
- SLR, all planes, with brace in full extension until quadriceps strength is sufficient to prevent extension lag
- Quadriceps isometrics at 60 degrees and 90 degrees
- Stationary bike (high seat, low tension with emphasis on promoting ROM. Begin partial revolution to full revolution as tolerated.)

PHASE II: Begins approx. 6 weeks to 8 weeks

Criteria for advancement to Phase II:

- Good quad set, SLR without extension lag
- Approx. 90 degree of flexion
- Full knee extension
- No signs of active inflammation

Goals:

- Restore normal gait
- Maintain full extension (especially hip extension), progress flexion range of motion
- Protect graft fixation



- Initiate open kinetic chain hamstring exercises

Brace/Weight Bearing Status:

Discontinue use of brace and crutches as allowed by physician when the patient has full extension and can SLR without extension lag

Patient must exhibit non-antalgic gait pattern, consider using single crutch or cane until gait is normalized

Therapeutic Exercises:

- Wall Slides 0-45 degrees to mini-squats
- Continue stationary bike
- Closed chain terminal extension with resistive tubing (proximal to knee) or weight machine
- Toe raises
- Balance exercises (e.g. Single-leg balance, KAT)
- Hamstring curls
- Aquatic therapy with emphasis on normalization of gait
- Continue hamstring stretches, progress to weight bearing gastroc/soleus stretches

PHASE III: Approx. 8 weeks - 6 months

Goals:

- Full range of motion
- Improve strength, endurance and proprioception of the lower extremity to prepare for functional activities
- Avoid over stressing the graft fixation
- Protect the patellofemoral joint

Therapeutic Exercises:

- Continue flexibility exercises as appropriate for patient
- Stairmaster (begin with short steps, avoid hyperextension)
- Nordic Trac Knee extensions: 90-45 degree, progress to eccentrics
- Advance closed Kinetic chain strengthening (one-leg squats, leg press 0-45 degree, step ups begin and 2" and progress to 8", etc)
- Progress proprioception activities (slide board, use of ball, racquet with balance activities, perturbation activities, etc.)
- Progress aquatic program to include pool running, swimming (no breaststroke)

PHASE IV: 6months- 9months



Criteria for advancement to Phase IV:

- Full, pain free ROM
- No evidence of patellofemoral joint irritation
- Strength and proprioception approximately 70% of uninvolved leg
- Physician clearance to initiate advanced closed kinetic chain exercises and functional progression

Goals:

- Progress strength, power, proprioception to prepare for return to functional activities

Therapeutic Exercises

- Continue and progress flexibility and strengthening program
- Initiate plyometric program as appropriate for patient's functional goals
- Functional progression including but not limited to:
 - Walk/jog progression
 - Forward, backward running , 1/2, 3/4, full speed
 - Cutting, crossover, carioca, etc.
- Initiate sport-specific drills as appropriate for patient

PHASE V: 9 month post-op

Criteria for advancement to PHASE V:

- No patellofemoral or soft tissue complaints
- Necessary joint ROM, strength, endurance and proprioception to safely return to work or athletics
- Physician clearance to resume partial or full activity

Goals:

- Safe return to athletics
- Maintenance of strength, endurance, proprioception (continue to work on hip extension)
- Patient education with regard to any possible limitations

Therapeutic Exercises

- Gradual return to sports participation
- Maintenance program for strength endurance

Bracing

The physician may recommend a functional brace for use during sports for the first 1-2 years after surgery