



GUIDELINES FOR REHABILITATION FOLLOWING ACL HAMSTRING AUTOGRAFT RECONSTRUCTION

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GENERAL GUIDELINES

- Assume 8 weeks for complete graft revascularization
- ACL reconstructions performed with meniscal repair or transplant follow the ACL protocol. For semitendinosus autografts, hamstring stretching is avoided for 4 weeks and isolated hamstring strengthening for 6 weeks. Time frames for use of brace or crutches may be extended by physician.
- 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
- Weight bearing as tolerated immediately post-op

PHYSICAL THERAPY ATTENDANCE

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

Phase I (0-6 weeks):	2-3 visit/week
Phase II (6-8 weeks):	2-3 visits/week
Phase III (2-6 months):	2-3 visits/week
Phase IV (6-9 months):	1 visit/1-2 weeks

REHABILITATION PROGRESSION

The following is a general guideline for progression of rehabilitation following ACL semitendinosus 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 approximately 6 weeks

Goals:

- Protect graft fixation
- 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 (maybe PWB if meniscal repair x 4 weeks)

Therapeutic exercises:

- Heel slides
- Quad sets
- Patellar mobilization
- Non-weight-bearing gastroc/soles. 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° and 90°

PHASE II

Begins approximately 6 weeks post-op and extends to approximately 8 weeks

Criteria for advancement to Phase II:

- Good quad set, SLR without extension lag
- Approximately 90° of flexion
- Full extension
- No signs of active inflammation

Goals:

- Restore normal gait
- Maintain full extension. Progress flexion range of motion
- Protect graft fixation
- Initiate open kinetic chain hamstring stretches

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°, progressing to mini-squats
- 4-way hip
- Stationary bike (begin with high seat, low tension to promote ROM and progress to single leg)
- Closed chain terminal extension with resistive tubing 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/soles stretches
- Consider flexionator and or extentionator for stiffness

PHASE III

Begins at approximately 8 weeks and extends through approximately 6 months

Goals:

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

Therapeutic Exercises:

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

PHASE IV

Begin approximately 6 months and extends through approximately 9 months

Criteria for advancement to Phase IV:

- Full, pain-free ROM
- No evidence of patellofemoral joint irritation

- Strength and proprioception approximately 70% of uninjured
- Physician clearance to initiate advanced closed kinetic chain exercises and functional progression

Goal:

- 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/job progression
Forward/backward running, 1/2, 3/4, full speed
Cutting, cross-over, carioca, etc.
- Initiate sport-specific drills as appropriate for patient

PHASE V

Begins at approximately 9 months post-op

Criteria for advancement to Phase V:

- No patellofemoral or soft tissue complaint
- 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 and proprioception
- Patient education with regards to any possible limitations

Therapeutic Exercises:

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

Bracing:

Functional brace may be recommended by the physician for use during sports for the first 1-2 years after surgery