



YOUSIF
Orthopedic Surgery

ACL ALLOGRAFT RECONSTRUCTION PROTOCOL **Matthew Yousif, DO**

GENERAL GUIDELINES

- Allograft revascularization is slower than for autografts. Therefore crutches and brace are continued for 6 weeks.
- CPM not commonly used
- ACL reconstruction performed with meniscal repair or transplant follow the ACL protocol with avoidance of open kinetic chain hamstring work for 6 weeks. Time frames for use of brace and crutches may be extended by the 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):	1 visit/week
Phase II (6-8 weeks):	2-3 visits/week
Phase III (2-6 months):	2-3 visits/week
Phase IV, V (6 months +):	Discharge after completion of appropriate Functional progression

REHABILITATION PROGRESSION

The following is a general guideline for progression of rehabilitation following ACL Allograft Reconstruction. Progress 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
- Flexion to 90-degrees
- Normalize gait mechanics in pool. Flexion to 90-degrees only

Brace:

- Post op brace 0-6 weeks
- 1st week: Locked in full extension for ambulation and sleeping
- 1-6 weeks: Brace remove for rehab and sleeping
- 6-12 weeks: On only in chaotic situations
- After 12 weeks brace is optional

Weightbearing Status

- 0-2 weeks: Touch down weight bearing with two crutches
- 2-4 weeks: Partial weight bearing
- 4-6 weeks: Weight bearing as tolerated

Therapeutic Exercises:

- Immediate leg curls only if non-painful. Prefer AAROM
- Heel slides
- Quad sets
- Patellar mobilization
- Non-weight bearing gastroc/soleus stretching, begin hamstring stretches at 2 weeks
- SLR, all planes, with brace in full extension until quadriceps strength is sufficient to prevent extension lag. Without brace, when has minimal Quad Lag
- Quadriceps isometrics at 60-degrees and 90-degrees
- Pool immediately once sutures are removed (to work on gait machines)
- At 4-weeks post-op add biking, deep well pool running with aqua vest, leg press, quadriceps stretching.
- Partial weight bearing closed chain knee extension 0-45-degrees
 - Theraband
 - Leg press
 - Pool mini-squats
- Prone knee flexion
- Gentle hamstring stretching

PHASE II

Begins at 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:

- Initiate closed kinetic chain exercises
- Restore normal gait
- Protect graft fixation

Brace/Weightbearing 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 antalgic gait pattern. Consider using single crutch or cane until gait is normalized.

Therapeutic Exercises:

- Wall slides 0-45-degrees, progressing to mini-squats
- 4-way hip
- Stationary bike (begin with high seat, low tension to promote ROM, 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/soleus stretches

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
- Protect the patellofemoral joint

Therapeutic Exercises:

- Continue and progress previous flexibility and strengthening activities
- Stairmaster (begin with short steps, avoid hyperextension)
- Nordic Trac
- Knee extensions 90°-45°, progress to eccentrics
- Advance closed kinetic chain activities (leg press, on-leg mini squats 0-45° of flexion, step-ups begin at 2" progress to 8", etc.)
- Progress proprioception activities (slide board, use of ball, racquet with balance activities, etc.)
- Progress aquatic program to include pool running, swimming (no breaststroke)

PHASE IV:

Begins at 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 uninvolved
- Physician clearance to initiate advanced closed kinetic chain exercises and functional progression

Goal:

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

Therapeutic Exercises:

- Continue and progress previous flexibility and strengthening activities
- Functional progression including:
 - Walk./Jog progression
 - Forward, backward running, ½, ¾, full speed

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:

- Initiate cutting and jumping activities
- Completion of appropriate functional progression
- Maintenance of strength, endurance, proprioception
- Patient education with regards to any possible limitations

Therapeutic Exercises:

- Functional progression including, but not limited to:
 - Walk/jog progression
 - Forward/backward running, ½, ¾, full speed
 - Cutting, crossover, carioa, etc.
 - Plyometric activities as appropriate to patient's goals
 - Sports-specific drills
- Safe, gradual return to sports after successful completion of functional progression
- Maintenance program for strength and endurance

Bracing:

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