

ACL Reconstruction

Physical Therapy Protocol

General Guidelines: The included protocol is intended to be a guideline for the therapist in assisting the patient having undergone an ACL reconstruction with either patella tendon autograft, hamstring autograft, or allograft. The overall speed of progression is determined by the therapist upon achieving the designated goals. Determined length of therapy is 2-3 times weekly for 6-12 weeks with emphasis on a home exercise program. Modalities may be used as needed.

Rehabilitation Protocol

Phase 1: 0-2 weeks postop

Goals: Protect the graft, control pain, diminish swelling, begin regaining knee range of motion with focus on full extension, patella mobility, restore normal gait

Weight bearing: as tolerated with hinged knee brace locked in extension. To use crutches for assistance for 2 weeks.

Brace: hinged knee brace locked in extension for ambulation and sleep. May unlock brace during therapy and home exercises (limited to 90° with associated meniscus repair for 6 weeks)

Exercises:

- Quad Isometric Contractions
- Patella mobilization
- Ankle pumps
- Straight leg raises to 45° with brace locked in extension
- Hip adduction, abduction, extension
- Knee Extension: Heel prop, Prone leg hang
- Knee Flexion: assisted by contralateral leg, heel slides
- Proprioception: Single leg balance
- Stationary cycling without resistance

Phase 2: 2-6 weeks postop

Goals: Protect the graft, control pain, maintain full knee extension, achieve full flexion, develop muscular control, achieve normal gait

Weight bearing: as tolerated. Progression to wean off crutches

Brace: May unlock at all times once able to achieve full extension. May remove brace during supervised therapy.

Exercises:

- Continue Phase 1
- Heel/toe raises
- Mini squats to 45°
- Wall slides
- Prone hamstring curls (delay until 6 weeks if hamstring autograft patient)
- Front/side lunges
- Front/lateral step-ups
- Simple leg press
- Proprioception: single leg balance, balance board, BOSU trainer
- Stationary cycling—increase resistance as tolerated
- Aquatic exercise: pool walking, straight-leg flutter kicks, water bicycle
- Cardiovascular: elliptical, stationary bike, treadmill walking (no jogging/running).
- AVOID open chain knee resisted knee extension/curls machine

Phase 3: 6-12 weeks postop

Goals: Protect the graft, maintain full range of motion, enhance leg muscular strength and endurance, improve proprioception and neuromuscular control

Weight bearing: as tolerated

Brace: May wean out of brace as tolerated.

Exercises:

- Continue Phase II/lower extremity strengthening
- Continue cardiovascular training
- Introduce stair climber
- Improve proprioception/neuromuscular control
- Pool program if desired
- AVOID open chain resisted knee extensions/curls machine

Phase 4: 3-4 months postop

Goals: Maintain full range of motion, enhanced quad/hamstring strength 80% of contralateral leg, improve lower limb endurance, achieve normal running gait

Exercises:

- Continue Phase 3 exercises
- Continue daily flexibility/stretching
- May initiate eccentric knee extensions
- Initiate running progression protocol: light jogging→jogging→running on level track surface/treadmill→running on level pavement at 4 months
- Avoid hiking/running on uneven surfaces

Phase 5: 4-6 months postop

Goals: Maintain full pain-free range of motion, strength > 80% of contralateral leg, normal running gait, sufficient proprioception/neuromuscular control to begin agility exercises

Exercises:

- Straight-ahead running on level surfaces (no trail running until 6 months)
- Agility drills: side steps, figure of eight drills, stair running, shuttle running, ladder drills, straight ahead acceleration/deceleration
- At 5 months: begin plyometric drills, two-leg and single-leg jumping. May introduce sport-specific drills
- At 6 months: Safe return to athletic participation
 - Use of functional brace generally not used, but may be considered in athletes participating in cutting/pivoting sports on an individual basis.
 - Physician clearance examination prior to return to full sport participation
- Maintenance program for continued knee strength and endurance