

Hays Medical Center

ACL Reconstruction

General Principles:

This protocol was designed to provide the rehabilitation professional with a guideline of postoperative care. It should be stressed that this is only a protocol and should not be a substitute for clinical decision making regarding a patient's progression. Actual progression should be individualized based upon your patient's physical examination, progress, and presence of any complications.

**NOTE: Protocol may need to be modified if multiple ligaments or meniscus are involved.
Ligament testing should only be performed by the physician throughout the protocol.**

PHASE I: (Immediate)

Week 1

Orthotics-

1. Knee brace locked in full extension at all times except for rehab exercises
2. Elastic bandage as needed to control swelling

Weight Bearing-

1. Weight bearing at 50% with use of crutches

Modalities-

1. Patients are encouraged to use polar care unit/ice for 20 minutes following exercises and as needed for pain control throughout protocol.
2. Other modalities at the discretion of the therapist based on clinical findings

ROM-

1. Active and Passive ROM progressing to full as tolerated

Exercises-

1. Quad sets
2. Ankle pumps
3. Patella Mobilizations
4. Calf, Hamstring, and Knee extension stretching
 - a. **IF hamstring graft**, Avoid excessive stretching of the hamstring the first 6 wks
5. Prone Hangs, no resistance
6. May start Heel slides / Wall slides
7. Straight Leg Raises (May use brace if needed to maintain full extension)
 - a. All planes, NO resistance
- 8 Stationary bike or NU-Step
9. Neuromuscular Re-Education as needed to improve quality of muscle contraction

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Week 2

Orthotics-

1. Knee brace at all times, may unlock brace as ROM and quad control improves

Weight Bearing-

1. Progress to full as tolerated.
2. May discontinue crutches with normal gait

Modalities (PRN)-

1. Continue modalities as needed

ROM-

1. Continue progressing active and passive ROM to full as tolerated

Exercises-

1. Progress Week 1 exercises as tolerated
2. May add resistance to prone hangs to reach full extension
3. After reaching 0 to 90° of Active knee flexion:
 - a. Shuttle / Leg Press – Bilateral progressing to Unilateral
 - b. Standing / Shuttle Calf Raises
4. Standing balance / proprioception as weight bearing allows
5. Active hamstring curls (**IF Hamstring graft**, no active hamstrings until Wk 4)

PHASE II: (Intermediate)

Week 3 – 7

Orthotics-

1. Continue to wear knee brace at all times.
2. May progress into functional ACL brace when available at Wk 6-7

Weight Bearing-

1. Full weight bearing as tolerated with normal gait

Exercises-

1. Continue Phase I exercises
2. Elliptical runner
3. Progress into hamstring strengthening (**IF Hamstring graft**, no resisted hamstrings until Wk 6)
 - a. Forward Chair scoots
 - b. Biodex eccentric/concentric resistance
 - c. Long arc hamstring curls, progress to weight machines as appropriate
4. Isometric Quads Positioned at 60° of knee flexion
5. Closed-chain strengthening with focus on VMO control, core stability, and avoidance of varus/valgus movement
 - a. Step Ups, Forward Lunges, Mini-Squats
6. Resisted Walking
 - a. Forward/Backward initially, progress to Lateral
 - b. Maintain proper knee alignment with good eccentric control
7. Progress balance/proprioception to all 3 planes but limit range and speed as patient can control

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PHASE III: (Strengthening)

Week 8 – 12

Orthotics-

1. Continue functional brace full time until 4 months post-op.

Exercises-

1. Continue Phase II exercises
2. Progress to Lateral, Backward, and Walking Lunges
3. Backward Elevated Treadmill walking
4. May initiate Open Chain Quad strengthening
 - a. Short-arc progressing to Full-arc
 - b. Monitor for patella-femoral pain
5. Isokinetics
 - a. Limit extension for -20° initially
 - b. Start with 240 to 300 degrees per second
 - c. Progress to 180 to 300 degrees per second as tolerated
6. Continue to focus on balance/proprioception
7. Begin basic ladder series **at Wk 10**
8. Aquatics
 - a. Closed chain strengthening and proprioception exercises
 - b. Flutter kicks with straight leg, intervals of 30-60” of work
 - c. Jogging at Wk 10 starting in deep water, progressing to chest/waist deep

PHASE IV: (Advanced Strengthening)

3 MONTHS POST-OP

Exercises-

1. Continue Phase III exercises
2. Progress to aggressive strengthening of the quad and hamstrings
3. Slideboard lateral gliding
4. Aquatic
 - a. 2 leg jumps (Stationary progressing to fwd/bwd and side to side)
 - b. Skipping and lateral shuffle
 - c. Progress to plyometric / explosive jumps as appropriate
5. Testing to be completed prior to patient's 3 month physician appointment
 - a. Isokinetic Strength Test
 - Limit ROM for the test to -30* extension to full flexion
(Goal: 70% Quads, 80% Hamstrings of uninjured leg)
 - b. Y Balance Test- Anterior, Posterior Medial, Posterior Lateral
(Goal: 75% of uninjured leg)

***Please complete functional testing sheet and send results to physician**
6. Straight ahead jogging, level surfaces

***Only with physician approval based on strength, stability, and case by case basis**
7. After 2 weeks of running program, progress to gentle lateral movements/agility work IF good quad control, no pain, and good stability
 - a. Defensive slides, floor ladder
 - b. Low level stationary jumps focused on proper landing mechanics

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4 MONTHS POST-OP

Orthotics-

1. May discontinue functional knee brace for daily activities.
2. Continue functional brace for high risk activity and exercise until 12 months post-op

Exercises-

1. Initiation of light sports activity
 - a. Jumping, progressing to unilateral hops with good strength and control
 - b. Shuttle bounding
 - c. low-level change of direction
 - d. Running program should include increased speed, rounded turns, backpedal
2. Testing to be completed at 4 months
 - a. Isokinetic Strength Test
 - Limit ROM for the test to -30* extension to full flexion
 - (Goal: 80% Quads, 90% Hamstrings of uninvolved leg)
 - b. Y Balance Test- Anterior, Posterior Medial, Posterior Lateral
 - (Goal: 80% of uninvolved leg)

5-9 MONTHS POST-OP

1. Initiation of light sports activity
 - a. Plyometrics
 - b. Sport specific agility
 - c. See Interval Golf and Interval Running programs
 - d. DIME warmup
2. Testing to be completed prior to 5-9 month physician appointment
 - a. Isokinetic Strength Test at 180, 240, and 300 degrees per second
 - (Goal: 90% Quads, 90% Hamstrings of uninvolved leg)
 - b. Y Balance Test- Anterior, Posterior Medial, Posterior Lateral
 - (Goal: 90% of uninvolved leg)
 - c. Hop Testing – Single hop for distance, 3 hop test, Crossover Hop test, 6m timed hop
 - (Goal: 90% of uninvolved leg)

***Please complete functional testing sheet and send results to physician**
3. Patients will have full release to play sports during this time frame, but only with physician approval based on strength, functional test results, and overall level of function

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