

REHABILITATION FOLLOWING ACL RECONSTRUCTION

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I. Immediate Post-Operative Phase

Goals: Restore full passive knee extension
Diminish joint swelling and pain
Restore patellar mobility
Rapidly improve knee flexion
Re-establish quadriceps control
Restore independent ambulation

A. Postoperative Day 1

Brace- /immobilizer applied to knee, locked in full extension during ambulation for 1st 3 weeks. Removed for CPM use and supervised exercises.

Weight bearing- Two crutches, weight bearing as tolerated

Exercises:

- Ankle Pumps
- Overpressure into full, passive knee extension
- Active and Passive knee flexion
- Straight leg raises (Flexion, Abduction, Adduction)
- Quadriceps isometric setting
- Hamstring stretches
- Mini squats, weight shifts

Ice and elevation - 20 minutes out of every hour, when awake, and elevate with knee in full extension (in brace)

ROM- 0-45/50 degrees

B. Postoperative Day 2-3

Range of Motion: Remove knee from brace to perform range of motion exercises 4-6 times a day with supervision and/or assistance

Exercises:

- Multi-angle isometrics at 90 and 60 degrees
- Knee extension 90-40 degrees

- Overpressure into extension
- Patellar mobilization
- Ankle Pumps/SLR

C. Postoperative Day 4-7

Range of Motion: Remove brace to perform range of motion exercises 4-6 times per day, knee flexion 90 degrees by day 5, approximately 100 degrees by day 7

Exercises:

- Add standing hamstring curls
- Quadriceps isometric setting
- Proprioception and balance activities
- Mini squats (only once good quad set) /weight shifts

II. Early Rehabilitation Phase (Week 2-4)

Goals: Maintaining full passive knee extension
 Gradually increase knee flexion
 Muscle control and activation
 Normalize patellar mobility
 Restore proprioception/neuromuscular control

A. Week Two

Range of Motion: Self ROM stretching (4-5 times daily), emphasis on maintaining full, passive range of motion

Exercises:

- Isometric Quad sets
- SLR (4planes)
- Leg press (0-60 degrees)
- Knee extension (90-40 degrees)
- Half squats (0-40degrees)
- Weight Shifts
- Front and side Lunges
- Hamstring Curls standing (AROM)
- Overpressure in extension
- PROM 0-100 degrees
- Patellar mobilization
- Well leg exercises

B. Week Three

Range of Motion: Continue range of motion stretching and overpressure into extension (ROM should be 0-100/105 degrees)

Exercises:

- Continue all exercises as in week two
- PROM 0-105 degrees
- Bicycle for ROM stimulus and endurance
- Pool walking program – if available
- Lateral lunges (straight plane)
- Front Step Downs
- Lateral Step-Overs
- Stair Stepper machine
- Progress Proprioception drills, neuromuscular control drills

Brace: At end of 3rd week brace is unlocked to allow full ROM. Brace is worn until end of 6th post op week.

III. Progressive Strengthening/Neuromuscular Control Phase (Week 4-10)

Goals: Restore full knee range of motion (0-125 degrees)

Improve lower extremity strength

Enhance proprioception, balance, and neuromuscular control

Improve muscular endurance

Restore limb confidence and function

A. Week 4-5

Exercises:

- Leg Press (0-100 degrees)
- Knee extension 90-40 degrees
- Hamstring Curls (isotonic)
- Hip Abduction/Adduction
- Hip Flexion and Extension
- Lateral Step Overs/ Step Downs
- Front Step Downs
- Wall Squats
- Vertical Squats
- Standing Toe/ Calf Raises
- Proprioception Drills
- Bicycle
- Stair Stepper
- Pool Program (backward running, hip and leg exercises)
- Balance board squats
- Lunges

C. Week 6-7

Exercises:

- Continue all exercises
- Pool running forward, agility drills
- Balance on tilt boards
- Progress to balance and ball throws
- Wall slides/squats

D. Week 8-9

Exercises:

- Continue all exercises
- Plyometric Leg Press
- Stability Training
- Isokinetic exercises
- Stair Stepper
- Bicycle

E. Week 10

Exercises:

- Continue all exercises listed in Weeks 6-10
- Plyometric Training Drills
- Continue Stretching
- Progress strengthening exercises and neuromuscular training

IV. Advanced Activity Phase (Week 10-16)

Goals: Normalize lower extremity ROM
 Enhance muscular power and endurance
 Improve neuromuscular control
 Perform selected sport-specific drills

A. Week 10-12

Exercises:

- May initiate running program
- May initiate light sport program
- Continue all strengthening drills
- Continue all Neuromuscular training

B. Week 14-16

- Progress program
- Continue all drills above
- May initiate lateral agility drills
- Backward running

V. Return To Activity Phase (Month 16-20)

Goals: Gradual return to full-unrestricted sports depending on extent of injury, surgery and sport

Achieve maximal strength and endurance

Normalize neuromuscular control

Progress skill training

Exercises:

- Continue strengthening exercises
- Continue neuromuscular control drills
- Continue Plyometric drills
- Progress running and agility training
- Progress sport specific training
 - Running/cutting/agility drills
 - Gradual return to sport