Rehabilitation Following
ACL-HT Reconstruction

• No full arc knee extensions through six months post-op.

I. Immediate Post-Operative Phase

POD 1

Brace – Brace locked at zero degrees extension for ambulation.

Weight Bearing – Two crutches (less than 50% WB).

Ankle pumps – (20-30 per hour)

Cryotherapy – Ice 20 minutes out of every hour and elevate with knee in extension.

POD 2 to 9

Goals: - Decrease pain / inflammation.
       - PROM 0-90/100 degrees.

Brace – Brace locked at zero degrees extension for ambulation.

Weight Bearing – Two crutches as tolerated.

Range of Motion - Patient out of brace 4-5 times daily for seated self ROM.
       - PROM: 0-90/100 degrees.

Exercises:
• Intermittent ROM exercises (0-90 degrees)
• Propped heel exercise to maintain full extension.
• Patellar mobilizations
• Ankle pumps (20-30 per hour to prevent blood clots)
• Straight leg raises (Flexion and Abduction only)
• Quad Sets
• Calf Stretching
• No Hamstring Stretching

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Modalities:
- NMES to quads with quad sets / straight leg raises
- IFC / Hi-Volt electrical stimulation.
- Ice 20 minutes out of every hour with knee elevated and extended.

Post-op check: Follow up with physician at 9 days post-op.

II. Maximum Protection Phase (Week 2-8)

Goals:
- Decrease pain/swelling
- Prevent quad atrophy
- Protect graft
- Maintain full passive/active knee extension
- ROM 0-125 degrees

A. Week 2

Brace: Brace locked at zero degrees for ambulation.
Brace can be unlocked during non wt-bearing situations.

Weight Bearing: As tolerated (goal to discontinue crutches 7-10 days P/O.)

Range of Motion: Self ROM, emphasis on maintaining full passive extension.
PROM: 0-100 degrees.

Exercises:
- PROM/AAROM 0-105 degrees
- Propped heel extension
- Patellar mobilizations
- Straight leg raises (Flexion and Abduction only)
- Mini squats (0-40 degrees)
- Knee extension (90-40 degrees)
- Proprioceptive training
- PRE program – start with 1 lb., progress as tolerated

Modalities:
- NMES as needed for quad control.
- Electrical stimulation for pain/inflammation control.
- Ice, compression, elevation
B. **Week 4**

Brace: Brace unlocked for ambulation at 4 weeks post-op.

**Range of Motion:**
- Maintain full extension
- PROM: 0-120 degrees

**Precautions:** No full arc knee extensions until minimum 6 months post-op.

**Exercises:**
- Same as week two
- Initiate SLR into Adduction and Extension
- Initiate stationary bicycle when patient has 110-115 degrees of flexion.
- Leg Press (0-60 degrees)
- Step-ups (forward/lateral)
- Wall slides
- Emphasize CKC exercise
- Hip strengthening
- Core strengthening

C. **Week 6**

Brace: Discontinue use of drop locked brace.

**Range of Motion:**
- PROM 0-125 degrees
- AROM 0-115 degrees

**Exercises:**
- Same as week 4
- Initiate Hamstring curls (light resistance)
- Bicycle/Stairmaster
- Initiate step downs
- Hip strengthening
- Core strengthening

D. **Week 8**

MD recheck: MD to consider use of functional ACL brace.

**Exercises:** Continue PRE Program.

III. **Moderate Protection Phase (Week 10 – 16)**

**Goals:**
- Maximize strengthening of quads/lower extremity
- Protect patellofemoral joint

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Precautions: - No full arc extensions until minimum 6 months post-op.

A: **Week 10**

Range of motion: 0-130/135 degrees.

**Exercises:**
- Knee extension (90-40 degrees)
- Leg Press (0-60 degrees)
- Mini Squats (0-45 degrees)
- Forward/Lateral Step Ups
- Step Downs
- Hamstring Curls
- Hip Abd/Add
- Calf Raises
- Wall squats
- Lunges
- Proprioceptive training
- Bike/Stairmaster/Elliptical
- Hip/Core strengthening

B. **Week 12-14**

**Exercises:**
- Continue all above exercises

**IV. Light Activity Phase (Month 4-5)**

**Criteria to enter Phase IV:**
- AROM 0->125 degrees
- Quad strength 70% of contralateral side, knee flexor/extensor rated at 70-79%.
- Minimal/no effusion
- Satisfactory clinical exam

**Goals:** - Development of strength, power, endurance
- Begin gradual return to functional activities

A. **Week 16**

**MD Recheck:** 4 months post-op.
- * Earliest timeframe to initiate light agility/functional progression drills (with MD approval).

**Exercises:**
- Emphasize eccentric quad work
- Continue closed chain exercises, step-ups, mini squats, leg press

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• Continue knee extension (0-40 degrees)
• Hamstring curls
• Calf stretches
• Hip abduction/adduction
• Bicycle for endurance
• Stairmaster
• Proprioceptive training
• Core Strengthening

B. Month 5-6

Functional Testing:
• Single Leg, Lateral Timed Hop (20 seconds)
• Single Leg Broad Jump
• Triple Hop Test
• Single Leg Vertical Jump

Exercises:
• Continue all above exercises
• Progress agility program
• Consider initiation of plyometric program (with satisfactory functional test and MD approval)
• Consider initiation of running program (MD approval)
• Initiate jump rope program (MD approval)
• May initiate full-arc knee extensions at 6 months post-op.

Criteria for Running / Plyometric Programs:
• No pain/swelling
• Satisfactory clinical exam

V. Return to Activity Phase (Month 6-7)

○ This is the earliest the patient should plan on returning to competitive athletics.

Goals:
• Achieve maximal strength and endurance.
• Return to sport activities with MD approval.

Return to sport requirements:
• Quadriceps strength of at least 90% of normal leg.
• Hamstring strength of at least 90% of normal leg.
• Full Range of Motion
• No swelling
• Good stability
• Ability to complete a running program.
• Pass functional test with >90% on all tests without pain/hesitation and demonstrate good hip muscular control.

Functional Testing:
• Single Leg, Lateral Timed Hop (20 seconds)
• Single Leg Broad Jump
• Triple Hop Test
• Single Leg Vertical Jump
• Sport Specific Activities demonstrated without deficiencies.

o Continue strengthening program for one year from surgery.