

Palmetto Health USC

ORTHOPEDIC CENTER

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ACL DEFICIENT KNEE REHABILITATION PROGRAM 3-3-4-4 PROGRAM

Phase I. Acute Phase (first 3 weeks)

Partial Weight Bearing Phase

Goals: Decrease pain/inflammation
Protect remaining fibers of ACL, allow healing
Prevent muscular atrophy - quads
Prevent the effects of immobilization

1. Brace: A brace may be used to allow range of motion in a non-painful arc only.
(usually set 20 -90°)
2. Weight Bearing: As tolerated, partial with 1 or 2 crutches.
3. Range of Motion Exercises: Active assisted ROM non-painful arc; performed 4-5 x daily.
Increase range by 5° extension/10° flexion per week.
4. Modalities: Ice, compression, elevation, HVGS, Cryotemp, etc.
5. Exercises: Isometrics - Quad sets, multi-angle quads
Straight leg raises (4 way)
Isometric hamstrings
Home Electrical Muscle Stimulator (4-5 hrs/day)
Seated Balance Drills
Patellar mobilizations
6. Patient Education

Phase II: **Subacute Phase (week 4-6)**

Range of Motion & Ambulation Phase

Goals: Gradually increase ROM
Protect healing tissue
Increase strength
Ambulation without assisted device

Criteria To Enter Phase II:

- 1) ROM 85% of contralateral side
- 2) Strength 4/5
- 3) Decrease swelling/pain

1. Range of Motion: Increase 5° extension and 10° flexion per week. Full ROM 4-5 weeks post injury.
2. Brace: Continue as needed.
3. Weight Bearing: Gradual increase, D/C crutches 4-5 weeks post injury.
4. Range of Motion Exercises: Continue AAROM 4-5 x daily.
5. Exercises: Quad Sets & SLR
Knee Extensions (100-40°)
Mini-Squats
Leg Press
Bicycle
Nordic Trac
Stairmaster
Isokinetics (100-40°) high speed only
Hamstring Curls
Hip Abd/Adduction
Proprioception Drills
Pool Program
 walking (week 3-4)
 running (week 4-5)

Phase III: Strengthening Phase (week 7-10)

Goals: Increase strength/increase power
Increase endurance
Increase neuromuscular control
Fast Speed Training

Criteria To Enter Phase III;

- 1) Full ROM
- 2) Strength 5/5
- 3) Full WB
- 4) No episodes of giving way

Exercises: 4 quad program - Isotonic Knee Extension (100- 40°)
Mini-squats (gradually increase weight)
Leg press (0-70°)
No episodes of giving way

4 Endurance Program - Bicycle (30 min >)
Nordic Trac
Pool Running
Stairmaster

Fast Speed Training - Exercise Tubin (Breg)
Fast hamstring curls
Fast hip ex/flex
Fast D1 pattern

Balance Drills - Breg Kat System
Balance Board (single leg)

Plyometrics - Box Jumps (optional)
Leg Press

Continue isotonic hamstrings, hip abd/add/ext and calf strengthening

Initiate walk/run program

Brace: Functional ACL Brace (optional)

Phase IV: Return to Activity Phase (week 11 --->)

Goal: Gradually increase functional activities & gradually return athlete to sport

Criteria To Participate:

- 1) Full non-painful ROM
- 2) Proprioception Test 95% of opposite leg
- 3) Isokinetic Test
 - 65% Quad Torque/BW ratio (180°/s)
 - 70-75% Hamstring/Quad ration (180°/s)
 - 95% Work/BW ration (180°/s)
- 4) Hop Test (optional)
- 5) Satisfactory Clinical Exam

Continue Strengthening Program:

- 4 Quad Program
- 4 Endurance Program
- Continue Balance Drills
- Continue Backward Running