

# Palmetto Health USC

## ORTHOPEDIC CENTER

104 Saluda Point Drive  
Lexington, SC 29072  
(803) 296-9205

S. WENDELL HOLMES, JR., M.D.  
FRANK K. NOOJIN, M.D.

### DISTAL REALIGNMENT REHABILITATION PROGRAM (FULKERSON PROCEDURE AND VMO ADVANCEMENT)

#### I. IMMEDIATE POSTOPERATIVE PHASE (Day 1-5)

- Goals:** Diminish swelling/inflammation (control hemarthrosis)  
Diminish postoperative pain  
Initiate voluntary quadriceps control  
Independent ambulation
- Brace:** Brace for ambulation only- Brace locked 0-2 weeks
- Weight Bearing:** As tolerated two crutches- 25% WB x 3 weeks in brace
- Swelling/Inflammation Control:** Cryotherapy  
Compression bandage  
Elevation and ankle pumps
- Range of Motion:** Full passive knee extension  
Flexion to 45° (Day 1-4)  
Flexion to 60° (Day 5)  
PROM and gentle AAROM only
- Muscle Retraining:** Quadriceps settling isometrics  
Straight leg raises (flexion)  
Hip adduction/abduction  
Neorumuscular electrical stimulation  
**\*\*NO ACTIVE KNEE EXTENSION**
- Flexibility:** Hamstring and calf stretches  
PROM/AAROM within range of motion limitations  
Patellar mobilizations

**II. ACUTE PHASE (Week 2-4)**

**Goals:** Control swelling and pain  
Promote healing of realignment tibial tuberosity  
Quadriceps strengthening

**Brace:** Continue brace for ambulation only- 0-45°, 2-4 weeks  
0-60°, 4-6 weeks  
Discontinue brace if approved by MD- 6 weeks

**Weight Bearing** Progress WBAT more than 3 weeks

**Swelling/Inflammation:** Continue use of cryotherapy  
Compression bandage  
Elevation

**Range of Motion:** PROM/AAROM exercises  
Range of motion 0-75° (Week 1-3)  
Range of motion 0-90° (Week 4)

**Muscle Retraining:** Electrical muscle stimulation to quadriceps  
Quad setting isometrics  
Straight leg raises (flexion)  
Hip abduction/adduction  
Hip extension  
*GENTLE* submaximal isometric knee extension (multi-angle)

**WEEK 4** Light leg press  
Vertical squats (no weight)

**Flexibility:** Continue hamstring, calf stretches

**III. SUBACUTE PHASE – “MOTION” PHASE (Week 5-8)**

**Goals:** Gradual improvement in range of motion  
Improve muscular strength and endurance  
Control forces on extension mechanism

**Weight Bearing:** One crutch (Week 4-6)  
Discontinue crutch Week 6

**Range of Motion:** PROM 0-115° (Week 5)  
PROM 0-125° (Week 6)  
PROM 0-125/135° (Week 8)

**Exercises:** Continue electrical muscle stimulation to quadriceps  
Quadriceps setting isometrics  
Hip adduction, abduction, and extension  
Vertical squats  
Leg press  
Knee extension light (0-60°)  
Bicycle (Week 6-8)  
Pool program [walking, strengthening (when able)]

**Flexibility:** Continue all stretching exercises for LE

IV. **STRENGTHENING PHASE (Week 9-16)**

**Goals:** Gradual improvement of muscular strength  
Functional activities/drills

**Criteria to Progress to Phase IV:**

1. Range of motion at least 0-115°
2. Absence of swelling/inflammation
3. Voluntary control of quadriceps

**Exercises:** Mini squats (0-60°)  
Wall squats (0-60°)  
Leg press  
Forward lunges  
Lateral lunges  
Lateral step-ups  
Knee extension (60-0°)  
Hip adduction/abduction  
Bicycle  
Stairmaster

**V. RETURN TO ACTIVITY PHASE**

**Goal:** Functional return to specific drills

**Criteria to Progress to Phase V:**

1. Full nonpainful range of motion
2. Appropriate strength level (80% or greater of contralateral leg)
3. Satisfactory clinical exam

**Exercises:** Functional drills  
Strengthening exercises  
Flexibility exercises