
Distal Femoral Osteotomy Physical Therapy Protocol

Phase I: Immediate Post-operative (Weeks 0 to 6)

Goals

- Protect healing tissue
- Control pain and edema
- Obtain full knee extension
- Restore knee flexion
- Regain quadriceps control

Weight Bearing

- Toe touch weight bearing for six weeks

Range of Motion

- No immediate limitation on passive range of motion (below are minimum recommendations)
- 0 to 90 degrees at week one
- 0 to 110 degrees at week two
- 0 to 120 degrees at week three
- Progress to full range of motion at week four

Exercises

- Full passive knee extension
- Patellar mobilizations
- Range of motion exercises
- Ankle pumps
- Quad sets (neuromuscular electrical stimulation as needed)
- Four-way straight leg raises (abduction and adduction done in brace to avoid varus and valgus stresses)
- Stationary bike
- Hamstring, quad, calf and hip flexor stretching
- Core exercises
- Cryotherapy with elevation for pain and inflammation every hour for 20 minutes

Phase II: Intermediate (Weeks 6 to 12)

Criteria to Progress to Phase II

- Minimal pain and swelling
- Full knee extension and improving flexion

Goals

- Progress weight bearing per bone healing
- Restore full range of motion
- Improve quadriceps strength and endurance

Weight Bearing

- 25 percent weight bearing with two crutches at week six
- 50 percent weight bearing with two crutches at week seven
- 75 percent weight bearing with two crutches at week eight
- Progress to full weight bearing at week nine (wean from crutches as gait normalizes)

Brace

- Open brace to range of motion obtained comfortably by patient
- Sleep in locked brace for two to four weeks
- Discontinue brace when patient has obtained good quad control

Exercises

- Continue exercises as listed above
- Four-way straight leg raises (without brace, progressing weight)
- Initiate weight bearing exercises per weight bearing restrictions
- Isometric leg press
- Weight shifts
- Toe raises
- Mini squats
- Pool for gait training
- Proprioception activities
- Core progression
- Continue cryotherapy for pain management

Phase III: Advanced Activity (Weeks 13 to 20)**Criteria to Progress to Phase III**

- Full range of motion
- Minimal pain and edema
- Improved functional strength and endurance

Goals

- Improve functional activity
- Improve muscular strength, flexibility and endurance

Exercises

- Continue exercises as listed above
- Leg press
- Step ups
- Lateral step downs
- Wall squats
- Lunges
- Terminal knee extensions
- Hamstring curls
- Lateral walks with resistance
- Long arc quads (90 to 40 degrees)
- Walking program on treadmill
- Swimming
- Elliptical/NordicTrak
- StairMaster at week 16

Phase IV: Functional Activities (Months 5 to 8)**Criteria to Progress to Phase IV**

- Full, non-painful range of motion
- Strength within 80 percent of contralateral side
- Good proprioception
- No pain, inflammation or swelling

Goals

- Gradual return to unrestricted functional activities

Functional Activities

- Patient may return to various sport activities as progressing in rehabilitation and osteotomy healing allows.
- **4 to 6 Months:** Low impact sports such as golf, swimming, skating, roller-blading and cycling
- **6 to 8 Months:** Higher impact sports such as running, jogging and aerobics
- **8 to 12 Months:** High impact sports such as tennis, basketball, football and baseball

Exercises

- Continue maintenance program three to four times a week
- Progress resistance as tolerated
- Progress agility and balance drills
- Impact loading program should be specialized to the patient's demands
- Progress sport programs depending on patient variables