



## **After Total Knee Arthroplasty**

### **Rehabilitation Protocol**

#### **Phase 1: Immediate Postoperative Phase-Days 1-10**

##### ❖ Goals

- ✓ Active quadriceps muscle contraction
- ✓ Safe (isometric control), independent ambulation
- ✓ Passive Knee extension to 0 degrees
- ✓ Knee flexion to 90 degrees or greater
- ✓ Control of swelling, inflammation, and bleeding

#### **Days 1-2**

##### ❖ Weight-bearing

- ✓ Walker/two crutches WBAT
- ✓ Continuous Passive Motion

0-60 degrees and increase as tolerated if stable wound, and no contraindications. Take knee out of CPM several times a day and place pillows under the ankle (not the knee) to encourage passive knee extension

#### **Cryotherapy**

- ❖ Commercial unit used

#### **Deep Vein Thrombosis Prophylaxis**

- ❖ Per physician

#### **Exercises**

- ❖ Ankle pumps with leg elevation
- ❖ Passive knee extension stretch
- ❖ SLR if not contraindicated
- ❖ Quad sets
- ❖ Knee extension exercise 90-30 degrees
- ❖ Knee flexion exercises (gentle)

#### **Days 4-10**

- ❖ Weight bearing
  - ✓ As tolerated

#### **Continuous Passive Motion**

- ❖ Continue as tolerated

#### **Exercises**

- ❖ Ankle pumps with leg elevation
- ❖ Passive knee extension stretch
- ❖ Active-assisted ROM knee flexion
- ❖ Quad sets
- ❖ SLR
- ❖ Hip abduction-adduction
- ❖ Knee extension exercise 90-0 degrees
- ❖ Continue use of cryotherapy

### **Gait Training**

- ❖ Continue safe ambulation
- ❖ Instruct in transfers

### **Phase 2: Motion Phase-Weeks 2-6**

#### Criteria for Progression to Phase 2

- ❖ Leg control, able to perform SLRs
- ❖ Active ROM 0-90 degrees
- ❖ Minimal pain and swelling
- ❖ Independent ambulation and transfers

#### **Goals**

- ❖ Improve Rom
- ❖ Enhance muscular strength and endurance
- ❖ Dynamic joint stability
- ❖ Diminish swelling and inflammation
- ❖ Establish return to functional activities
- ❖ Improve general health

### **Weeks 2-4**

#### Weight-bearing

- ❖ WBAT with assistive device

#### Exercises

- ❖ Quad sets
- ❖ Knee extension exercise 90-0 degrees
- ❖ Terminal knee extension 45-0 degrees
- ❖ SLR (flexion-extension)
- ❖ Hip abduction-adduction
- ❖ Hamstring curls
- ❖ Squats
- ❖ Stretching
  - ✓ Hamstrings, gastrocnemius, soleus, quads
- ❖ Bicycle ROM stimulus
- ❖ Continue use of cryotherapy

## **Weeks 4-6**

### **Exercises**

- ❖ Continue all exercises listed above
- ❖ Initiate
  - ✓ Front and lateral step-ups (minimal height)
  - ✓ Front lunge
  - ✓ Pool program
  - ✓ Continue compression, ice, and elevation for swelling

## **Phase 3: Intermediate Phase-Weeks 7-12**

### **Criteria for Progression to Phase 3**

- ❖ ROM 0-110 degrees
- ❖ Voluntary quadriceps muscle control
- ❖ Independent ambulation
- ❖ Minimal pain and inflammation

### **Goals**

- ❖ Progression of ROM (0-115 degrees and greater)
- ❖ Enhancement of strength and endurance
- ❖ Eccentric-concentric control of the limb
- ❖ Cardiovascular fitness
- ❖ Functional activity performance

## **Weeks 7-10**

### **Exercises**

- ❖ Continue all exercises listed in phase 2
- ❖ Initiate progressive walking program
- ❖ Initiate endurance pool program
- ❖ Return to functional activities
- ❖ Lunges, squats, step-ups (small 2-inch step to start)
- ❖ Emphasize eccentric-concentric knee control

## **Phase 4: Advanced Activity Phase-Weeks 14-26**

### **Criteria for Progression to Phase 4**

- ❖ Full, nonpainful ROM (0-115 degrees)
- ❖ Strength of 4+/5 or 85% of contralateral limb
- ❖ Minimal or no pain and swelling
- ❖ Satisfactory clinical examination

### **Goals**

- ❖ Allow selected patients to return to advanced level of function (recreational sports)
- ❖ Maintain and improve strength and endurance of lower extremity
- ❖ Return to normal lifestyle

## Exercises

- ❖ Quad sets
- ❖ SLR (flexion-extension)
- ❖ Hip abduction-adduction
- ❖ Squats
- ❖ Lateral step-ups
- ❖ Knee extension exercise 90-0 degrees
- ❖ Bicycle for ROM stimulus and endurance
- ❖ Stretching
  - ✓ Knee extension to 0 degrees
  - ✓ Knee flexion to 105 degrees
- ❖ Initiate gradual golf, tennis, swimming, bicycle, walking program