



CEMENTLESS TOTAL KNEE REPLACEMENT

General Principles:

Total knee replacement procedures will be divided into two categories based primarily on the method of prosthesis fixation utilized. These categories will be designated as **Cemented Total Knee Replacement** and **Cementless Total Knee Replacement** protocols.

Due to extreme physical variances in the patient population undergoing a total knee replacement surgery, the following protocols are designed to provide guidelines for the clinician to progress patients during their rehabilitation. The clinician may alter patient progress to accommodate these physical variations. (i.e. age, medical problems, cardiovascular conditioning, etc.)

Cementless Total Knee Protocol

PHASE I (Immediate Post-Op) Days 1 - 7

Weight Bearing

1. Touch weight bearing with use of two crutches or a walker.

Modalities

1. Ice, electrical stimulation, compression, elevation as needed to control pain and swelling.
2. Use Polar Care® unit as directed at home for 20 minutes following exercises and as needed for pain control throughout protocol.
3. Moist heat after 48 hours for treatment of areas of hematoma or ecchymoses.

Orthotics

1. Knee brace at all times Day 1 except for exercises and CPM use. Days 2-4 use knee brace only at night. Use knee brace after Day 4 at night if having problems maintaining extension.
2. Elastic bandage and T.E.D.™ hose at all times.

Exercises

1. Quad sets
2. Heel slides and wall slides to progress ROM as tolerated.
3. CPM machine as ordered
4. Prone hangs
5. Straight leg raises
6. Ham sets
7. Ankle pumps
8. Short-arc quad exercises:
 - a. No resistance to start.
 - b. Progress with resistance with full extension.
 - c. May utilize AAROM if necessary.
9. Long-arc quad exercises:
 - a. No resistance to start.

- b. Progress with resistance with full extension.
 - c. May utilize AAROM if necessary.
10. No manual patellar mobilization exercises.

PHASE II (Immediate) Weeks 2 - 3

Weight Bearing

1. Touch with use of two crutches or a walker.

Modalities

1. Continue Phase I modalities as needed.
2. May utilize moist heat and/or pulsed ultrasound for areas of ecchymoses or hematoma.

Orthotics

1. Knee brace at night only if unable to maintain extension.
2. Elastic bandage as needed to control swelling.
3. T.E.D.TM hose at all times.

Exercises

1. Progress Phase I exercises as tolerated.
 - a. Increase repetitions, sets and resistance as tolerated.
2. May utilize AAROM as well as PROM to increase ROM.
3. Hamstring progressive resistance exercises as tolerated.
 - a. Isotonic
 - b. Full-arc
4. Closed-chain exercises
 - a. Stationary bike
5. Leg press or plyosled - low resistance, bilateral
6. Gentle patellar mobilization only if patient is losing motion. NOTIFY PHYSICIAN if patellar mobilization is being performed.
7. Aquatics as needed

Weeks 4 - 6

Weight Bearing

1. Progress to 33% at Week 4, 66% at Week 5, full at Week 6 as tolerated. Assess pain and swelling weekly and only progress if no symptoms develop.
2. May progress to use of cane.

Modalities

1. Ice post exercise. Continue other modalities only as needed.

Orthotics

1. Discontinue knee brace at night if extension is maintained.
2. Discontinue T.E.D.TM hose.
3. Discontinue elastic bandage. Use only as needed.

Exercises

1. Full-arc progressive resistive exercises:
 - a. Quadriceps
 - b. Hamstring
2. Closed chain activity
 - a. Progress resistance
 - b. Leg press or Plyosled (start unilateral when weight bearing full)

- c. Mini-squats
 - i. Bilateral
 - ii. Progress resistance as weight bearing increases
3. When weight bearing full, start proprioceptive exercises
 - a. Bilateral.
4. ROM should be near full. Continue AAROM and PROM techniques as needed.

PHASE III (Advanced) Weeks 7 - 8:

Weight Bearing

1. Should be full with normal gait.

Modalities

1. Continue only as needed.

Orthotics

1. None.

Exercises

1. Progress Phase II exercises
 - a. Quadriceps
 - b. Hamstring
2. Advance proprioceptive exercises:
 - a. Unilateral (one leg)
 - b. Eyes closed
 - c. Toe standing
3. Elliptical cross-trainer or ARC trainer, progress as tolerated
4. Consider discharging from formal rehabilitation when strength and functional goals have been met
5. Teach home exercise program and refer to fitness facility where appropriate.