
Total Knee Arthroplasty Outpatient Protocol

Referral for Rehabilitation Services

Patient Name: _____ Date of Surgery: _____
_____/ Week _____ Weeks

Phase I – Initiated in Hospital

Phase II – Motion Phase (Day 3 – Week 6)

Goals:

- Improve knee active range of motion (AROM) to ≥ 0 -110 degrees
- Muscle strengthening of the entire operative extremity with emphasis on knee extensor and flexor muscle groups.
- Attention should also be directed toward any weakness present in the operative extremity as well as any generalized weakness in the upper extremities, trunk or contralateral lower extremity.
- Proprioceptive training to improve body/spatial awareness of the operative extremity in functional activities.
- Endurance training to increase cardiovascular fitness.
- Functional training to promote independence in activities of daily living and mobility.
- Gait training: Assistive devices are discontinued when the patient demonstrates adequate lower extremity strength and balance during functional activities (usually 1-4 weeks)
- Decrease inflammation/swelling
- Return to functional activities

Weeks 1-4

- AA/A/PROM, stretching for flexion (>90 degrees) and extension
- Stationary Bicycle for ROM, begin with partial revolutions then progress as tolerated to full revolutions (no resistance).
- Patella femoral and tibial femoral joint mobilization as indicated.
- Continue isometric quadriceps, hamstring, and gluteal isometric exercises
- Supine heel slides and seated Long Arc Quad (LAQ)
- SLR in 4 planes (flexion, abduction, adduction, extension) Department of Rehabilitation Services
- Neuromuscular electrical stimulation (NMES) for quads if poor quad contraction is present.

NMES parameters to be set based on goal of exercise/activity. See neuromuscular electrical stimulation procedural standard of care for specific details.)

- Gait training to improve function and quality of involved limb performance during swing through and stance phase. Patients are encouraged to wean off their assistive device at the latest by the end of second week from surgery.
- Postural cues/ reeducation during all functional activities as indicated.

Weeks 4-6

- Continue above exercises
- Continue patella femoral and tibial femoral joint mobilization as indicated.
- Continue NMES of quads if poor muscular performance of quad is present. May progress NMES use from isometric quad activity to isotonic and functional activity
- Front and lateral step up and step down.
- 1/4 front lunge.
- Use sit to stand and chair exercises to increase knee flexion during functional tasks.
- Continue stationary bicycle for ROM

- Begin pool program if incision is completely healed

*Note: Exercises with resistance may be initiated as tolerated for operative extremity after goals for the first phase have been met, and the patient has met criteria for progression to the next phase.

Modalities:

- Cryotherapy 1-3x/day for swelling and pain management.
- Other modalities at the discretion of the therapist based on clinical findings
- WBAT with assistive device as needed to minimize compensatory gait. Patient may be encouraged to use a straight cane within one week of surgery if he/she is WBAT to FWB. Patients may be weaned from assistive device by 2 weeks if they did not use an assistive device preoperatively and post-operative muscle performance is adequate for weight acceptance.
- Monitor wound healing and consult with referring MD if signs and symptoms of infection are present.
- Monitor for increased edema and continue with cryotherapy as needed.

Criteria for progression to the next phase:

- AROM 0-110°
- Good voluntary quadriceps control Department of Rehabilitation Services
- Independent ambulation community distances (\geq 800 feet), without assistive device, deviations or analgesia
- Minimal pain and inflammation

Phase III – Intermediate phase (week 7-12):

Goals:

- Maximize post-operative ROM (0-115 degrees plus)
- Good patella femoral mobility.
- Good strength all lower extremity musculature.
- Return to most functional activities and begin light recreational activities (i.e. walking, pool program)

Therapeutic Exercises:

- Continue exercises listed in Phase II with progression including resistance and repetitions. It is recommended to assess hip/knee and trunk stability at this time and provide patients with open/closed chain activities that are appropriate for each patient's individual needs.
- Continue patella femoral and tibial femoral joint mobilization as indicated.
- Initiate endurance program, walking and/or pool.
- Initiate and progress age-appropriate balance and proprioception exercises.
- Discontinue NMES of quads when appropriate quad activity is present.

Criteria for progression to next phase:

- AROM without pain, or plateaued AROM based on preoperative ROM status.
- 4+/5 muscular performance based on MMT of all lower extremity musculature.
- Minimal to no pain or swelling.

Phase IV – Advanced strengthening and higher level function stage (week 12-16):

Goals:

- Return to appropriate recreational sports / activities as indicated
- Enhance strength, endurance and proprioception as needed for activities of daily living and recreational activities

Therapeutic Exercises:

- Continue previous exercises with progression of resistance and repetitions.
- Increased duration of endurance activities.
- Initiate return to specific recreational activity: golf, doubles tennis, progressive walking or biking program. Department of Rehabilitation Services

Criteria for Discharge:

(These are general guidelines as patients may progress differently depending on previous level of function and individual goals.)

- Non-antalgic, independent gait
- Independent step over step stair climbing
- Pain-free AROM
- At least 4+/5 muscular performance based on MMT of all lower extremity musculature.
- Normal, age appropriate balance and proprioception.
- Patient is independent with home exercise program.