This rehabilitation program is designed to return the individual to their full activities as quickly and safely as possible, following a total knee replacement. Modifications to this guideline may be necessary dependent on physician specific instruction or other procedures performed. This evidence-based total knee replacement guideline is criterion-based; time frames and visits in each phase will vary depending on many factors. The therapist may modify the program appropriately depending on the individual's goals for activity following a total knee replacement.

This guideline is intended to provide the treating clinician with a frame of reference for rehabilitation. It is not intended to substitute clinical judgment regarding the patient's post-operative care based on exam/treatment findings, individual progress, and/or the presence of concomitant procedures or post-operative complications. If the clinician should have questions regarding post-operative progression, they should contact the referring physician.

Precautions:

- WBAT
- If patient has a concomitant injury/repair, weight bearing, or treatment may vary-consult with physician.

Phase	Suggested Interventions	Goals/Milestones for Progression
Preoperative:	PT to improve ROM, therapeutic exercises to improve functional strength, modalities to control pain and inflammation, manual therapy, and to educate patient on upcoming surgery and beginning post-op exercises.	Instruct items as needed to address current deficit.
Phase I *Date of Surgery – 2 – 3 Weeks*	In Hospital: • Begin bed mobility, transfers, sitting EOB, standing EOB with FWW, and ambulation day of surgery. • Continue AAROM and AROM exercises including: • Ankle pumps, quad sets, ham sets, SAQ, SLR • Continue bed mobility and transfers/gait with FWW. • Begin ADL training including: o Reacher, sock aide, etc. • Progress mobility with FWW. • Progress to independent exercises including:	*Goals of Phase:* 1. Skin healing 2. Protection of joint replacement 3. Return to least restrictive environment for continued care *Criteria to Advance to Next Phase:* 1. Sutures are removed

	• LAQ, hamstring curls, polish the floor, bend on ball, as appropriate. • Instruct in HEP • Address stair/curb training as needed. • Assist patient in acquiring equipment including Bath chair, reacher, sock aide, toilet raiser, etc. • Safe functionally within the home Outpatient: • Control pain and inflammation, modalities PRN • Progress strengthening, muscle re-education, ROM, HEP, and independent mobility • ROM goal of (0-100) degrees • Soft tissue mobilization for scar management. • PROM/assisted stretch/grade 1-2 joint mobilization. • Stationary bike on low resistance, "rocking" if unable to perform revolutions. • Gait training to increase weight bearing tolerance, decrease need for AD and progress to cane or no AD • Stair training using reciprocal pattern • Exercises: SLR, assisted squats, toe taps	
Phase II *Weeks 3 – 6*	*Therapy:* • Regain endurance • Increase coordination and proprioception • Improve strength • ROM 0-110 • Restore normal gait, wean off assistive devices at 4 weeks. • Control pain and inflammation with modalities PRN • Use neuromuscular electrical stimulation (NMES) to quads if poor quadriceps recruitment is present • SLR without lag, add resistance towards the end of this phase	*Goals of Phase:* 1. Healing 2. Swelling reduction 3. Increase in ROM 4. Improved strength 5. Neuromuscular re-education *Criteria to Advance to Next Phase:* 1. Healing as expected.

	• Progress HEP • Progress to closed chain exercises including terminal knee extensions, mini-squats, step ups, and mini-lunges by the end of this phase • Strengthening in open and closed chain • Joint mobilization and assisted ROM • Proprioceptive exercises	
Phase III *Weeks 7 – 12*	*Therapy:* • Return to prior activity • Improve flexion ROM past 110 degrees • Gain eccentric-concentric control of limb • Independent ambulation • Progress to more independent HEP. • Direct treatment to residual restrictions in ROM, strength, or function.	*Goals of Phase:* 1. Swelling reduction 2. Increase in ROM 3. Neuromuscular re-education 4. Develop baseline of lower extremity control and strength *Criteria to Advance to Next Phase:* 1. Normal Gait pattern 2. Pain control 3. Edema managed 4. Goals achieved for ROM 5. Independent HEP.