DR. KAISEN YAO, MD

ORTHOPEDIC SPORTS MEDICINE SURGEON

Post-Operative Physical Therapy Protocol

Total Knee Replacement

Northwell Health • Department of Orthopedic Surgery & Sports Medicine • Dr. Kaisen Yao, MD

Patient Name	Date of Surgery	Prescribing Surgeon
		Dr. Kaisen Yao, MD

General Guidelines & Precautions

- Weight bearing as tolerated is typically encouraged immediately after surgery, progressing from a walker to a cane and off assistive devices as strength and confidence allow.
- Prioritize early, frequent motion — knee stiffness is most effectively prevented in the first 2–3 weeks after surgery.
- Prioritize swelling control with ice, compression, elevation, and ankle pumps.
- Contact the surgeon for fever, calf pain, excessive drainage, uncontrolled pain, or rapidly increasing swelling.

PHASE I

Immediate Post-Op & Mobilization

TIMEFRAME

WEEKS 0–2

Goals:
Control pain and swelling, achieve full passive extension, progress flexion toward 90°, restore quadriceps activation, and become independent with a walker or cane.

Interventions:
Cryotherapy, compression, elevation, ankle pumps, quad sets, straight-leg raises, heel slides, extension stretching, gait training, and stair training as appropriate.

Gait:
Weight bearing as tolerated with a walker, progressing to a cane as balance and strength allow.

Criteria to Progress:
Full active extension, flexion at least 90°, independent and safe ambulation, and improving quadriceps control.

PHASE II

Strengthening & Gait Normalization

TIMEFRAME

WEEKS 2–6

Goals:
Progress range of motion toward 110–120° of flexion, normalize gait pattern, and improve lower-extremity strength and balance.

Interventions:
Continue range-of-motion work; progress closed-chain strengthening with mini-squats, step-ups, leg press, stationary bike, and balance/proprioception drills.

Activity:
Increase community distance walking and daily activities; wean off assistive device as balance and strength allow.

Criteria to Progress:
Flexion approaching 110–120°, minimal effusion, gait without an assistive device on level surfaces, and improving single-leg control.

PHASE III

Advanced Strengthening & Function

TIMEFRAME

WEEKS 6–12

Goals:
Maximize strength, endurance, and range of motion, and restore independence with all functional and community activities.

Interventions:
Progress step-downs, split squats, single-leg strengthening, resisted walking, elliptical, stationary bike, and low-impact conditioning.

Functional Focus:
Emphasize symmetrical mechanics with stairs, uneven surfaces, and prolonged standing or walking.

Discharge Criteria:
Independent, safe ambulation on all surfaces, functional range of motion for daily activities, and strength sufficient for the patient's individual goals.

This protocol is a general guideline. Progression should be individualized by the treating physical therapist in coordination with Dr. Yao's office based on the patient's baseline function, implant type, and surgical approach.