DR. KAISEN YAO, MD

ORTHOPEDIC SPORTS MEDICINE SURGEON

Post-Operative Physical Therapy Protocol

ACL Reconstruction

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 is typically as tolerated immediately after surgery, using crutches until gait is non-antalgic and quadriceps control is adequate.
- Prioritize swelling control with ice, compression, elevation, and ankle pumps.
- Restore full knee extension early; advance flexion as tolerated.
- Contact the surgeon for fever, calf pain, excessive drainage, uncontrolled pain, or rapidly increasing swelling.

PHASE I
Immediate Post-Op

TIMEFRAME
WEEKS 0–2

Goals:
Protect the graft, control pain and effusion, achieve full passive knee extension, gradually improve flexion toward 90°, restore quadriceps activation, and normalize gait with brace and crutches as directed.

Interventions:
Cryotherapy, compression, elevation, ankle pumps, patellar mobilizations, heel slides, extension stretching (heel prop or prone hang), quad sets, straight-leg raises without lag, calf raises, and hip/core strengthening.

Precautions:
Follow surgeon guidance for brace use and weight bearing; avoid active open-chain knee extension against resistance, pivoting, twisting, and impact activity.

Gait:
Weight bearing as tolerated with crutches; begin weaning when swelling is controlled, straight-leg raise is without lag, and gait is normalized.

Criteria to Progress:
Full knee extension, flexion approaching 90°, minimal increase in swelling, straight-leg raise without lag, and safe, normalized ambulation.

PHASE II

Early Strengthening & Neuromuscular Control

TIMEFRAME

WEEKS 2–6

Goals:
Achieve full pain-free range of motion, discontinue crutches and brace when cleared, normalize gait without an assistive device, and improve lower-extremity strength, balance, and neuromuscular control.

Interventions:
Continue range-of-motion and stretching work; progress closed-chain strengthening with mini-squats, step-ups, and leg press within a protected range, plus bridges, hamstring strengthening/curls, stationary bike, and balance/proprioception drills.

Activity:
Gradually increase walking distance and daily activities; continue to avoid running, jumping, cutting, and twisting.

Criteria to Progress:
Full range of motion with minimal effusion, normalized gait, and improving single-leg control during basic functional tasks.

PHASE III

Progressive Strengthening & Dynamic Control

TIMEFRAME

WEEKS 6–12

Goals:
Restore muscular strength, endurance, and eccentric control; improve movement quality; and build dynamic balance and control for higher-level function.

Interventions:
Progress closed-chain strengthening with deeper squats as tolerated, step-downs, split squats, single-leg strengthening, core/hip training, resisted walking, elliptical, cycling, and more advanced proprioceptive drills.

Functional Focus:
Emphasize symmetrical mechanics during squatting, sit-to-stand, stair negotiation, landing preparation, and single-leg activities.

Criteria to Progress:
No reactive swelling, full range of motion, pain well controlled, adequate strength relative to the uninvolved side, and good control with single-leg and low-level dynamic tasks.

PHASE IV

Return to Running & Plyometric Progression

TIMEFRAME

3–6 MONTHS

Goals:
Safely initiate running, improve strength symmetry, develop landing mechanics, and build tolerance for higher-level functional activity.

Interventions:
Begin a criterion-based walk-jog progression, continue progressive strengthening, introduce double-leg then single-leg plyometric drills as tolerated, and advance balance, deceleration, and movement-quality training.

Activity:
Running and light agility drills may begin only when swelling is controlled, range of motion is full, and strength and control are adequate.

Criteria to Progress:
No reactive swelling, good landing mechanics, improved single-leg control, and adequate strength for more advanced agility and sport preparation.

PHASE V

Agility, Cutting & Return to Sport

TIMEFRAME

6–9+ MONTHS

Goals:
Restore high-level strength, power, confidence, and movement symmetry for return to unrestricted work, recreation, and sport.

Interventions:
Progress to advanced plyometrics, cutting, pivoting, acceleration/deceleration drills, reactive agility work, and sport-specific retraining while maintaining lower-extremity strength and conditioning.

Return to Sport/Work:
Return to unrestricted activity should follow surgeon and therapist clearance and is ideally based on functional testing, strength symmetry, and quality of movement rather than time from surgery alone.

Discharge Criteria:
Full range of motion, no significant effusion, strong and symmetrical lower-extremity performance on functional testing, and safe mechanics during advanced dynamic tasks.

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 clinical presentation, graft type, and any concomitant procedures.