

Partial (Unicompartmental) Knee Replacement

Physical Therapy Protocol · Medial/Lateral UKA, Including Robotic-Assisted (Mako)

Based on the Ohio State University Wexner Medical Center Unicompartmental Knee Arthroplasty clinical practice guideline (2023) and the OrthoIndy total/unicompartmental knee arthroplasty protocol, within the APTA TKA clinical practice guideline framework. Cruciate ligaments and unresurfaced compartments are preserved, so ROM and functional progression run faster than TKA.



AT A GLANCE

TIMELINE	12 weeks of structured rehab for most patients; PT begins day of surgery, often same-day discharge (including robotic-assisted Mako UKA)
WEIGHT BEARING	WBAT with walker or crutches immediately; wean device by ~3 weeks once full extension and normal gait are restored
KEY MILESTONES	ROM 0-70° by days 5-7, 0-100° by week 3, 0-120° by week 6; reciprocal stairs and sit-to-stand independence by week 6
RETURN TO ACTIVITY	Non-impact recreation (cycling, golf, swimming, elliptical) from ~6 weeks as criteria are met; return guided by 1+ mile pain-free walking and dynamic multi-plane control

KEY PRECAUTIONS

- Monitor for DVT throughout early rehab; calf swelling >3 cm, pitting edema, or disproportionate calf pain warrants urgent medical referral.
- No lunges for the first 8 weeks; post-activity soreness should resolve within 24 hours or loading is reduced.
- Failure to progress ROM (flexion stalling well below 100° by weeks 3-6) or a developing extension lag should prompt communication with the surgeon.
- High-impact repetitive loading is generally discouraged long-term; direct patients toward low-impact fitness.

PHASED REHABILITATION

PHASE 1 – EARLY MOTION & ACTIVATION		Weeks 0-3
GOALS	• Full active extension and flexion to 100° by week 3 (0-70° by days 5-7) • Independent SLR without extension lag • Control effusion and protect wound healing; safe household ambulation	
INTERVENTIONS	• Ambulation day of surgery, WBAT with walker/crutches; transition to outpatient PT at 5-7 days • ROM program: heel slides, heel props and bag hangs for extension, patellar mobilizations • Quad sets, 4-way SLR, ankle pumps, seated knee flexion stretching • NMES to quadriceps at weeks 2-3 for activation deficits • Effusion management: cryotherapy, compression, elevation • Gait training emphasizing symmetrical step length and full knee extension at initial contact	
CRITERIA TO ADVANCE	• ROM 0-100° • SLR without lag • Independent ambulation, weaning assistive device • Controlled effusion with healing incision	

PHASE 2 – STRENGTH & FUNCTIONAL RESTORATION		Weeks 3-6
GOALS	• Symmetrical extension and flexion to $\geq 120^\circ$ • Discontinue assistive device with normalized gait • Reciprocal stair negotiation and independent sit-to-stand by week 6	
INTERVENTIONS	• Progressive ROM strategies: bike with progressive seat lowering, overpressure stretching as needed • Strengthening: mini-squats to 45°, step-ups and step-downs, terminal knee extension, hamstring curls • Single-leg balance work progressing in duration (target 15+ seconds) • Gait training to full device-free community ambulation • Elliptical and swimming once incision fully healed • Outcome measures at 6 weeks: TUG plus KOOS, IKDC, LEFS, or FJS-12	
CRITERIA TO ADVANCE	• ROM 0° to $\geq 120^\circ$, symmetrical extension • Normal gait without assistive device or extensor lag • 45° squat with good control; single-leg balance ≥ 15 seconds • Reciprocal stairs; many patients resume desk work in this window	

PHASE 3 – ADVANCED STRENGTHENING & RETURN TO RECREATION		Weeks 6-12+
GOALS	• Full symmetrical pain-free ROM and functional strength for prior activity level • Return to non-impact recreation and fitness	
INTERVENTIONS	• Progressive resistance: leg press, hamstring curls, squats to functional depth, step-down progression (no lunges until 8+ weeks) • Balance perturbation training and multi-plane dynamic control drills • Low-impact conditioning: cycling, elliptical, swimming, walking program building to 1+ mile pain-free • Sport-specific conditioning for golf, doubles tennis, hiking, skiing per patient goals and surgeon guidance • Taper PT frequency to every 1-2 weeks with a progressive home program • Discharge outcome measures: KOOS/IKDC/LEFS or FJS-12 plus TUG	
CRITERIA TO ADVANCE	• Full, symmetrical, pain-free ROM • Normal gait for ≥ 1 mile without pain or reactive effusion • Dynamic multi-plane control with sound single-leg mechanics • Independent home program; return to low-impact recreation	

GUIDING PRINCIPLES

This protocol follows criterion-based progression over rigid time-based advancement; phased rehabilitation balancing tissue healing with controlled stress application; objective milestones (ROM, strength LSI, functional testing) to guide phase transitions; individualization based on surgical findings, tissue quality, and patient factors; and ongoing surgeon–therapist communication throughout recovery.

REFERENCES

1. Ohio State University Wexner Medical Center Sports Medicine. Unicompartamental Knee Arthroplasty (UKA) Clinical Practice Guideline. 2023. https://medicine.osu.edu/-/media/files/medicine/departments/sports-medicine/medical-professionals/knee-ankle-and-foot/unicompartamental-knee-arthroplasty_2023.pdf
2. OrthoIndy. Total/Unicompartamental Knee Arthroplasty Physical Therapy Protocol. <https://www.orthoindy.com/wp-content/uploads/Total-Unicompartamental-Knee-Arthroplasty.pdf>
3. Jette DU, Hunter SJ, Burkett L, et al. Physical Therapist Management of Total Knee Arthroplasty (APTA Clinical Practice Guideline). Phys Ther. 2020;100(9):1603-1631.

For clinical use by licensed physical therapists treating patients of Robert Pettit, MD. This document is a rehabilitation guideline, not a substitute for clinical judgment. Progression must be individualized based on intraoperative findings, tissue quality, and patient response. Scan the QR code for the current version of this protocol.