TOTAL KNEE ARTHROPLASTY

Physical Therapy Protocol • Weeks 0–6

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Read this first — this protocol is deliberately slower in the first two weeks.

Swelling, not stiffness, is the rate-limiting step after a total knee. Aggressive early ROM and loading amplify effusion, and effusion costs motion that is far harder to recover than strength. This low-irritability approach is adapted from Wickline's work and supported by recent HSS data: lower opioid exposure, shorter stay, equivalent 1- and 2-year outcomes.

Four rules: (1) Motion before strength — no isotonic or closed-chain strengthening until 6 weeks. (2) Edema control is the treatment, not an adjunct. (3) Step counts are ceilings, not goals. (4) Frequent short bouts beat long sessions.

START OF OUTPATIENT PT	FREQUENCY	WEIGHT BEARING	APPROACH
Post-op day 5–10. Not sooner. If that lands on a weekend, start Monday.	3× per week for ~4 weeks. The home program runs every waking hour.	WBAT. Assistive device minimum 1 week; most use a walker 2–4 weeks.	Subvastus, Mako robotic-assisted. Inverse kinematic alignment, functional gap balancing.

Phase-by-phase protocol

PHASE	PRIMARY GOALS	THERAPY FOCUS	CEILINGS & AIDS
Week 1 *Heal*	● Control effusion ● Full passive extension ● Flexion ≥ 90° ● Safe transfers, gait with walker	● Ice + elevation 40 min of every waking hour, toes above nose ● Compression sleeve foot to thigh, day and night ● ROM 5–8 min/hr: 10 heel slides, 10 AAROM extensions, 10 ankle pumps ● Heel hangs 5 min × 3/day, calf and popliteal fossa unsupported ● Isometric quad sets in extension only — no isotonic, no closed chain, minimize stairs	● 750 steps/day max ● Walker; 5–10 steps per hour ● No resistance ● No aggressive stretching or forced flexion
Week 2 *Protect the gains*	● Flexion ≥ 110° by POD 14 ● Extension equal to passive ● Symmetric gait with walker	● Continue the hourly routine and 40 min/hr ice and elevation ● Heel hangs 3×/day — where most patients gain terminal extension ● Gentle AAROM, quad sets, SLR, ankle pumps; gait training on level surfaces ● Still no resistance and no machines	● 1,200 steps/day max ● Walker ● 2-week office visit: wound check, staple removal, ROM check
Weeks 3–4 *Build*	● Flexion 120° by day 21 ● Maintain full extension ● Progress off walker to cane	● ROM sessions 5–8 min, 6×/day — fewer, more focused bouts ● Light resistance permitted — up to 3 lb, not more ● Progressive gait, balance, proprioception; begin stairs ● Ice and elevate 40 min ≥3×/day; compression continues through week 4–6	● Wk 3: 2,000 steps/day ● Wk 4: 2,750 steps/day ● Resistance capped at 3 lb
Weeks 5–6 *Graduate*	● Sustained 110–120°, full extension ● Aid-free ambulation without limp ● Independent home program	● Advance gait: uneven surfaces, community distances, reciprocal stairs ● Quad and hip strengthening progresses as effusion allows ● At 6 weeks, closed-chain and isotonic strengthening may begin ● Transition to an independent home or gym program	● Wk 5: 3,500 steps/day ● Wk 6: 4,500 steps/day ● Then +1,000/week as pain and swelling allow ● Cane in contralateral hand before going aid-free

Range-of-motion milestones. Flexion targets are minimums, reached without forced end-range stretching. Terminal extension is never traded for flexion.

POST-OP DAY 2	DAY 14	DAY 21	WEEK 4	WEEKS 6–8
90° flexion	**110° flexion**	**120° flexion**	**Match best intra-op ROM**	**110–120° + full extension**

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High-yield do and do not

What I want from therapy

- Treat the effusion first. Measure and track it. Every session should include an edema-control component.
- Prioritize terminal extension. Extension loss is the outcome I care most about and the hardest to recover.
- Short, frequent, low-load. Multiple brief bouts beat one long aggressive session.
- Reinforce the home program every visit — the hourly routine does more work than the clinic hour does.
- Progressive gait quality over gait distance. No limp is the goal, not more steps.
- Adjuncts are welcome when a patient stalls: manual lymphatic drainage, sequential compression, NMES.

What I do not want in the first 6 weeks

- No aggressive passive stretching, forced flexion, or end-range overpressure.
- No isotonic or closed-kinetic-chain strengthening until 6 weeks — leg press, squats, lunges, wall slides.
- No resistance in weeks 1–2; nothing over 3 lb in weeks 3–4.
- No CPM. No treadmill or elliptical in the first 6 weeks.
- No pushing through a swollen knee. If the knee is warmer, larger, or more painful than the prior session, back off the load and add edema control.
- Do not chase step counts. They are ceilings.

Milestone triggers — when to call me

CHECKPOINT	IF THE PATIENT IS NOT MEETING THIS	DO THIS
Post-op day 7	Flexion under 90°, or effusion still increasing after 48 hours of consistent ice, elevation, and compression	Add manual lymphatic drainage, sequential compression, or NMES. Notify my office.
Post-op day 14	Flexion under 105°, extension lag, or effusion not clearly trending down	Call my office the same week. Do not simply push harder — we will look at it together.
Week 3–4	Flexion plateaued below 110°, or motion moving backward week over week	Call my office. Early conversation gives us options; at 8–10 weeks it usually does not.
Any time	Progress reverses — more swelling, less motion, more pain than the prior week	Reduce load, restore edema control, and contact my office.

Stop therapy and contact my office the same day

Calf that is hard, tense, or asymmetrically swollen with pain • Fever above 101.5°F or shaking chills • Incisional drainage that soaks a dressing, or any wound dehiscence • Erythema spreading from the incision • Sudden shortness of breath or pleuritic chest pain (call 911) • New inability to perform a straight-leg raise • Pain out of proportion to the session that is unrelieved by ice, elevation, and medication

Logistics

Driving and return to work

- Driving: decided jointly by the therapist and my office. Two conditions must both be met — completely off narcotics, and enough strength and reaction time for an emergency stop. Typically 2–6 weeks; left knees sooner than right.
- Return to work: I strongly prefer patients wait until 6 weeks. Earlier returns routinely cost range of motion. Standing, stairs, and lifting jobs: plan 8–12 weeks. Heavy labor is case by case.

Communication with my office

- Send progress notes with objective ROM (active and passive flexion, extension lag in degrees), effusion measurement, and gait status.
- Notes are due before the 2-week and 6-week office visits.
- Call 574-247-9441 with any milestone concern — I would rather hear from you early than at week 10.
- Patient-facing materials, including the Week-by-Week Recovery Guide, are downloadable at DrAdamCien.com/recovery.

Where this protocol comes from. Wickline A. Less Swelling, Less Pain. • Wickline A, Stevenson J. Mitigating the Post-operative Swelling Tsunami in Total Knee Arthroplasty: A Call to Action. Journal of Orthopaedic Experience & Innovation. • Afzal S, et al. Quiet Knee Rehabilitation Protocol After Primary Total Knee Arthroplasty Is Associated With Lower Opioid Exposure and No Added Risks. Journal of Arthroplasty, 2026 (Proceedings of the Knee Society 2025).