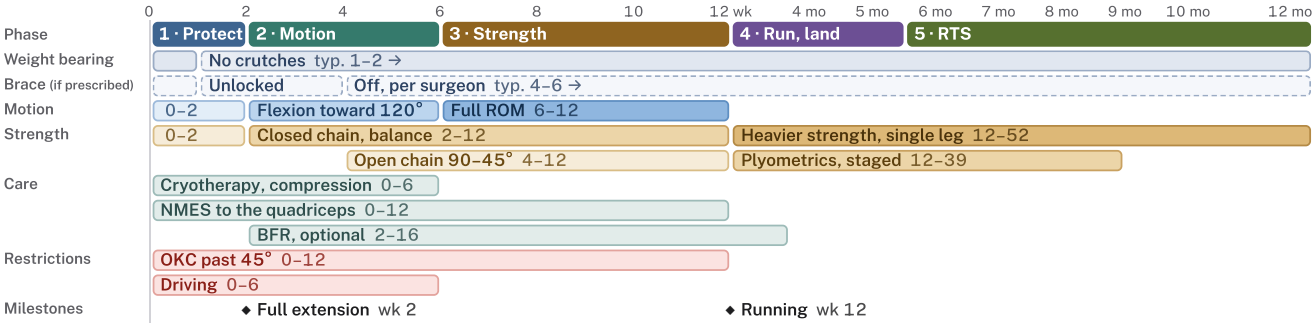
ACL Reconstruction Protocol

Patellar tendon autograft · Version 2026.10 · Reviewed Oct 2026 · HEP Drop staff · Reviewed by a licensed physical therapist

⚠ General reference for licensed clinicians, not individual patient instructions. The operating surgeon's protocol takes precedence.

At a glance: WBAT with crutches from day 0 · brace only if prescribed · full extension by wk 2 · open chain 90–45° from wk 4, full range from wk 12 · running from wk 12 once the criteria are met · pivoting sport from 9 mo. Criteria-based, test-gated.



PHASE	✓ GOALS AND ALLOWED	✕ AVOID	□ ADVANCE WHEN
Phase 1 Protect and extend wk 0–2 if criteria met	**Full passive extension, equal to the other knee**[7, 6] · **Quadriceps activation: a straight leg raise without lag**[7] · **Effusion and pain control**[1] · **Weight bearing as tolerated with crutches, unless the surgeon restricts it**[1] **Weight bearing:** WBAT with crutches, unless the surgeon restricts weight bearing **Brace, if prescribed:** locked straight for walking and sleep • Knee motion and weight bearing from the first week[1] • Quad sets with NMES, started in week 1[12, 1] • Self patellar mobilization in the home program[7] • Patellar tendon graft: patellar mobilization emphasized, and watch for patellar tendon pain during quadriceps loading[15, 7] • Heel props or prone hangs if extension is not full[5, 7]	AVOID — UNTIL Open-chain knee extension past 45° (none before wk 4) — **wk 12** Driving, until emergency braking is safe — **wk 6** Pool work until the wound has fully healed (about wk 3–4)[1]	☐ Full passive knee extension, equal to the other knee[7, 6] ☐ Straight leg raise without extension lag[7, 6] ☐ Effusion 1+ or less on the modified stroke test[7]
Phase 2 Motion and gait wk 2–6 if criteria met	**Full extension and flexion toward 120°**[5] · **Normal gait without crutches**[5] · **Effusion trace or less**[7] **Weight bearing:** full weight bearing, no crutches (typically, once criteria are met) **Brace, if prescribed:** unlocked for walking (typically, once criteria are met) • Open-chain knee extension in 90–45° from wk 4[1] • Stationary bike for motion[7, 5] • Open and closed chain strength together, and balance[1] • Blood flow restriction training, optional[1, 13]	**Still in effect:** Open chain past 45° (wk 12) · Driving (wk 6) · Pool work until the wound has fully healed (about wk 3–4)	☐ Full extension and at least 120° flexion[5] ☐ Normal gait without crutches[5, 7] ☐ Effusion trace or less on the modified stroke test[7]
Phase 3 Strength wk 6–12 if criteria met	**Quadriceps strength ≥ 80% of the other leg by the running gate**[1, 7] · **Full, symmetric ROM**[7] **Brace, if prescribed:** brace off, when the surgeon discontinues it (typically, once criteria are met) • Progressive strength: lighter loads and many repetitions first, then heavier loads[6, 15] • Eccentric with concentric work; open and closed chain together[1] • Single-leg balance and control[7, 1]	NEW IN THIS PHASE — UNTIL Pivoting and cutting sport until the return-to-sport criteria are met (not before 9 months)[6, 18] **Still in effect:** Open chain past 45° (wk 12)	☐ At least 12 weeks since surgery[1] ☐ Quadriceps strength ≥ 80% of the other leg[1, 7] ☐ Effusion trace or less on the modified stroke test[7, 1] ☐ Full knee ROM, equal to the other knee[1, 7]
Phase 4 Running and landing wk 12–24 if criteria met	**Walk-jog running progression**[7] · **Staged plyometrics, from two legs to one and from linear to multi-planar**[17] · **Quadriceps and hop symmetry ≥ 90%**[7, 18] • Running: no more than 4 times a week, every other day at most; move up a level when a run causes no extra effusion or pain[7] • Plyometrics in 4 stages, building from 50 to 200 foot contacts a session[17] • Heavier single-leg strength[15]	**Still in effect:** Pivoting and cutting sport until the return-to-sport criteria are met (not before 9 months)	☐ Quadriceps strength ≥ 90% of the other leg[7, 18] ☐ All four hop tests ≥ 90% of the other leg (single, triple, crossover and 6 m timed hop)[7, 18]
Phase 5 Return to sport wk 24–52 if criteria met	**Agility, cutting and sport-specific drills**[1, 17] · **Return-to-sport criteria, not before 9 months**[18, 6] · **An injury prevention program at least twice a week, kept up after return**[6] • Cutting drills, shallow cuts before sharp ones[17] • Full team training for at least 4–6 weeks before competition[5]	**Still in effect:** Pivoting and cutting sport until the return-to-sport criteria are met (not before 9 months)	**Discharge from PT when** The return to pivoting sport criteria: page 2

ACL Reconstruction Protocol · exercises and sources

Patellar tendon autograft · Version 2026.10 · Reviewed Oct 2026 · HEP Drop staff · Reviewed by a licensed physical therapist

⚠ General reference for licensed clinicians, not individual patient instructions. The operating surgeon's protocol takes precedence.

Exercises by phase

* sets and reps are our default.

Phase 1 · Protect and extend wk 0–2

Quad Set 2–3 × 10–15*
Active Straight Leg Raise with Quad Set 2–3 × 10–15*
Ankle Pumps 2–3 × 10–15*
Seated Knee Extension Stretch (Heel Prop) 10 min with no weight, then add weight and time
Prone Knee Extension Overpressure (Prone Hang) 10 min with no weight, then add ankle weight and time
Supine Heel Slide 2–3 × 10–15*
Wall Slide (Hook-Lying) 2–3 × 10–15*
Standing Calf Raise 2–3 × 10–15*

Phase 2 · Motion and gait wk 2–6

Seated Long Arc Quad 90–45° only, 3 × 12–20 RM · from wk 4
Standing Mini Squat 2–3 × 10–15*
Wall Squat (Wall Sit) 2–3 × 10–15*
Standing Terminal Knee Extension with Resistance 2–3 × 10–15*
Bridge (Bilateral) 2–3 × 10–15*
Hip Abduction (Side-Lying) 2–3 × 10–15*
Single Leg Balance 3 × 30 s*
Stationary Bike for motion, as tolerated*
Seated Knee Flexion Stretch short bouts through the day, toward 120°*

Phase 3 · Strength wk 6–12

Leg Press 3 × 12–20 RM
Step Up 3 × 12–20 RM
Lateral Step Down 3 × 12–20 RM
Forward Lunge 3 × 12–20 RM
Split Squat 3 × 12–20 RM
Single Leg Bridge 3 × 12–20 RM
Banded Side Step 2 × 10 steps each way*
Single Leg Balance with Ball Toss 3 × 30 s*

Phase 4 · Running and landing wk 12–24

Single Leg Romanian Deadlift 3 × 5–15 RM
Single Leg Heel Raise 3 × 5–15 RM
Side Plank 3 × 30 s*
Split Squat 3 × 5–15 RM
Lateral Step Down 3 × 5–15 RM

Phase 5 · Return to sport wk 24–52

Single Leg Romanian Deadlift 60–80% 1RM or 1–5 RM
Single Leg Heel Raise 60–80% 1RM or 1–5 RM
Single Leg Balance with Ball Toss 3 × 30 s*

Return to pivoting sport when

- ☐ At least 9 months since surgery[18, 6]
- ☐ All four hop tests ≥ 90% of the other leg (single, triple, crossover and 6 m timed hop)[7, 18]
- ☐ At least 4–6 weeks of full team training before competition[5]
- ☐ Quadriceps strength ≥ 90% of the other leg[7, 18]
- ☐ ACL-RSI ≥ 65[21]
- ☐ Shared clearance with the surgeon and the team[3]

Tests and pass marks

Test	Phase 1 exit	Phase 2 exit	Phase 3 exit · return to running	Phase 4 exit	Discharge · return to pivoting sport
Stroke test[7]	**effusion 1+ or less**	**effusion trace or less**	**effusion trace or less**		
Knee ROM[5, 7]	**full passive extension**	**full extension, flexion ≥120°**	**full knee ROM**		
SLR, no lag[5, 7]	**SLR without lag**				
Quad strength[1, 7, 18]			**≥ 80%**	**≥ 90%**	**≥ 90%**
Single hop, Triple hop, Crossover hop, 6 m timed hop[7, 18]				**≥ 90%**	**≥ 90%**
ACL-RSI[21, 23]					**≥ 65 points**

Written for adults. For athletes aged 10 to 18, an international consensus is stricter: more than 95% symmetry, and rehab to 12 months for younger athletes[5].

Key milestones vs published protocols

MILESTONE	THIS PROTOCOL	RANGE IN PUBLISHED PROTOCOLS
Brace off	**wk 4**	wk 4–6[26, 27, 28], two of three at about wk 6
Open chain 90–45°	**wk 4**	early post-op to wk 8[26, 27, 28], two of three at wk 6
Open chain, full range	**wk 12**	wk 12 to 4 mo[26, 28], two give a week: wk 12 and 4 mo
Running	**wk 12**	3 to 5 mo[26, 27, 28], all three include 4 mo
Pivoting sport	**from 9 mo**	9–12 mo[27, 28], two of three at 9–12 mo; one gives no month

Published protocols agree on early motion and weight bearing and on criteria-based progress, and differ most on the brace, when open-chain knee extension starts, when running starts and the return-to-sport cut-offs. A side-by-side comparison with published hospital protocols is at **hepdrop.com/p/acl**.

Sources

1. Kotsifaki 2023
3. Meredith 2020
5. van Melick 2023
6. Filbay 2019
7. Adams 2012
12. Li 2025
13. Colombo 2024
15. Briem 2026
17. Buckthorpe 2021
18. Grindem 2016
21. Webster 2020
23. Sell 2024
26. Sanford Health
27. Mass General Brigham
28. Gundersen Health System

Full citations, licenses and what each source supports: **hepdrop.com/p/acl**.