

CartiHeal Agili-C Implant

Physical therapy protocol for condyle and trochlear lesions

Patient: _____ Surgery / procedure date: _____

This is the full Pacific Bone & Joint postoperative protocol. Patient-specific operative and discharge orders take precedence over this default pathway.

Selected by surgeon _____ PT start _____ Next review _____

Protection and early recovery

Use after CARTIHEAL AGILI-C implantation in a femoral condyle or the trochlea. Record lesion location, size, implant number, and accompanying procedures. Select the appropriate loading pathway below. The signed order governs; an osteotomy, meniscus repair, or ligament procedure may require slower progression.

Implant location: Weight bearing in weeks 0-6 - Brace and movement

Femoral condyle: No weight bearing for the first 3 weeks. After clearance, gradually increase partial loading toward full weight bearing by about week 6. - A brace is not routine for an isolated condyle implant with good quadriceps control; use one if prescribed.

Trochlea: Weight bearing as tolerated using crutches with the knee straight. Do not load a bent knee until cleared around week 6. - Brace locked at 0 deg for walking. Unlock for protected non-weight-bearing motion and hygiene.

Condyle plus trochlea: Use condylar loading limits and the slower restrictions of any accompanying procedure. - Use locked-extension walking protection for the trochlear component. Large or multiple lesions may require longer protection.

Motion and protection

- Restore neutral extension early. Begin gentle assisted flexion without forcing. Unless a smaller arc is ordered, aim for about 90 deg by 2 weeks, 120 deg by weeks 4-6, and near-full motion by weeks 6-8.
- Motion targets are guides, not a reason to push through pain. The surgeon should specify any protected arc based on defect position.
- Avoid loaded knee bends, twisting, impact, and heavy resistance across the graft contact range during early recovery. Do not equate less pain with complete integration.
- CPM is optional when prescribed. Use the ordered settings; no routine machine schedule is required by this clinic pathway.

This is a conservative clinic adaptation of Agili-C study and compartment-specific rehabilitation guidance, not an IFU-mandated timetable. The trochlear pathway does not cover the patella: current U.S. labeling excludes patellar cartilage and osteochondral defects. Other implant sites require an individualized order.

Exercise progression

Weeks 0-6

- Start PT in the first postoperative week unless otherwise ordered. Review operative location and the exact loading and brace instructions before treatment.
- Use ankle pumps, quadriceps isometrics, gentle assisted motion, and hip or trunk exercises that respect the loading limits. Add neuromuscular electrical stimulation for poor quadriceps activation.
- Perform straight-leg raises only without extension lag, with brace support if prescribed. Avoid resisted knee extension across a painful or surgeon-restricted graft contact arc.
- A stationary bicycle without resistance may provide motion when flexion and safe transfers permit; never force pedal rotation. Protect the wound and use elevation and cold therapy for swelling.

Weeks 7-12

- After surgical review, normalize gait and restore full comfortable motion. Stop crutches or brace only when loading is cleared, quadriceps control is adequate, and walking is stable.
- Introduce low-load closed-chain strengthening in the approved arc, beginning with shallow knee bends, light leg press, calf raises, balance, and low step-ups.
- Progress bike resistance gradually. Pool therapy requires all incisions to be closed and explicit clearance. Do not increase walking volume and exercise resistance simultaneously.

Months 3-6

- Build quadriceps, hamstring, hip, and calf strength. Progress bilateral to unilateral tasks, controlled step-downs, and endurance without reactive swelling.
- Use cycling and later elliptical or other low-impact conditioning as tolerated. Rowing requires comfortable flexion and a surgeon-approved loading arc.
- Low-impact recreational activities may return according to function. Continue to avoid running, jumping, cutting, and pivoting under this conservative pathway.

Months 6-9

Advance resistance, balance, and functional control. Low-amplitude landing work requires explicit surgeon clearance and adequate strength; the date alone does not authorize jumping. Continue low-impact conditioning until the running assessment. If exercise produces increased pain, swelling, stiffness, or limp the next day, reduce the workload. Persistent effusion, focal pain, catching, or loss of extension requires surgical review.

Running and return to sport

Running assessment at 9-12 months

- Obtain surgeon clearance. Require full comfortable motion, no focal pain or meaningful effusion, normal gait and stair control, and satisfactory single-leg mechanics.

- Document quadriceps strength at least 80% of the comparison limb, while considering absolute strength and endurance. Imaging is obtained if the surgeon requires it; it does not replace functional assessment.
- Begin level walk-jog intervals on alternate days. Progress duration before speed. Add agility only after running and landing tasks are tolerated without a next-day symptom increase.

Competitive sport after 12 months

- Require surgeon clearance, full motion, no reactive effusion or focal pain, and completion of a progressive practice program.
- Aim for at least 90% quadriceps and hamstring strength symmetry. When relevant, require at least 90% on appropriate hop tests with controlled landing and direction changes.
- Assess movement quality, confidence, endurance, and sport demands. A quiet knee and a calendar date do not establish complete cartilage maturation.
- For patients whose goals are daily function or low-impact recreation, discharge testing should reflect those goals; unrestricted running or pivot sport may be inappropriate.

When to seek help

Contact the surgical team for new locking, repeated swelling, loss of motion, increasing calf pain or swelling, wound redness or drainage, fever, uncontrolled pain, or persistent numbness. Call 911 for chest pain, trouble breathing, or a suddenly cold or pale foot.

Sources: CartiHeal, CLN0021-US Rev 8, March 29, 2022, Appendix 6, pp 79-80.

https://cdn.clinicaltrials.gov/large-docs/59/NCT03299959/Prot_000.pdf ; Saltzman, CARTIHEAL trochlea and femoral condyle PT protocol, undated.

<https://www.drbyansaltzman.com/pdfs/physical-therapy/saltzman-pt-protocol-cartiheal.pdf> ; Smith+Nephew, U.S. product and safety information.

<https://www.smith-nephew.com/en-us/health-care-professionals/products/sports-medicine/cartiheal-agili-c>

The 9-12-month jogging window and return after 12 months follow the conservative sponsor-study pathway. Faster published surgeon pathways require a separate individualized order.