

Primary ACL Repair

Physical therapy protocol

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 for a surgeon-confirmed stable proximal native ACL suture repair, with or without internal brace augmentation. This pathway does not apply to BEAR implantation, ACL reconstruction, tibial spine fixation, or an associated procedure with greater restrictions. The surgeon must confirm that the repair can follow the loading schedule below.

Internal brace: Yes No. Repair fixation and special restrictions:

_____.

This is a conservative clinic pathway assembled from primary repair guidance. Repair quality and fixation determine whether more protection is needed. An internal brace does not automatically authorize faster rehabilitation. Use the most restrictive instructions when meniscus, cartilage, or another ligament was also treated.

Time: Weight bearing and brace - Motion

Weeks 0 to 2: Weight bearing as tolerated with crutches only after approval of this stable repair pathway. Brace locked straight for walking and sleep. - Gentle motion 0-90 deg; prioritize comfortable full extension.

Weeks 2 to 6: Wean crutches when gait is normal and straight leg raise has no lag. Unlock and wean brace around weeks 4-6 only with good control and clearance. - Progress toward 125 deg and then full flexion without force. Maintain full extension.

Weeks 6 to 12: Normal gait is the goal. Continue any brace prescribed for protection. - Full comfortable motion; no aggressive stretching into painful end range.

Begin the home program and therapy

Start PT during the first postoperative week. Teach swelling management, ankle pumps, quadriceps sets, supported extension, gentle assisted flexion, patellar mobility, and hip and core exercises. Use NMES when quadriceps activation is poor. Perform straight leg raises only with the knee controlled and without lag; use the brace when needed.

Protect the repair

- Do not pivot on the operated foot, run, jump, or perform forceful loaded knee extension in the early phase.
- Use crutches while a nerve block, weakness, or altered sensation makes walking unsafe. Check skin and brace fit regularly.

- If full extension is not recovering, motion worsens, or swelling repeatedly returns, contact the surgical team. Do not solve a stalled recovery by forcing the knee.

Follow the individualized wound, medication, and clot prevention instructions. Time and measured recovery both determine advancement; the calendar alone is insufficient.

Strength and movement progression

Weeks two to six

Restore normal walking and comfortable extension while increasing flexion gradually. Continue quadriceps activation and no lag straight leg raises. Introduce a stationary bicycle when the knee bends enough for a comfortable revolution; begin with minimal resistance.

- Add shallow closed chain strength within about 0-60 deg of flexion, light leg press, controlled step ups, calf raises, hip and core work, and balance with adequate support.
- Gentle unloaded knee extension may be used under PT guidance. Avoid heavy resistance near terminal extension during the early healing period.
- Advance brace and crutch use according to gait, quadriceps control, symptoms, and the surgical order. Do not remove support while buckling or limping persists.

Weeks six to twelve

Aim for full motion, normal gait, little or no effusion, and good single leg alignment. Progress squats, controlled lunges, step downs, calf and hip resistance, and hamstring strengthening as tolerated. No hamstring graft has been harvested in an isolated native ACL repair, but associated meniscal restrictions still govern.

When cleared, use light resisted open chain knee extension initially within a protected 90-40 deg arc. Expand resistance and motion gradually after week 12 according to stability, pain, and quadriceps control. Continue bicycle or elliptical conditioning. Avoid impact and pivoting.

Weeks twelve to sixteen

Develop single leg strength and endurance. Assess step down quality, trunk and hip control, and balance. Increase resistance without increasing joint swelling. Prepare for running through brisk walking and controlled loading; running still requires the criteria on the next page.

Weeks sixteen to twenty four

After surgeon clearance and successful testing, start a gradual straight line walk and jog program on alternate days. Add low level landing drills when strength and control support equal loading. Progress from double leg landing to single leg tasks with stable alignment. Avoid unplanned direction changes and contact sport.

Months six to nine

Following strength and hop assessment, progress planned agility, deceleration, and direction changes. Increase speed before adding unpredictable reactions and contact. Continue strength work throughout sport preparation. Return to full sport is usually considered at nine months or later after all clearance criteria are met.

Use a 24 hour response check after increasing exercise. New effusion, limping, loss of motion, or joint pain the next day means the prior load exceeded current tolerance. Reduce the dose and reassess before advancing.

Running and return to sport criteria

Before straight line running

This clinic pathway considers running from approximately week 16, with surgeon approval. Timing may be extended for repair quality or another procedure. Require all of the following:

- Full comfortable motion and no more than trace effusion; no giving way or joint pain with daily activity.
- Normal brisk walking without a limp and a controlled single leg squat and 8 inch step down without knee collapse.
- Quadriceps strength at least 80% of the other leg on dynamometry, with adequate calf, hip, and hamstring capacity.
- Ability to complete the current strengthening program without increased swelling or symptoms the next day.

Start with short walk and jog intervals on a level protected surface, initially every other day. Build duration before speed. Stop for joint pain, swelling, instability, or altered gait. Permission for running does not include cutting or unrestricted sport.

Before cutting and sport drills

Typically during months 6-9, require no reactive effusion, successful running and landing progression, quadriceps and functional hop symmetry at least 90%, controlled deceleration, and surgeon approval. Begin planned low speed direction changes before reactive drills, high speed tasks, and contact.

Full sport at nine months or later

- Operating surgeon clearance, stable clinical examination, full motion, and no pain, effusion, or instability.
- Quadriceps and hamstring strength at least 90% of the other leg; aim for 95% in high demand pivoting athletes.
- Single, triple, crossover, and timed hop performance at least 90% symmetry, with a 95% clinic target for unrestricted pivoting and good landing quality.
- Confidence during full speed sport tasks and completion of a graded progression from individual drills through practice.

Symmetry alone is insufficient if both legs are weak. Review absolute strength, endurance, movement quality, and readiness for the specific sport or occupation.

When to contact the surgical team

Seek review for new giving way or locking, a motion plateau, repeated swelling, increasing wound drainage or redness, or new calf pain and swelling. Chest pain, shortness of breath, or fainting requires emergency care.

Sources: Chahla ACL Repair Post-Operative Rehabilitation Protocol, 2025:

<https://www.jorgechahlamd.com/wp-content/uploads/2025/04/ACL-Repair-Post-Op-PT-Protocol.pdf> .

Bousquet et al., IJSPT 2018: <https://pmc.ncbi.nlm.nih.gov/articles/PMC6063063/> . Zhang et al.,

primary ACL repair consensus 2025: <https://doi.org/10.1093/burnst/tkae079> . These clinic

defaults are not a universal validated repair regimen.