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SPORTSHEALING

ACL Rehab Protocol

Rehabilitation after ACL reconstruction

The SportsHealing ACL Performance Pathway. Written by Associate Professor Chinmay Gupte, PhD, FRCS (Tr & Orth). Version 2026. Last reviewed: [MONTH] 2026.

Recovery from ACL reconstruction takes nine to twelve months or longer, and progression is decided by criteria rather than by dates. The pathway runs from prehabilitation before surgery through seven phases: protecting the graft, restoring movement, building strength, returning to impact and running at five to six months, developing agility and power, and returning to sport once objective testing is passed.

> **The core principle.** Your knee is ready when it proves it through strength, control and confidence, not simply when enough time has passed. Every phase below has progression criteria, and you move on when you meet them.
>
> This protocol is a general guideline. It is modified for meniscal repair, collateral ligament reconstruction, multiligament surgery, hypermobility and persistent swelling. Always follow the instructions given by your own surgeon and physiotherapist.

ACL recovery timeline at a glance

Phase	Timing	Focus	Criteria to progress
0. Prehab	Before surgery	Settle the knee and build strength before the operation	No swelling, full range of movement, quadriceps and hamstrings at 90% of the other leg
1. Protect and activate	Weeks 0 to 2	Swelling, full extension, quadriceps activation	Full extension, straight leg raise without lag, minimal effusion
2. Restore movement and early strength	Weeks 2 to 6	Normal walking, flexion to 120 degrees, closed chain strength	Normal gait, good single leg control, minimal swelling
3. Strength and neuromuscular control	Weeks 6 to 12	Gym and single leg strength, balance, glutes	Strength at 70% to 80% of the other leg, good neuromuscular control
4. Impact loading and running	12 to 24 weeks	Hopping and landing, then a walk to jog programme	No swelling, full range, quadriceps and hamstrings 70% to 80%, good landing mechanics
5. Agility and power	5 to 8 months	Plyometrics, multidirectional drills, deceleration	Strength 80% to 85%, good single leg control, no knee collapsing inwards on landing
6. Return to sport	9 to 12 months and beyond	Staged return through non contact, contact, then competition	The full return to sport testing battery below

Phase 0: prehabilitation before ACL surgery

What you do before the operation shapes how the first three months go. A swollen, stiff knee with weak quadriceps at the time of surgery makes early rehabilitation harder.

Goals before surgery

- Eliminate swelling
- Regain full range of movement
- Regain 90% of the strength in the quadriceps and hamstrings compared with the other side
- Be able to relax the hamstring fully

What helps

- Gentle swimming or low resistance cycling for conditioning and range of movement
- Single leg balance exercises, if you can tolerate them

Phase 1: protect and activate, weeks 0 to 2

FOR YOU

Concentrate on reducing swelling, getting the knee fully straight, and switching the quadriceps back on. Use ice, compression and elevation, and do the gentle exercises you have been given. Walk with support as you need it.

Where possible, come off codeine and other opiate based painkillers by five to seven days after surgery. Stopping them early helps with constipation, nausea and feeling foggy.

FOR YOUR PHYSIOTHERAPIST

Restore full passive extension, control the effusion and initiate quadriceps activation. Weight bear as tolerated with crutches. [CONFIRM: brace policy, if any.] Modify weight bearing and range in cases of meniscal repair, collateral ligament reconstruction or instability.

> **Criteria to progress:** full extension, straight leg raise without lag, minimal effusion.

Phase 2: restore movement and early strength, weeks 2 to 6

FOR YOU

Get your walking back to normal, improve how far the knee bends, and start strengthening. Cycling, step ups and balance exercises all help. Try single leg balance if you can, and do not worry if you cannot yet. Keep managing swelling with ice, elevation and massage.

FOR YOUR PHYSIOTHERAPIST

Aim for full extension and a straight leg raise without extensor lag. Achieve normal gait and range of movement of 120 degrees or more, and start closed chain strengthening. Avoid deep flexion early. Use electrical muscle stimulation as appropriate to stimulate the quadriceps. Ensure hamstring relaxation, lying prone with a pillow in front of the knee. Add hip abduction and clam shell exercises for the glutes, progressing with a low resistance elastic band above the knee.

> **Criteria to progress:** normal gait, good single leg control, minimal swelling. Progress more cautiously after meniscal repair, complex multiligament reconstruction, or where swelling persists.

Phase 3: strength and neuromuscular control, weeks 6 to 12

FOR YOU

Build strength and confidence through gym based work, glute exercises and single leg exercises. Walking and exercising in the shallow end of a swimming pool is useful at this stage, as is swimming freestyle. Avoid breaststroke.

FOR YOUR PHYSIOTHERAPIST

Develop quadriceps strength to a limb symmetry index of 70% or more, introduce open chain extension cautiously, and progress resistance training.

- Single leg balance, with and without arms out, and with eyes open then closed when it is safe
- Double leg squat, progressing to supported single leg squat, then to independent single leg squat. Start at 40 degrees of squat and progress to 70 degrees
- Glute bridges, starting double leg and supported, progressing to single leg
- Heel raises
- Gentle hamstring and quadriceps stretches
- Swimming pool based training

> **Criteria to progress:** strength at 70% to 80% of the other limb, good neuromuscular control. Delay progression in hypermobility or where other ligament procedures were carried out.

Phase 4: impact loading and running, 12 to 24 weeks

FOR YOU

Begin single leg hops, up and down. Make sure you are landing well and not tiring quickly. Only then start running, and that is usually **not before five months, and more often around six months**. The exception is professional athletes with a patellar tendon graft following an intensive rehabilitation programme of more than four hours a day. When you do start, follow a structured walk to jog programme.

It is not unusual to get pain at the front of the knee at this stage, or some swelling after impact loading.

FOR YOUR PHYSIOTHERAPIST

Introduce running only when the criteria are met. If anterior knee pain develops, consider a structured loading regime using leg presses and omit isolated leg extensions. Consider fat pad massage and taping.

> **Criteria to start running:** no effusion, full range of movement, quadriceps and hamstrings at 70% to 80% of the other leg, acceptable movement quality and good landing mechanics. Delay if control is poor, or if pain or swelling persists.

Phase 5: agility and power, 5 to 8 months

FOR YOU

Progress to jumping, landing and changing direction.

FOR YOUR PHYSIOTHERAPIST

Introduce plyometrics and multidirectional drills. Emphasise deceleration and control of knee valgus.

> **Criteria to progress:** strength at 80% to 85% of the other leg, good single leg control and landing mechanics with no knee collapsing inwards, good glute control, good quadriceps, hamstring and calf flexibility, and excellent balance. Modify the intensity where asymmetry or instability persists.

Phase 6: return to sport, 9 to 12 months and beyond

Return to sport when testing confirms you are ready and when you feel confident. The return is staged rather than all at once:

1. Sport specific pivoting, deceleration and landing drills, with gentle non contact ball skills
2. Non contact training
3. Full sprint speeds, deceleration and pivoting
4. Contact training
5. Competitive game, 10 to 20 minutes as a substitute, at low frequency per week
6. Full competitive game, at low frequency per week
7. Full return to sport

Return to sport testing battery

Measured as limb symmetry index, comparing the operated leg with the other leg.

- **Strength:** 95% or more
- **Hop tests:** 95% or more, across front to back hop, side to side hop, triple hop, crossover hop and timed hop
- **Balance:** star excursion balance test
- **Movement quality:** controlled landing and cutting
- **Psychological readiness:** ACL RSI score of 65 to 70 or above

- **Clinical:** no effusion, full range of movement
- **Fatigue and confidence:** quality maintained under fatigue, and high confidence

Any remaining deficit is a reason to delay. Carry on with a maintenance and injury prevention programme once you are back. See our knee injury prevention page and the FIFA 11+ warm up.

How to load safely at every stage

- Progress your loading when pain is 3 out of 10 or less and there is no increase in swelling within 24 hours
- Train two to three times a week
- Increase intensity gradually, guided by how well you tolerate and control it

How your protocol may differ

Meniscal repair alongside ACL reconstruction

Weight bearing and range of movement are restricted early, and the first phases progress more cautiously. See the meniscus repair rehab protocol.

Collateral ligament, PCL or multiligament reconstruction

Weight bearing and range are modified, and progression through every phase is slower. See our full protocol library. For kneecap instability see the MPFL rehab protocol.

Graft choice

Professional athletes with a patellar tendon graft and an intensive daily rehabilitation programme may run earlier than five months. [CONFIRM: any further graft specific guidance for hamstring and quadriceps tendon grafts.]

Hypermobility

Progression from the strength phase onwards is delayed and the criteria are applied more strictly.

Children and adolescents

Growing patients follow a modified protocol. See the children's ACL rehab protocol and children's ACL injuries.

Revision ACL surgery

Rehabilitation after a repeat reconstruction is slower and return to sport is usually later. See ACL re-rupture and revision strategy.

Frequently asked questions

When can I drive after ACL reconstruction?

Driving is self certified. You may drive when you can perform an emergency stop and any evasive manoeuvre without your operated knee hindering the movement. As a guide, we would not usually advise driving before six weeks with an operated right knee, or before six weeks in a manual car with either knee. An operated left knee in an automatic car is often earlier. You must also be off opioid painkillers. Tell your insurer.

How long does ACL rehab take?

Return to sport is usually between nine and twelve months, and sometimes longer. The date matters less than the testing: you return when strength and hop testing reach 95% of your other leg and your movement quality and confidence are good.

When can I run after ACL surgery?

Running usually starts between five and six months, and rarely before five months. Before you run you need no swelling, full range of movement, quadriceps and hamstrings at 70% to 80% of your other leg, and controlled single leg hopping and landing.

Do I need prehab before ACL surgery?

Yes. Going into surgery with no swelling, full range of movement and 90% of your strength in the quadriceps and hamstrings makes the early phases considerably easier. Gentle swimming, low resistance cycling and single leg balance all help.

Is it normal to get pain at the front of the knee when I start running?

Yes. Anterior knee pain and some swelling after impact loading are common at this stage. Your physiotherapist may switch to a structured loading programme using leg presses, leave out isolated leg extensions, and use fat pad massage and taping.

Why should I stop opiate painkillers early?

Coming off codeine and other opiate based painkillers by five to seven days after surgery helps with constipation, nausea and feeling foggy. Follow the pain relief plan you were given when you were discharged.

Can I swim after ACL reconstruction?

Gentle swimming is useful before surgery, and pool based walking and exercises in the shallow end are helpful from around six weeks. Swim freestyle rather than breaststroke.

Can I follow this rehab with a physiotherapist in another country?

Yes. The protocol is written for clinicians as well as patients, and any qualified physiotherapist or physical therapist can work from it. Download the PDF and bring it to your first appointment together with your operation note.

Driving after surgery

Driving is self certified. There is no fixed date at which you are allowed to drive. You may drive when you can perform an emergency stop and any evasive manoeuvre without your operated knee hindering the movement. Only you can judge that, and it varies considerably between people.

As a guide:

- **Operated right knee:** we would not usually advise driving before 6 weeks
- **Manual car, either knee:** we would not usually advise driving before 6 weeks
- **Operated left knee in an automatic car:** often possible earlier, once you can meet the test above

There are no additional restrictions specific to this operation beyond the guidance above.

You should also be off opioid painkillers and anything else affecting your reactions, and able to get in and out of the car independently. Try the emergency stop in a stationary car first, then in a quiet car park before driving on the road.

Tell your insurer. Driving before you are medically fit can invalidate your policy if you are involved in an accident. **The DVLA usually does not need to be told** about recovery from surgery, unless you are still unable to drive three months afterwards or your surgeon advises it. If you hold a Class 2 licence or drive for work, expect a longer period off the road and speak to your employer.

References

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About this protocol

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This protocol is a general guideline and does not replace the specific instructions given by your own surgeon and physiotherapist. If you are being treated elsewhere, please share this document with your physiotherapist together with your operation note.