

20-26 weeks

Strengthening Exercises

- Continue with the programme for Quadriceps, hamstrings, and calf, as well as gluteals and core strengthening.
- Increase your gym based programme and strengthen through full range

Functional Activities

- Start agility drills with zig-zag runs, side stepping, and cross-over drills.
- Progress to backwards jumps and hopping, then sideways hopping.
- Progress to 'sports-specific' exercises, including side-steps, push-offs, ball kicking, jumps and landings, etc.

Return to sport should only be contemplated after the following:

- 1) a minimum of 6 months post surgery, and 12 months for patients under 20 years of age.
- 2) full range of motion is restored.
- 3) Quadriceps and Hamstrings strength is >80% of the opposite leg.
- 4) No swelling after activity.
- 5) No subjective instability feelings.

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REHABILITATION PROTOCOL FOR ANTERIOR CRUCIATE LIGAMENT (ACL) RECONSTRUCTION KNEE SURGERY

Physiotherapy Guidelines

This is a guideline for your physiotherapist to help you progress through rehabilitation over the course of 26 weeks following your knee operation. A physiotherapist who is experienced in knee surgery rehabilitation should be consulted throughout the programme to supervise and where necessary individually modify your programme.

Aims of Rehabilitation

To restore range of motion and stability to the knee, whilst protecting the reconstructed ligament. The anterior cruciate ligament graft takes approximately 6 months to biologically heal, and this healing time must be respected.

The final goal is to prevent knee instability and enable you to return to the level of physical activity that you enjoyed prior to your ACL injury.

Immobilisation / Bracing

An extension knee splint is worn at all times (except for exercises) until quadriceps control is regained.

This usually takes 7-14 days.

If a *meniscal repair* has been performed as part of the knee reconstruction then a hinged knee brace will be worn for 8 weeks. The first four weeks locked in extension, and the second four weeks ranging from 0-90°. The overall rehabilitation will need to be tailored to accommodate this.

Post Operative Programme

1-14 Days

Manual Physiotherapy

- Intermittent cryotherapy to minimize joint swelling over first 4-5 days.
- Cryotherapy after exercises, heat packs may be used on the knee and thigh prior to exercises.
- Circumferential compression dressing (Tubigrip) from ankle to thigh.
- Elevate the affected limb to minimize swelling.
- Ankle exercises for DVT prophylaxis .
- Patellar mobilization exercises.

Range of Motion / Strengthening Exercises

- Quadriceps sets, gluteal sets.
- Passive knee straightening with a heel roll supine.
- Seated knee flexion and assisted extension.
- Prone leg hang with knee off the end of the bed.
- Straight leg raises in the splint.

Functional Exercises

- Weight bear as tolerated through the extension knee splint.
- Walk between crutches for balance until confident.
- Stair training.
- Transfers; bed, chair, car.

3-6 Weeks

Range of Motion / Strengthening Exercises

- Quadriceps and gluteal sets.
- Passive, active assisted and active ROM exercises, aiming to restore full extension early, then full flexion by 8 weeks.

Quadriceps strengthening programme:

- Straight leg raises, supine and seated.
- Supported squats with wall or bench.
- Lunges.

Hamstring strengthening programme:

- Gentle prone and standing curls.
- Watch for bruising and cramping (graft harvest site), and go slowly.

Calf strengthening:

- Bench supported toe raises.

Functional Activities

- Normalize gait without extension splint or crutches.
- Return to seated work.
- Exercise bike from week 5 but no resistance and seat elevated .

7-16 weeks

Manual Physiotherapy

- Patellar mobilization exercises.
- Quadriceps, calf and Hamstrings deep tissue massage.
- Wound massage with bio-oil or Vitamin E cream.

Strengthening / Proprioceptive Exercises

- ROM exercises to achieve full flexion.
- Continue strengthening exercises outlined above and include:
 - Closed chain leg presses 0-90°, supine, single leg and double leg.
 - Unsupported squats.
 - Elliptical Cross trainer.
 - Increase hamstring curls.
- For proprioception; tilt board, wobble board, single leg, partial squats.

Functional Exercises

- Exercise bike, and can progress to road bike – but not off-road!
- Hydrotherapy but no kicking, just walking, pool running.

12-20 weeks

Strengthening Exercises

- Continue with the programme for quadriceps, hamstrings, and calf, as well as gluteals and core strengthening.
- Increase your gym based programme and strengthen through full range.

Functional Activities

- Start straight line running, initially alternate jogging and walking on even ground.
- Increase distance and intensity in a straight line, working up to sprints after 16 weeks.
- Once straight line running is achieved, commence some gentle directional changes, gradually shortening the arc of directional change. Again start slow and gradually increase speed.
- Start jumping forward and back, gradually increasing the distance, then do the same with single leg hops.