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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 twenty-six 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 six 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 seven to fourteen days.
- If a meniscal repair has been performed as part of the knee reconstruction then a hinged knee brace will be worn for eight weeks. The first four weeks locked in extension and the second four weeks ranging from 0 to 90 degrees. The overall rehabilitation will need to be tailored to accommodate this.

Consulting At:
- Melbourne Orthopaedic Group, 33 The Avenue, Windsor 3181
- Glenferrie Private Hospital, 29 Hilda Crescent, Hawthorn 3122
- Level 4, 250 Collins Street, Melbourne 3000

EXERCISES/TREATMENT FOR EACH STAGE OF REHABILITATION

1-14 DAYS

Manual Physiotherapy

- Intermittent cryotherapy to minimise joint swelling over the first four to five 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 minimise swelling.
- Ankle exercises for DVT prophylaxis.
- Patellar mobilisation 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 hand 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 eight weeks.

Quadriceps strengthening program:

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

Hamstring strengthening program:

- Gentle prone and standing curls.
- Watch for bruising and cramping at the graft harvest site. Go slowly.

Calf strengthening:

- Bench supported toe raises.

Functional Exercises

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

EXERCISES/TREATMENT FOR EACH STAGE OF REHABILITATION

7-16 WEEKS

Manual Physiotherapy

- Patellar mobilisation 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 to 90 degrees, 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 to start and can progress to road bike (but not off road!).
- Hydrotherapy but with no kicking, only walking or pool running.

12-20 WEEKS

Strengthening Exercises

- Continue with the program for quadriceps, hamstrings and calf as well as gluteals and core strengthening.
- Increase your gym based program 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 sixteen 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.

EXERCISES/TREATMENT FOR EACH STAGE OF REHABILITATION

20-26 WEEKS

Strengthening Exercises

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

Functional Activities

- Start agility drills with zig-zag runs, side stepping and crossover drills.
- Progress to backwards jumps and hopping, then sideways hopping.
- Progress to sport-specific exercises including side steps, push-offs, ball kicking, jumps and landing etc.

RETURN TO SPORT

Return to sport should only be contemplated after the follows:

- A minimum of six months post-surgery and twelve months for patients under twenty years of age.
- Full range of motion is restored.
- Quadriceps and hamstrings strength is > 80% of the opposite leg.
- There is no swelling after activity.
- There are no subjective instability feelings.