

Non-Operative ACL Rehabilitation Protocol

Phase 1 (Week 1-2): Swelling Reduction, Pain Control, Quadriceps Activation

- **Aims:** Reduce Swelling, Control Pain, Regain Quads Control
- **Compression + Cryotherapy** (Cold Packs/Active Fluid cooling): reduce haemarthrosis and swelling
- **Crutches** for ambulation (weight bearing as tolerated) – aim to discontinue by week 1-2
- **Quadriceps Activation:** if no voluntary quad control → Neuromuscular Electrical Stimulation (NMES/TENS)
- **Range of Motion:**
 - o Active and Passive ROM exercises to gain maximal ROM (0-90° Aim)
- **Exercises: Combination of Closed + Open Chain**
 - o OKC (Open Chain): only from 30-100° ROM (Leg Extensions), SLRs
 - o CKC (Closed Chain): Quad sets, hamstring sets
- **Core + Hip Strengthening + Truncal Control**

Phase 2 (Week 2-4): Intermediate Retraining

- **Aims:** obtain full ROM, reduce swelling and pain, restore proprioception, early muscle retraining
- Swelling control: compression and cryotherapy to continue as required
- **Range of Motion:**
 - o Passive Stretches 4-5 x per day to obtain maximal ROM
 - o Aim for full passive extension
 - o Maximal flexion as tolerated
- **Exercises: Combination of Closed + Open Chain**
 - o Isometric Quads
 - o Straight Leg Raises
 - o Leg Press 0-60°
 - o Lateral Lunges and Step Ups
 - o Knee Extensions (30-100°)
 - o Hamstring Curls
 - o Cycling
 - o Proprioception Exercises
- **Pool:** Forward and Backwards running
- **Core + Hip Strengthening + Truncal Control**

Phase 3 (Week 4-8): Neuromuscular Retraining

- **Aims:** maintain full knee ROM, improve strength, enhance proprioception, balance and control, improve muscular endurance and confidence
- **Range of Motion:** Restoration of Full ROM
- **Exercises: Combination of Closed and Open Chain**
 - o Maximise Quadriceps + Hamstring Strength: wall and vertical squats
 - o Hamstring Curls
 - o Lateral and Front Step Ups
 - o Bicycle for strength and endurance
 - o Stepper Machine
 - o Proprioception drills
- **Advanced Proprioception Training:** closed chain exercises on unstable surfaces
- **Straight Line Running:** Week 6
- **Perturbation Challenges/Training:** Patient on rocker board challenged with instability by Physiotherapist

Phase 4 (Week 8-12):

- Goals: enhance neuromuscular control, normalise muscle strength, perform selective sports specific drills + agility training
- Continue previous neuromuscular exercises
- Plyometric retraining:
 - o Leg Press Plyometrics
 - o Box Jumps

Phase 5 (Week 12 +): Graduated Return to Sport

- Strength >90% contralateral side
- Proprioception: 100% contralateral side
- No functional instability
- Gradual Resumption of sports
- Satisfactory clinical examination

If at any time there is increasing pain, catching or locking within the knee please contact Dr Slattery on 98196934 or 0475 582 244.