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**ACL REHABILITATION PROGRAMME**

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| **Rehabilitation consists of:** | * Daily exercises (done 2 to 3 times daily). * Stretching (to be done daily). * Strength training (3 times weekly) starting week 3. * Balance exercise / Perturbation training. * Plyometric exercise.   **NB**:   * For the first 4 months post-surgery, no repetitive terminal extension allowed. * Open chain exercises restricted to 90° – 60° only. For a further 2 months 90° – 30° only. * No active hamstring exercise for the first 4 weeks. |
| **Week 1 and 2** | * **Daily exercises:**   + Foot pump exercise.   + Self-tightening quads.   + VMO activation in prone lying (tummy lying).   + SLR – back lying.   + Heel slide, sitting 90°.   + Clam exercise (if pain-free).   + Hip abduction – side lying, knee 90° (progress to knee extended).   + Knee extension standing with theraband.   + Hip extension standing.   + Hip abduction in standing.   + Hip flex (straight knee) standing.   + Wall slide (once daily only).   + Toe raises.   + Balance, toe standing both legs.   + Balance, flat foot one-leg.   + RICE.   + Stretch: Passive knee extension – ‘torture pillow’ (20 minutes, 3 times daily).   **All exercises 3 x 8 to 15.** |
| **Week 3, 4 and 5** | * **Daily exercises:**   + Self-tightening quads.   + SLR – lying or sitting (add ankle weight if necessary).   + VMO sitting on a chair.   + Heel slide, sitting 110°.   + Hip abduction – side lying, knee extended (add ankle weight when ready).   + Hip extension / abduction in standing (add ankle weights when ready).   + Gluteus medius – side lying, hip in external rotation (toes pointing up).   + Back lying wall slide. * **Stretching:**   + Dynamic stretching, sciatic nerve.   + Passive knee extension stretch (‘torture pillow’).   + Stretching of hamstrings and quads (use towel for quads if necessary). * **RICE.** * **Stationary bike (no resistance, 15 to 20 minutes daily).** * **Strength exercise:**   + Mat exercise 1: Strengthen buttocks: one leg pelvis lift (repeat lifts).   + Mat exercise 2: Strengthen hamstrings: one leg pelvis lift and hold for 15 seconds, progress to heel raise (week 4).   + Mat exercise 3: Strengthen quads, hands on floor, one leg standing, knee flex (difficult exercise) – week 5 only.   + Hamstring exercise 1 in prone – week 5.   + Step-ups – forward and side.   + Squats - 45°.   + Wall slide - 45°.   + Toe raises.   + Stationary bike.   + Walking on treadmill backwards.   **All exercises 3 x 15.**   * **Perturbation training:**   + Balance on one leg, open and closed eyes (hold for 10 second intervals).   + Balance on wobble board – both legs (hold for 10 second intervals).   + Balance standing on operated leg, slide good leg front / back and side. |
| **Week 6, 7 and 8** | * **Daily exercises:**   + Hip musculature as previous weeks (weight).   + Gluteus medius as previous weeks.   + Hamstring curls in prone lying (on tummy) and standing.   + Balance – one leg (foam mat / pillow). * **Stretching:**   + Passive knee extension stretch.   + Stretch hamstrings, quads and iliotibial band.   + Dynamic knee stretch – sciatic nerve. * **RICE.** * **Stationary bike – increase duration and resistance as tolerated.**   **All exercises 3 x 15.**   * **Strength exercises:**   + Mat exercise 1+ buttock – using step.   + Mat exercise 2+ hamstrings – pelvic lift and slide both feet or “run” on heels.   + Mat exercise 3+ quads – knee to touch floor.   + Hamstring exercise 1+ in prone with light weight / theraband (TB)   + Hamstring curls in standing position with theraband (TB).   + Additional hamstring exercises – supine lying, pelvic lift using big gym ball, pull ball towards buttocks.   + Leg extensions / leg abduction in standing (ankle weights if necessary).   + Squat – 45° to 90° as pain allows.   + Wall slide – 45° to 90°.   + Step-ups / Step-downs.   + One leg squats off step – only if patient is ready.   + One leg squat “hand to floor”.   + Squats on incline board.   + ‘Crab-walking’.   + Toe raises.   + Abduction / adduction (abd. / add.) machine at the gym. * **Perturbation training:**   + Advance exercises: * Skateboard. * One leg standing – flex trunk forward / back. * **Trampoline work – week 8.**   **All exercises 3 x 15.** |
| **Week 9, 10 and 11** | * **Daily stretching:**   + Stretch of quads, hamstrings and iliotibial band. * **Strength exercises:**   + Mat exercise 3++ buttock - using ball – hands behind head.   + Mat exercise 2++ hamstring – pelvic lift and one leg slide (good leg off the floor).   + Mat exercise 3++ quads, hands standing on one leg, knee flex off step.   + Hamstring exercise 1++ in prone with weight.   + Hamstring curls in standing with weight.   + Hamstring exercise using gym ball.   + Squats (introduce weight).   + One leg squat.   + Wall slides (introduce weight).   + Gluteus medius exercise as per weeks 6 – 8 (then add weights).   + Leg extensions / abduction in standing (increase weight).   + Leg press.   + Toe raises.   + Abduction / adduction machine. * **Perturbation training:**   + Balance 1 leg, bend down 3-12-9 o’ clock.   + Balance 1 leg on wobble board – head rotation / ball game.   + Advanced balance exercise on skateboard. * **Plyometric exercise:**   + Side / forward / back jumps over towel – 2 legged – progress to operated leg only when tolerated.   + Twist both legs (soft knee). |
| **Week 12, 13 and 14** | * **Strength training** 3 to 4 time weekly with physio and at gym:   + Mat exercise 1, 2 and 3 as per week 9, 10 and 11.   + Hamstring exercise 1 in prone – can use gym machine.   + Hamstring curl machine at gym (sitting / standing).   + Leg extensions / abduction with bands or weights.   + Squats and wall slides – increase weight / one leg wall slide.   + Dead lifts – be careful with correct technique.   + Leg press – concentric work both legs, eccentric work operated leg only.   + Toe raises. * **Stretching.** * **Advanced perturbation training.** * **Plyometric training:**   + Jump-ups sideways, 1 leg – onto step.   + Jump-ups forwards / backwards, 1 leg onto step.   + Skipping forwards 30m.   + Skipping with rope. |
| **Progression over the next 3 months:** | * **Strength training:**   + Squats and wall slides:     - Increase weight.     - Squat with one leg – introduce weight when tolerated.     - Variation squats, i.e. non-affected leg up on chair – squat with jump.     - Squat on wobble board.   + Leg press – increase to more explosive exercise.   + Hamstring curls prone / sitting / standing using machine – increase weight.   + Toe raises – increase weight.   + Dead lifts – increase weight.   + Lunges - progress to weight and reverse lunges. * **Advanced perturbation training.** * **Plyometric training:**   + One leg sideways and forwards onto step, increase pace and step height.   + Plyometric jumps “Burpies”.   + High jumps.   + Combination jumps. * **Running:**   + Circle.   + Skate and direction change: 4 to 5 months. * **Sport specific drills.** * **Agility drills, i.e. cones, figure-of-eight.** |

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| **Cardiovascular Exercise:** | |
| **Stationary bike** | 4 to 6 weeks. |
| **Treadmill** | Backwards at 3 weeks, and forwards at 8 weeks. |
| **Road bike** | 12 to 16 weeks. |
| **Elliptical machine** | 8 weeks. |
| **Swimming (crawl)** | 10 to 12 weeks. |
| **Jogging in a straight line** | 12 to 16 weeks. |
| **Running on an uneven surface** | 6 months. |
| **Biokinetics** | 4 months. |
| **Contact sport** | 9 to 12 months. |

**Good luck with your rehabilitation.**

