

## ACL REHABILITATION PROGRAMME

<p><b>Rehabilitation consists of:</b></p>	<ul style="list-style-type: none"> <li>• Daily exercises (done 2 to 3 times daily).</li> <li>• Stretching (to be done daily).</li> <li>• Strength training (3 / 4 times weekly) starting week 3.</li> <li>• Balance exercise / Perturbation training.</li> <li>• Plyometric exercise.</li> <li>• Sport specific activity and drills.</li> <li>• Return to sport screening tests by physiotherapist at 9 months post-surgery (this is done to ensure the patient is ready to return to contact sport).</li> </ul> <p><b>NB:</b></p> <ul style="list-style-type: none"> <li>- For the first 6 months post-surgery, no repetitive terminal extension allowed. Open chain exercises restricted to 90° – 60° only for four months. For a further 2 months 90° – 30° only.</li> <li>- No active hamstring exercise for the first 4 weeks.</li> </ul>
<p><b>Week 1 and 2</b></p>	<ul style="list-style-type: none"> <li>• <b>Daily exercises:</b> <ul style="list-style-type: none"> <li>○ Foot pump exercise.</li> <li>○ Self-tightening quads.</li> <li>○ VMO activation in prone lying (tummy lying).</li> <li>○ SLR – back lying.</li> <li>○ Heel slide, sitting 90°.</li> <li>○ Clam exercise (if pain-free).</li> <li>○ Hip abduction – side lying, knee 90° (progress to knee extended).</li> <li>○ Knee extension standing with theraband.</li> <li>○ Hip extension standing.</li> <li>○ Hip abduction in standing.</li> <li>○ Hip flex (straight knee) standing.</li> <li>○ Wall slide (once daily only).</li> <li>○ Toe raises.</li> <li>○ Balance, toe standing both legs.</li> <li>○ Balance, flat foot one-leg.</li> <li>○ RICE.</li> <li>○ Stretch: Passive knee extension – ‘torture pillow’ (20 minutes, 3 times daily).</li> </ul> </li> </ul> <p><b>All exercises 3 x 8 to 15.</b></p>
<p><b>Week 3, 4 and 5</b></p>	<ul style="list-style-type: none"> <li>• <b>Daily exercises:</b> <ul style="list-style-type: none"> <li>○ Self-tightening quads.</li> <li>○ SLR – lying or sitting (add ankle weight if necessary).</li> <li>○ VMO sitting on a chair.</li> <li>○ VMO in long sitting.</li> <li>○ Heel slide, sitting 110°.</li> </ul> </li> </ul>



	<ul style="list-style-type: none"> <li>○ Hip abduction – side lying, knee extended (add ankle weight when ready).</li> <li>○ Hip extension / abduction in standing (add ankle weights when ready).</li> <li>○ Gluteus medius – side lying, hip in external rotation (toes pointing up).</li> <li>○ Back lying wall slide.</li> <li>● <b>Stretching:</b> <ul style="list-style-type: none"> <li>○ Dynamic stretching, sciatic nerve.</li> <li>○ Passive knee extension stretch ('torture pillow').</li> <li>○ Stretching of hamstrings and quads (use towel for quads if necessary).</li> </ul> </li> <li>● <b>RICE.</b></li> <li>● <b>Stationary bike (no resistance, 15 to 20 minutes daily).</b></li> <li>● <b>Strength exercise:</b> <ul style="list-style-type: none"> <li>○ <b>Mat exercise -1:</b> Buttocks (gluteus maximus): Repeated bridge with feet firmly on the floor. Progress to bridge on heels.</li> <li>○ <b>Mat exercise 1:</b> Strengthen buttocks: one leg pelvis lift (bridge) – repeat lifts.</li> <li>○ <b>Mat exercise -2:</b> Hamstrings: Bridge and hold position "shift" feet back / forth 1 – 2 cm.</li> <li>○ <b>Mat exercise 2:</b> Strengthen hamstrings: one leg pelvis lift (bridge) and hold for 15 seconds, progress to curling toes up and balancing on heel (week 5).</li> <li>○ <b>Mat exercise 3:</b> Strengthen quads, hands on floor, one leg standing, knee flex (difficult exercise) – week 5 only.</li> <li>○ <b>Hamstring exercise 1</b> in prone (inner to middle range only) – week 5.</li> <li>○ Step-ups – forward and side.</li> <li>○ Squats - 45°.</li> <li>○ Wall slide - 45°.</li> <li>○ Toe raises.</li> <li>○ Stationary bike.</li> <li>○ Walking on treadmill backwards.</li> </ul> </li> <li><b>All exercises 3 x 15.</b></li> <li>● <b>Perturbation training:</b> <ul style="list-style-type: none"> <li>○ Balance on one leg, open and closed eyes (hold for 10 second intervals).</li> <li>○ Balance on wobble board – both legs (hold for 10 second intervals).</li> <li>○ Balance standing on operated leg, slide good leg front / back and side.</li> </ul> </li> </ul>
<p><b>Week 6, 7 and 8</b></p>	<ul style="list-style-type: none"> <li>● <b>Stretching:</b> <ul style="list-style-type: none"> <li>○ Passive knee extension stretch.</li> <li>○ Stretch hamstrings, quadriceps, iliotibial band and calves.</li> <li>○ Dynamic knee stretch – sciatic nerve.</li> </ul> </li> <li>● <b>RICE.</b></li> <li>● <b>Stationary bike – increase duration and resistance as</b></li> </ul>



	<p>tolerated.</p> <ul style="list-style-type: none"> <li>• <b>Strength exercises:</b> <ul style="list-style-type: none"> <li>○ <b>Mat exercise 1+</b> buttock – using step.</li> <li>○ <b>Mat exercise 2+</b> hamstrings – pelvic lift and slide both feet or “run” on heels.</li> <li>○ <b>Mat exercise 3+</b> quads – knee to touch floor.</li> <li>○ <b>Hamstring exercise 1+</b> in prone with light weight / theraband (TB). Progress to outer range.</li> <li>○ Hamstring curls in standing position with theraband (TB). Progress through ranges.</li> <li>○ Additional hamstring exercises – supine lying, pelvic lift using big gym ball, pull ball towards buttocks. Progress through range.</li> <li>○ Leg extensions / leg abduction in standing (ankle weights if necessary).</li> <li>○ Gluteus medius exercises: <ul style="list-style-type: none"> <li>1. Side lying leg lifts (toes pointing upwards).</li> <li>2. Figure 4 in (lying / standing).</li> <li>3. 7 4 7 drill.</li> <li>4. One-leg squat “hand to floor”.</li> </ul> </li> <li>○ Squat – 45° to 90° as pain allows.</li> <li>○ Wall slide – 45° to 90°.</li> <li>○ Step-ups / Step-downs.</li> <li>○ One leg squats off step – <b>only if patient is ready</b>.</li> <li>○ Squats on incline board.</li> <li>○ ‘Crab-walking’.</li> <li>○ Toe raises.</li> <li>○ Abduction / adduction (abd. / add.) machine at the gym.</li> </ul> </li> <li>• <b>Perturbation training:</b> <ul style="list-style-type: none"> <li>○ Advance exercises: <ul style="list-style-type: none"> <li>▪ Skateboard.</li> <li>▪ One leg standing – flex trunk forward / back.</li> <li>▪ 7 4 7 drill.</li> </ul> </li> </ul> </li> <li>• <b>Trampoline work – week 8.</b></li> </ul> <p><b>All exercises 3 x 15.</b></p>
<p><b>Week 9, 10 and 11</b></p>	<ul style="list-style-type: none"> <li>• <b>Daily stretching:</b> <ul style="list-style-type: none"> <li>○ Stretch of quads, hamstrings and iliotibial band.</li> </ul> </li> <li>• <b>Strength exercises:</b> <ul style="list-style-type: none"> <li>○ <b>Mat exercise 1++</b> buttock - using ball – hands behind head.</li> <li>○ <b>Mat exercise 2++</b> hamstring – pelvic lift and one leg slide (good leg off the floor).</li> <li>○ <b>Mat exercise 3++</b> quads, hands standing on one leg, knee flex off step.</li> <li>○ <b>Hamstring exercise 1++</b> in prone with weight.</li> <li>○ Hamstring curls in standing with weight.</li> <li>○ Hamstring exercise using gym ball.</li> <li>○ Squats (introduce weight).</li> <li>○ One leg squat.</li> <li>○ Wall slides (introduce weight).</li> <li>○ Gluteus medius exercise as per weeks 6 – 8 (then add weights).</li> <li>○ Leg extensions / abduction in standing (increase weight).</li> </ul> </li> </ul>



	<ul style="list-style-type: none"> <li>○ Leg press. <b>Consult with your physiotherapist regarding range of movement for this exercise.</b></li> <li>○ Toe raises.</li> <li>○ Abduction / adduction machine.</li> <li>● <b>Perturbation training:</b> <ul style="list-style-type: none"> <li>○ Balance 1 leg, bend down 3-12-9 o' clock.</li> <li>○ Balance 1 leg on wobble board – head rotation / ball game.</li> <li>○ Advanced balance exercise on skateboard.</li> </ul> </li> </ul>
<p><b>Week 12, 13 and 14</b></p>	<ul style="list-style-type: none"> <li>● <b>Strength training</b> 3 to 4 time weekly with physio and at gym: <ul style="list-style-type: none"> <li>○ Mat exercise 1, 2 and 3 as per week 9, 10 and 11.</li> <li>○ Hamstring exercise 1 in prone – can use gym machine.</li> <li>○ Hamstring curl machine at gym (sitting / standing).</li> <li>○ Leg extensions / abduction with bands or weights.</li> <li>○ Squats and wall slides – increase weight / one leg wall slide.</li> <li>○ Dead lifts – be careful with correct technique.</li> <li>○ Leg press – concentric work both legs, eccentric work operated leg only.</li> <li>○ Toe raises.</li> </ul> </li> <li>● <b>Stretching.</b></li> <li>● <b>Advanced perturbation training.</b></li> <li>● <b>Plyometric training: (Only if patient is pain free on these drills)</b> <ul style="list-style-type: none"> <li>○ Side / forward / back jumps over towel – 2 legged – progress to operated leg only when tolerated.</li> <li>○ Twist both legs (soft knee).</li> <li>○ Jump-ups sideways, 1 leg – onto step.</li> <li>○ Jump-ups forwards / backwards, 1 leg onto step.</li> <li>○ Skipping forwards 30m.</li> <li>○ Skipping with rope.</li> </ul> </li> </ul>
<p><b>Progression over the next 3 months:</b></p>	<ul style="list-style-type: none"> <li>● <b>Strength training:</b> <ul style="list-style-type: none"> <li>○ Squats and wall slides: <ul style="list-style-type: none"> <li>▪ Increase weight.</li> <li>▪ Squat with one leg – introduce weight when tolerated.</li> <li>▪ Variation squats, i.e. non-affected leg up on chair – squat with jump.</li> <li>▪ Squat on wobble board.</li> </ul> </li> <li>○ Leg press – increase to more explosive exercise.</li> <li>○ Hamstring curls prone / sitting / standing using machine – increase weight.</li> <li>○ Toe raises – increase weight.</li> <li>○ Dead lifts – increase weight.</li> <li>○ Lunges - progress to weight and reverse lunges.</li> </ul> </li> <li>● <b>Advanced perturbation training.</b></li> <li>● <b>Plyometric training:</b> <ul style="list-style-type: none"> <li>○ One leg sideways and forwards onto step, increase pace and step height.</li> <li>○ Plyometric jumps "Burpies".</li> <li>○ High jumps.</li> <li>○ Combination jumps.</li> </ul> </li> <li>● <b>Running:</b> <ul style="list-style-type: none"> <li>○ Circle.</li> <li>○ Skate and direction change: 4 to 5 months.</li> </ul> </li> </ul>



	<ul style="list-style-type: none"> <li>• <b>Sport specific drills.</b></li> <li>• <b>Agility drills, i.e. cones, figure-of-eight.</b></li> </ul>
<b>Cardiovascular Exercise:</b>	
<b>Stationary bike</b>	4 to 6 weeks.
<b>Treadmill</b>	Backwards at 3 weeks, and forwards at 8 weeks.
<b>Road bike</b>	16 to 20 weeks.
<b>Elliptical machine</b>	8 weeks.
<b>Swimming (crawl)</b>	12 weeks.
<b>Jogging in a straight line</b>	16 to 20 weeks.
<b>Running on an uneven surface</b>	6 to 7 months.
<b>Biokinetics</b>	4 months.
<b>Golf</b>	6 months.
<b>Cutting drills</b>	9 months.
<b>Contact sport</b>	9 to 12 months.



**Good luck with your rehabilitation.**

