



KNEE REHABILITATION PROGRAMME

Surgery Performed:

Date of Surgery:

Rehabilitation consists of:

- Daily exercises (done 2 to 3 times daily).
- Stretching (to be done daily).
- Strength training (3 / 4 times weekly) starting week 3.
- Balance exercise / Perturbation training.
- Plyometric exercise.
- Sport specific activity and drills.

Range of Motion Goals:

	1 to 2 weeks	3 to 4 weeks	5 to 6 weeks	6 to 12 weeks
Passive				
Active				

Weight Bearing:

	1 to 2 weeks	3 to 4 weeks	5 to 6 weeks	6 to 12 weeks
Touch WB				
Partial WB				
Full WB				

Brace:

	1 to 2 weeks	3 to 4 weeks	5 to 6 weeks	6 weeks and onwards
Range Setting				



Cardiovascular:

	1 to 2 weeks	2 to 4 weeks	4 to 6 weeks	6 to 12 weeks	12 to 16 weeks	16 weeks and onwards
Stationary bike						
Treadmill						
Road bike						
Elliptical machine						
Swimming (crawl)						
Jogging in a straight line						
Running on uneven surface						
Biokinetics						
Golf						
Contact sport						
Cutting drills						

<p>Phase I</p>	<ul style="list-style-type: none"> • Daily exercises: <ul style="list-style-type: none"> ○ Foot pump exercise. ○ Self-tightening quads. ○ VMO activation in prone lying (tummy lying). ○ SLR – back lying. Progress to long sitting. ○ Heel slide. ○ 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). <p>All exercises 3 x 8 to 15.</p>
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Phase II

- **Daily exercises:**
 - Self-tightening quads.
 - SLR – lying or sitting (add ankle weight if necessary).
 - VMO sitting on a chair.
 - VMO in long sitting.
 - Heel slide.
 - 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.
 - Knee open chain extensions (**range of movement = _____**)
 - **Stretching:**
 - Dynamic stretching, sciatic nerve.
 - Passive knee extension stretch ('torture pillow').
 - Stretching of hamstrings, quadriceps, calves and iliotibial band (use towel for quads if necessary).
 - **RICE.**
 - **Stationary bike (no resistance, _____ minutes daily).**
 - **Strength exercise:**
 - **Mat exercise -1:** Buttocks (gluteus maximus): Repeated bridge with feet firmly on the floor. Progress to bridge on heels.
 - **Mat exercise 1:** Strengthen buttocks: one leg pelvis lift (bridge) – repeat lifts.
 - **Mat exercise -2:** Hamstrings: Bridge and hold position “shift” feet back / forth 1 – 2 cm.
 - **Mat exercise 2:** Strengthen hamstrings: one leg pelvis lift (bridge) and hold for 15 seconds, progress to curling toes up and balancing on heel (week 5).
 - **Mat exercise 3:** Strengthen quads, hands on floor, one leg standing, knee flex (difficult exercise) – week 5 only.
 - **Hamstring exercise 1** in prone (inner to middle range only).
 - Step-ups – forward and side.
 - Squats - _____°.
 - Wall slide - _____°.
 - Toe raises.
 - 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.



Phase III

- **Stretching:**
 - Passive knee extension stretch.
 - Stretch hamstrings, quadriceps, iliotibial band and calves.
 - Dynamic knee stretch – sciatic nerve.
 - **RICE.**
 - **Stationary bike – increase duration and resistance as tolerated.**
 - **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). Progress to outer range.
 - Hamstring curls in standing position with theraband (TB). Progress through ranges.
 - Additional hamstring exercises – supine lying, pelvic lift using big gym ball, pull ball towards buttocks. Progress through range.
 - Leg extensions / leg abduction in standing (ankle weights if necessary).
 - Gluteus medius exercises:
 1. Side lying leg lifts (toes pointing upwards).
 2. Figure 4 in (lying / standing).
 3. 7 4 7 drill.
 4. One-leg squat “hand to floor”.
 - Squat – _____° to _____° as pain allows.
 - Wall slide – _____° to _____°.
 - Step-ups / Step-downs.
 - One leg squats off step.
 - Squats on incline board.
 - ‘Crab-walking’.
 - Toe raises.
 - Abduction / adduction (abd. / add.) machine at the gym.
 - Leg Press (**range of movement = _____**).
 - Knee extensions (**range of movement = _____**).
 - **Perturbation training:**
 - Advance exercises:
 - Skateboard.
 - One leg standing – flex trunk forward / back.
 - 7 4 7 drill.
 - **Trampoline work.**
- All exercises 3 x 15.**



<p>Phase IV</p>	<ul style="list-style-type: none"> • Daily stretching: <ul style="list-style-type: none"> ○ Stretch of quads, hamstrings, iliotibial band and calves. • Strength exercises: <ul style="list-style-type: none"> ○ Mat exercise 1++ 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 (add weights). ○ Leg extensions / abduction in standing (increase weight). ○ Leg press. Consult with your physiotherapist regarding range of movement for this exercise. (Range of movement = _____). ○ Toe raises. ○ Abduction / adduction machine. ○ Knee extensions (range of movement = _____). • Perturbation training: <ul style="list-style-type: none"> ○ 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.
<p>Phase V</p>	<ul style="list-style-type: none"> • Strength training 3 to 4 time weekly with physio and at gym: <ul style="list-style-type: none"> ○ 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 (range of movement = _____). ○ Toe raises. • Stretching. • Advanced perturbation training. • Plyometric training: (Only if patient is pain free on these exercises) <ul style="list-style-type: none"> ○ Side / forward / back jumps over towel – 2 legged – progress to operated leg only when tolerated. ○ Twist both legs (soft knee). ○ Jump-ups sideways, 1 leg – onto step. ○ Jump-ups forwards / backwards, 1 leg onto step. ○ Skipping forwards 30m. ○ Skipping with rope.



Phase VI

- **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.
- **Sport specific drills.**
- **Agility drills, i.e. cones, figure-of-eight.**



Good luck with your rehabilitation.

