

MPFL System Rehabilitation Programme

For Medial Patellofemoral Ligament Reconstruction

The patient should be warned not to exceed the prescribed activity levels or to overload the repair before complete healing has occurred.

Immediate post-operative care

- A cricket pad splint is applied in theatre and remains in place for two weeks.
- The patient usually stays in hospital overnight

Day 1-14

- Crutches, weight bearing as tolerated (discard when gait is normal) - teach reciprocal gait
- Weight transfers in standing
- Patellar mobilization (teach patient). To carry out every 3 hours
- Calf plantarflexion and dorsiflexion, 60 seconds every waking hour
- Passive extension with heel rolled towel for 5 minutes, every waking hour
- Isometric quads exercise; hold 8 seconds repeat x 10 every 4 hours
- Isometric glute exercise; hold 8 seconds x 10 every 4 hours
- Isometric hamstring exercise; hold 8 seconds x 10 every 4 hours
- Isometric abduction/adduction in inner, middle and outer range, hold 8 seconds x 10 every 4 hours
- Facilitate straight leg raise (SLR) every 2 hours
- Side lying abduction, x 10 every 4 hours
- Gentle hamstring stretching
- Gentle Ilio Tibial Band stretching
- Resistance band work for great toe flexion/extension, dorsiflexion/plantarflexion/inversion/eversion
- Prone lying hip extension, 10 x 8 second holds
- Abdominal isometric holds
- Full range of motion sound leg
- Ice pack after exercise, 20 minutes

Day 15 - 21

- The patient is seen in clinic at two weeks to discard the splint and to remove the stitches
- Continue patellar mobs
- Commence knee flexion exercises; heel slides in long sitting/sitting leg swings/passive flexion/active-assisted flexion/active flexion
- Soft tissue massage to quads, calf, ITB
- Scar massage with Vitamin E cream when scar healed
- Glute medius exercises, bent knee side lying. Work up to 30 repetitions
- Standing double leg calf raises work towards 30 repetitions
- Bilateral squats into flexion range; work towards 30 repetitions
- Unilateral balance - eyes open (30 seconds no touch down with opposite foot). Work towards eyes closed
- Commence standing resistance band inner range knee extension
- Carry out heel walking
- Carry out toe walking

Day 22-43 (6 weeks)

Splint Removed

- Practise walking backwards and sideways with support
- Commence step ups leading with non-operated leg x 20
- Continue with knee flexion range
- If wound satisfactory can commence pool work. Walking in pool with water at waist height; forward,

Day 15-43 (6 weeks) continued

- backwards, sideways, on tip toe. Squatting in water
- When knee flexion reaches 90° commence stat cycling with minimal resistance for range of movement 15 minutes, 4 x per day
 - Wall slides (supine) to increase knee flexion
 - Standing resistance band abduction/flexion/extension/adduction both legs
 - Bilateral bridge, 10 repetitions x 10 seconds
 - Front plank 60 seconds, 4 x per day
 - Side plank from knees 60 seconds left and right, 4 x per day
 - Practise sit - stand from chair x 10. Make sure weight is evenly distributed through both feet
 - High sitting knee swings into flexion and extension for mobility
 - High sitting knee extension to inner range towards week 6
 - Slider slump mobilization left and right 30 seconds, 4 x per day
 - Continue pool exercises with water at hip height
 - Femoral nerve slider mobilization 30 seconds 4 x per day
 - Crutches should be discarded when gait is even

Day 44-73 onwards

- Can commence use of rowing machine/stepper/cross trainer with low resistance
 - High sitting inner range hip flexion holds - maintain lumbar lordosis, 8 x 8 second holds
 - Once full range of knee flexion has been achieved then can commence with increased resistance on exercises
 - Standing lunges forward, keep knee over middle toe, 12 reps left and right
 - Free standing squats to 90° knee flexion without weight, 50 repetitions
 - Dead lifts supervised, 15 repetitions x 5 sets, 90 second rest between sets
 - Single leg calf raises, 15 repetitions x 5 sets, 90 second rest between sets
 - Ab/adduction machine 15 repetitions x 5 sets, 90 second rest between sets
 - Weighted step ups/leg press 15 repetitions x 5 sets, 90 second rest between sets
- **Leg extension machine to be avoided**
- Single leg balance on unstable surface with eyes open 30 seconds -> eyes closed 30 seconds

Day 44-73

- Continue to use bike to increase range of flexion (drop seat height as comfort improves)
- Unilateral bridges commence. Work towards 8 x 8 seconds
- Prone lying knee flexion, hip extension 8 x seconds, 4 x per day
- Step downs from 3 inch step - maintain alignment of hip, knee and ankle x 20 repetitions, left and right
- Swiss ball asymmetric squats, operated leg forward x 20 repetitions
- Chair sit to stand no hands, weight even, 20 repetitions
- Swiss ball assisted heel raises against wall, 20 repetitions
- Swiss ball hamstring roll out, 6 repetitions x 4 sets
- Swiss ball bilateral bridges, 10 repetitions x 4 sets
- Bird dog, 8 repetitions x 8 second holds x 4 sets

Day 73 (week 12) onwards

- Supported bilateral jumps
- Progression:
- Bilateral vertical jumps with support. Work towards 3 x 20 repetitions
 - Bilateral bounds, small amplitude, concentrate on quiet, controlled landing. Work towards 3 x 20 repetitions
 - Progress to unilateral hops for height, quiet, controlled landing. Work towards 3 x 30 repetitions
 - Progress to tuck jumps. Work towards 3 x 30 repetitions
 - Left right unilateral hops for distance, controlled landing. Begin with short distance and "stick" landing. Jump left and right. Work towards 3 x 30 repetitions
 - Symmetry unilateral lateral hops for distance, control, and "stick" landing. Jump left and right. Work towards 3 x 30 repetitions
 - Functional test - triple hop. Repeat x 3. Distance must be similar left and right
 - Commence function training
 - Test isokinetic strength; H:Q ratio should be at least 75%. Less than 10% difference between quads strength left and right

This rehabilitation programme was developed in conjunction with Ian Horsley MSc, MCSP, Clinical Lead Physiotherapist, English Institute of Sport (EIS) North West, of BackinAction Physiotherapy and Sports Injury Clinic, Wakefield, UK.

Neoligaments™

A division of Xiros™, Springfield House, Whitehouse Lane, Leeds, LS19 7UE, UK

Tel. +44(0)113 238 7202 Fax. +44(0)113 238 7201 enquiries@neoligaments.com www.neoligaments.com

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