

Post Meniscal Root Repair or Complex Meniscal Repair Rehabilitation Guidelines

Reference: 2003v1
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Purpose

To guide rehabilitation following Complex Meniscal repair or root repair

Intended Audience

Orthopaedic surgeons and physiotherapists

Post Meniscal repair rehabilitation protocol

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1. Introduction

Guidelines for therapists involved in the rehabilitation of patients post meniscal root repair

2. Intended Audience

Orthopaedic surgeons and physiotherapists.

3. Guideline Content

Post Meniscal root repair Rehabilitation Guidelines

Rehabilitation guidelines for meniscal root repair only

The information given below is a guideline of the appropriate management for rehabilitation following meniscal root repair.

The essence is to protect the repair during all phases with a graduated exposure to increasing loads

It is your responsibility to evaluate each individual patient's problems and clinical reasoning must be applied to inform decisions on progression, rather than timescale alone. Use professional judgment as patients progress. Even if an exercise or activity is listed at a particular time frame, some patients may not be ready to perform it.

Early return to high level activity runs a definite risk of re-injury.

Patients heal at different rates and rehab needs to be delayed or adjusted accordingly.

The key to a successful outcome is a phased rehabilitation with criteria based progression not time dependent progression. The time frames given are guidelines and should serve as MINIMUM times before any progression is evaluated

If at any times you have concerns regarding a patient's progression or lack thereof or any symptomatic changes please confer with a senior clinician or contact us at the Sheffield Children's hospital.

Post Meniscal repair rehabilitation protocol

Possible problem	Action
Uncontrolled pain (>3/10 VAS)	<input type="checkbox"/> Regular analgesia <input type="checkbox"/> Ice & elevation <input type="checkbox"/> Protected weight bearing <input type="checkbox"/> Modification of activity level
Excessive swelling (>2cm side to side difference sup patella level)	<input type="checkbox"/> Ice & elevation <input type="checkbox"/> Protected weight bearing <input type="checkbox"/> Modification of activity level <input type="checkbox"/> Decrease number of exercises <input type="checkbox"/> Sudden/acute changes should be referred to Surgeon urgently
Unable to regain passive knee extension (should be full by ~ 4 weeks)	<input type="checkbox"/> GAPS / Prone hangs <input type="checkbox"/> Hamstring and gastroc stretches <input type="checkbox"/> Static quads contractions (+/- electrical stim) <input type="checkbox"/> Control knee swelling <input type="checkbox"/> MWMs
Poor quadriceps contraction / weakness	<input type="checkbox"/> Control knee swelling <input type="checkbox"/> Control pain <input type="checkbox"/> Compliance with exercise <input type="checkbox"/> Static quads contractions (+/- electrical stim)
Anterior Knee Pain	<input type="checkbox"/> Control knee swelling <input type="checkbox"/> Address muscle length (esp rec fem) <input type="checkbox"/> Taping / PFJ mobs <input type="checkbox"/> Alignment assessment
Patient complains of "giving way"	<input type="checkbox"/> Early stages this can be due to quads weakness (hyperextension) <input type="checkbox"/> Refer back to clinic / not resolving

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PHASE 1 (post-op weeks 0 to 6) (NWB for 6/52)**Goals**

1. Pain control (VAS <3/10)
2. Swelling controlled (<2cm difference at superopatella level)
3. Good gait pattern NWB crutches
 - a. consider locking brace in full extension for mobilisation – esp. If poor quads control
4. ROM brace limited 0-30° (Initially to limit hamstring contractions) – work to 90° from 2/52 onwards
5. Avoid as far as possible any hamstring contraction in the first six weeks
6. Good static quads contraction

Restrictions:

1. No flexion beyond 90°
2. No deep heavy loaded flexion (**Until 6/12 post op**)
3. **NWB** - TWB may be considered if patient struggles to mobilise

ROM

1. Gravity Assisted Passive Stretch (GAPS) to increase extension
2. Stretches (gastroc. / soleus / hamstring / quadriceps)
3. Patella mobilizations inferior and superior,
4. Heel slides - AAROM

Treatment**Strength:**

1. Quad sets (SQC, SLR, IRQ)
2. Active assisted ROM heel slides (knee reeducation),
3. Static glutes/prone work - hips
4. Open chain hip maintenance exercises
5. Calf stretches
6. Thomas test stretches (rectus femoris, hip flexors)
7. Calf raises (seated)
8. Mini squats (Contralateral limb)
9. **Care with Hamstring strengthening due to its attachment to the posterior portion of the meniscus**, therefore, resistive hamstring activity should be avoided for 6 weeks post-op.
10. Static Bike may be considered if patient is PWB but **only on elliptical machine** with altered knee angle
11. As weight bearing changes **wean** from crutches

Balance

1. Gym ball compressions in lying and sitting

Modalities

1. Electrical stimulation of quadriceps (if available)
2. Ice pack

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Progression to phase 2

1. Minimal/no effusion (likely to vary as weight bearing status changes),
2. Normal knee temperature,
3. Ability to SLR

Closed kinetic chain (CKC) exercises are progressed slowly with range of motion progressed as described so as to protect the posterior root from both compressive and shear loads, which will increase steadily throughout rehab.

Phase 2 Post Op weeks 6-10**Goals**

1. ROM
 - a. Full extension
 - b. Flexion to 90°
2. Good Gait pattern
3. Good quads activation
4. SLR with no lag
5. Swelling controlled (<1cm difference at superopatella level)
6. Improve hip control and strength
7. Brace off (given sufficient quads and glutes control)

Restrictions:

1. No deep flexion
2. No loaded flexion beyond 60 °

Treatment**Strength**

1. Limited arc closed chain strengthening (**max 40 ° at week 6 to 90° at week 20**)
2. Step ups
3. Step downs
4. Side stepping
5. OCK extension exercises (**NOT Flexion**)
6. Early Isometric hamstring work

Balance

1. Proprioceptive exercises (e.g. rocker board working toward wobble board then on to single leg stance)
2. Hurdle/cone stepovers
3. Wobble board STS
4. Walking pace ladder and cone drills
5. Gym ball compressions in lying and sitting and off a step using handrails

Cardiovascular

1. Static bike (elliptical machine with knee angle to 40° Max then progressing to 90° at week 20)
2. Treadmill walking

Modalities

1. Electrical stimulation of quadriceps
2. Ice pack

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Criteria for progressing to phase 3:

1. No Swelling
2. FWB with normal gait pattern on flat surfaces, able to tolerate 25 mins standing/walking
3. Able to maintain terminal knee extension on single leg
4. Quads 85% of uninjured side

Phase 3 Post Op weeks 11-16**Goals**

1. FROM
2. Good Gait pattern
3. Good quads activation
4. Swelling controlled (may vary during rehab sessions as footfall increases)
5. High level proprioceptive work

Restrictions

1. Limit CKC <70° progressing from double to single leg (endurance based)
2. From 12 weeks if sufficient quads control is seen: static bike (may require elliptical pedal set with light resistance, elliptical trainer, treadmill walk, front crawl swimming)

Treatment**ROM**

1. Stretches (gastroc / soleus / hamstring / quadriceps)

Strength

1. Leg press 70 - 0° (gradually progressing range of motion)
2. Knee extension with resistance
3. Multi hip machine
4. Bridging
5. CKC exercises may include double-leg press, single-leg press, wall squat, squat, single leg squat, Bulgarian squat (note operated leg range limitations!)
6. Straight double leg Romanian deadlift progressing to single leg,
7. Back extension machine double and single leg, straight leg
8. 45-degree knee bent bridging (on bench then progress to gym ball).

Cardiovascular

1. Static bike
2. Swimming (straight leg kicking only, no breast stroke)

Balance

1. Wobble board 2 leg
2. Single leg balance work
3. Trampet marching
4. Sit to stand on wobble board

Modalities

1. Ice pack

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Criteria for progressing to phase 4:

1. Sustained holds in single leg squat at 45° knee flexion.
2. Single leg mini squats showing good knee hip control (minimal medial drift)
3. Good quads/glutes control
4. Symmetrical NWB proprioception drills

Phase 4: 16 – 22 Weeks**Goals**

1. No Swelling (post exercise session > 60 footfalls)
2. Regain muscular strength
3. Early NMT work
4. Higher level proprioceptive work (progress towards dynamic work)
5. Early plyometric work/landing mechanics
6. Commence running preparation drills (*see return to run criteria)

Restrictions

1. Commence OKC isotonic and isokinetic hamstrings exercises
2. Limit CKC <90° until 20 weeks
3. Progress CKC from double to single leg (strength training)

ROM

1. Stretches (gastroc / soleus / hamstring / quadriceps)

Strength

1. Leg press 90 - 0° (gradually progressing range of motion from 20 weeks onwards)
2. Knee extension with resistance
3. Multi hip machine
4. Bridging
 - a. Gym ball bridging
 - b. Single leg bridging and quadruped drills
5. Nordic hamstring (not quads – until post 20 weeks)
6. Single-leg leg curl (up to 90 degrees), double leg Swiss-ball curl (up to 90 degrees)
7. Bridges with knee bent to 90 degrees.

Cardiovascular

1. Static bike
2. Swimming (straight leg kicking only, no breast stroke)
3. From 20 weeks I sufficient control running work – focus on accel and decel phases

Balance

1. Wobble board progress to single leg
2. Single leg balance work
3. Trampet work
4. Sit to stand on wobble board (progress to single leg work)
5. Early hopping drills
6. Low speed C.O.D. work

Modalities

1. Ice pack

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Criteria for progressing to phase 5:

1. Hop index >80%
2. LSI >80%
3. >20 single leg sit to stand

Phase 5 - Final Phase 22 weeks+ - Return to sports specific drills**Final Restrictions**

1. ROM in heavily loaded CKC work remains limited to 90 degrees until six months post-op, it can be progressed (loaded) over the following six months. This should not need to be under therapist guidance. The aim is for the patient to return to full competition, however if their chosen sport involves heavy squats past 90 degrees then guiding them to understand that this progression to full range by one year post-operative is a steady one, should be sufficient

General Observations:

1. No swelling,
2. Pain free ROM,
3. Stable joint on testing
4. ROM full

Goals:

1. ROM full
2. No patellofemoral symptoms
3. Hop index >at least 95%
4. Lysholm score >95%, IKDC 85%
5. Isokinetic evaluation if available
6. Limb Symmetry index evaluation – (potential D/C to sport criteria LSI 110%)
7. Return to previous activity

Treatment

1. Graduated running programme
2. Double and single leg landing and jumping
3. Plyometrics
4. Agility drills gradual return to normal pace
5. May commence pivoting and cutting gradual increase in speed
6. Early football drills
7. Running on treadmill
8. Rower / stepper / Cross Trainer
9. Treadmill running progressing to sprint drills (consider an incline to maintain knee cushioning)
10. May commence early contact drills
11. Skills training

Any deviation from the guideline should be clearly documented along with any reasons for so doing

Potential Algorithm for assessment

Assess contralateral limb early post injury

Commence prehabilitation

Consider early assessment of LSI around 20/52 post op – (compare to pre-op contralateral limb results)

Final screen LSI potentially at 6/12 post op to inform return to sport

References

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