RJAH Meniscal Root Repair Rehab Guide

Patient Details: **Co-morbidtity:**

Note to Therapist: **This is a timeline and criteria base guide to rehab, not an exhaustive list of rehabilitation and does not replace clinical reasoning.*
**Treat any soft tissue symptoms on their merit.*
**Objective Tests can be used as an indication for progression. The examples provided can be deleted or supplemented based on the individual's aims and goals.*
****Special Instruction(s) includes specific post-operative advice for the individual patient based on the Consultant's recommendation(s). This will be completed on discharge or follow-up clinic appointments**.*

PHASE OF REHABILIATION	IDEAL CRITERIA	REHABILITATION GUIDE	GOALS	OBJECTIVE TEST	SPECIAL INSTRUCTION
PHASE 1 **From Day 1**	○ Successful operative outcome ○ Adequate pain relief. ○ Understands post-op instructions.	• Ice/ Cryocuff/ Game Ready or eqivelant. • NWB until week 6. • Brace limiting AROM 0˚ - 90˚ day and night. Removed washing. • Limit PROM 0˚ - 90˚. • EOR E mobilisations. • H and calf stretches. • Ankle Exercises. • SQ progressing to SLR. • Wall heel slides. • Abductor/ Adductor/ Gluteal exercises. • Isometric Q and H. • Co-contraction Q and H.	1. Protect the repair. 2. Reduce effusion. 3. Gain terminal E. 4. Promote distal circulation. 5. Gradually restore ROM. 6. Increase confidence.		**BEFORE DISCHARGE check the op note for any specific post-op instructions and amend the guide accordingly.**

PHASE OF REHABILIATION	IDEAL CRITERIA	REHABILITATION GUIDE	GOALS	OBJECTIVE TEST	SPECIAL INSTRUCTION
PHASE 2 **From Week 1**	○ Full active and passive E. ○ ≥45º F	• Bridges (aim for ideal alignment and control). • **Contralateral limb strength training 3x per week (continue for 10 weeks) Leg Press, Leg Curl & Leg Ext 3 x 5RM.**	1. Aid joint nutrition. 2. Prevent adhesions. 3. Increase ROM.	AROM. PROM. SLR.	
PHASE 3 **From Week 2**		• Progress PROM as symptoms dictate. • Brace 0˚ - 90˚ only when mobilising. • Prone gentle auto-over press F → develop into Q stretch. • Progressive PWB			
PHASE 4 **From Week 6** **[Cont. page 3]**	○ SLR no lag AROM = Full E - ≥100º	• Remove brace. • Independent FWB gait re-education • Lunges ≤90°F (aim for ideal neuromuscular control) • PWB (parallel bars, deep water or AntiG) jumps, hops, leaps → control technique/speed/reps • Proprioception → single leg stance/wobble boards/Trampette/crash mats/etc. • Core stability exercises as appropriate • Flexibility exercises as appropriate • Static Bike or Turbotrainer no resistance as tolerated.	**1.** Progress functional activities. **2.** Prevent AKP. **3.** Prevent scar adherence. **4.** Prevent joint stiffness. **5.** Restore normal gait pattern. **6.** Promote appropriate muscle strength, power and endurance.	AROM. PROM. Single Leg Stance. Clam. Planks.	

PHASE 4

From Week 6

[Cont. from page 2]

- Rowing no resistance as tolerated.
- X-Trainer no resistance as tolerated.
- Hydrotherapy (AVOID breaststroke leg kick until Week 12)
- Limit full body weight+ CKC exercises (e.g. squats, lunges, leg press) ≤90°F *until Month 3+*

Sequence Training

- Train strength and endurance 3 – 4 x per week.
- Train strength and endurance on separate days.
- Have a minimum of 24 hours between strength days.
- Strength:
- *See appendix; Pages 9 – 10*
  Adjust if necessary based on symptoms.
- Hypertophy:
  See appendix; Pages 9 – 10
  Adjust if necessary based on symptoms.
- Endurance:
- Gradually progress toward ≥45 min continuous CV exercise (exception of jogging/running until month 4+).
  See appendix; Pages 9 – 10

7. Improve neuromuscular/ proprioception/ sensorimotor performance.
8. Maintain cardiovascular fitness.
   Encourage patient compliance.

PHASE OF REHABILIATION	IDEAL CRITERIA	REHABILITATION GUIDE	GOALS	OBJECTIVE TEST	SPECIAL INSTRUCTION
PHASE 5 **From Month 4+**	○ Normal symmetrical gait ○ AROM = Full E - ≥100º ○ Single leg stance ≥80% parity ○ Clams 10 reps with 10 sec hold ideal control [L] & [R] ○ Directional Planks 30 sec hold ideal control	• Through range double leg and single leg CKC exercises (e.g. squats/ leg press), progress range, volume and intensity as symptoms allow. • Add speed exercises, e.g. prone heel flicks, trampette high knees and heel flicks. • Gradually progress from PWB to FWB and double footed to single footed landing drills and plyometrics, as dictated by neuromuscular control, pain and swelling. • Rotational step-ups. • Introduce low volume walk-jog when strength, neuromuscular control, pain and swelling is adequate.	1. Promote appropriate strength, power and endurance based on individual's needs. 2. Improve neuromuscular performance. 3. Increase confidence.	AROM. PROM. Single Leg Squat 60º. 5 RM. Effusion. Rotatory Stability. Single Leg Bench Bridge. Vertical Jump. Landing Drills. Single Leg Sit → Stand. IKDC	

PHASE OF REHABILIATION	IDEAL CRITERIA	REHABILITATION GUIDE	GOALS	OBJECTIVE TEST	SPECIAL INSTRUCTION
PHASE 6 **From Month 5+**	○ No/ minimal effusion ○ No/ minimal pain ○ Full pain free AROM ○ Single Leg Squat 60º 5 sec hold with good alignment. ○ 5 RM >80% parity. ○ [L] & [R] Rotational Stability ≥80% parity. ○ Single Leg Bench Bridge 20 reps with ideal control. ○ Single Leg Sit → Stand 10 reps. ○ Ideal landing control > 6 reps. ○ IKDC score ≥ 64 prior to introducing running.	• Continue to progress strength training. • Progress jog → run → sprint. • Add predictable agility drills when sufficient control and confidence is achieved e.g. twist/turn/pivot/cut/accelerate/decelerate/direction. • Advance dynamic proprioceptive exercises e.g. volleying football, throwing, catching, racket and ball while balancing on trampette. • Perturbation training e.g. therapist randomly nudges patient off balance during a single leg throw-catch drill. • Sport specific training → terrain/volume/periodisation.	1. Sport specific function. 2. Prepare neuromuscular and psychological ability to return to unrestricted function.	5 RM. Hop Test Battery. Y Balance. Vertical Jump. Vail Sport Test Patient Reported Outcome Scores. As indicated for individuals goals.	

PHASE OF REHABILIATION	IDEAL CRITERIA	REHABILITATION GUIDE	GOALS	OBJECTIVE TEST	SPECIAL INSTRUCTION
PHASE 7 **From Month 6+**	All objective tests 80% - 90% parity.	• Add unpredictable agility drills and sport specific training. • Squat depth, dictated by control and symptoms.	1. Unrestricted confident function. 2. Injury prevention.	As Phase 6.	
PHASE 8 **From Month 7+**	○ All Tests > 90% parity. ○ IKDC ≥ 88 **Dependent on Consultant's approval.**	• Earliest return to contact sport training • Progress to full restriction free sports and activities.		Full sporting function.	

Terminology Key:

E	Extension	**PWB**	Partial Weight Bear
F	Flexion	**FWB**	Full Weight Bear
EOR	End of Range	**ROM**	Range of Movement
IRQ	Inner Range Quadriceps	**AROM**	Active Range of Movement
SLR	Straight Leg Raise	**PROM**	Passive Range of Movement
Q	Quadriceps	**OKC**	Open Kinetic Chain
H	Hamstrings	**CKC**	Closed Kinetic Chain
AKP	Anterior Knee Pain	**resis**	Resistance
[L]	Left	**reps**	Repetitions
[R]	Right	**RM**	Repetition Maximum
PFJ	Patellofemoral Joint	**CV**	Cardiovascular
MDT	Multidisciplinary Team	**RTS**	Return to Sport
IKDC	International Knee Documentation Committee – outcome score		

Summary of Post-Operative Restrictions/ Progressions (unless stated otherwise in post-op note):

Activity	Dictated by **sufficient neuromuscular control** and time from surgery.
ROM Brace range 0* – 90* at rest and when mobilising	0 – 2 Weeks.
ROM Brace range 0* – 90* only when mobilising	2 – 6 Weeks.
NWB.	0 – 2 Weeks.
Progressive TWB → PWB	2 – 6 Weeks.
FWB.	From 6 Weeks.
CKC Squats and Lunges ≥90*.	From 3+ Months.
Breaststroke Leg Kick.	From 4+ Months.
Gradually introduce high impact.	From 4+ Months.
Return to full contact sports.	From 7 Months, dependent on specific RTS criteria and MDT opinion.

Appendix:

Patient Education.

A **repetition maximum** (RM) is the most weight you **can** lift, push, press or curl for a defined number of exercise movements. For example, a 5RM would be the heaviest weight you could lift for 5 consecutive repetitions. What will dictate your RM is muscle fatigue/ weakness, or you are experiencing pain more than 2-3/10 above your normal baseline (10 = worst pain imaginable, 0 = no pain at all), or you are losing technique/ form.

1 – 5 RM will improve Muscle Strength

6 – 10 RM will improve Muscle Hypertrophy

11 – 15+ will improve Muscle Endurance

Sets are is a series of reps of an exercise done in sequence (usually with a rest between). For example, 3 x 5 RM would be an exercise you can perform a maximum of 5 consecutive times (see **repetition maximum**), rest and then repeat twice more. Perform ***a minimum*** **of two sets** for each exercise.

Progress:

As you progress and the loads you are lifting are getting easier, but not easy enough to increase the weight, increase the volume. For example if you are lifting 5RM for 3 Sets, increase the number of sets. When this starts to feel easier reduce the number of sets and try increasing the weight to ensure you remain in the specific training zone for you.

Recommended Rest times between sets:

1 – 5 RM, 2 min. rest between sets.

6 – 10 RM, 1 min. rest between sets.

11 – 15 RM, 40 sec. rest between sets.

Particularly when you have 2 mins between sets, you might choose to save time and increase your workout intensity by performing a **Superset.** This can be a combination of two or three different exercises that work opposing muscle groups, or upper and lower body, or left and right limbs, and the exercises are done back to back with no rest in between. For example you may choose to switch between the leg press and the chest press. Working on the chest press during the 2 min. rest on the leg press and vice versa.

Single Leg and or Arm exercises will give you an indication of the strength differences between your limbs. It also means the weaker limb cannot be assisted by the stronger limb. If you are performing single limb exercises, make sure the RM is specific for each limb. Remember strengthening your non-injured side will limit the deconditioning of your injured side.

Circuits are a collection of exercise sets you repeat without a rest. A rest will be recommended between circuits rounds.

CV Endurance and Strength training don't mix. If you want to progress your CV work to more than a 20 min moderate session, don't do this in the same session that you strength train. The benefits of the two exercises counteract with each other, meaning you will not strengthen as quickly. If you want to progress you CV do so on a separate day.