Post-Surgical Meniscal Repair Rehabilitation

Saint Louis University – SSM Health Physical Therapy Orthopedic Residency
in Collaboration with
Christopher Kim, MD & Scott Kaar, MD

Physician Referral for Physical Therapy for:

Patient Name: **Date:**

Referring DX: Meniscal Tear (medial / lateral)

Recommended Frequency: 1 – 3 visits/ wk

Total Duration: 4 months

SLUCare Physician Group

These guidelines, treatments, and milestones have been established to assist in guiding rehabilitation based on the most current available evidence. They are not intended to be substitute for sound clinical judgement with consideration of the individual contextual features of the patient and the demands of various functions/sports.

Recommendations	Precautions:*	The following factors may affect prognosis
• When implementing the below guidelines for rehabilitation of meniscal repairs with concomitant procedures, consider the following: ○ With ACL reconstruction: ✓ Promote protection of the ACL graft by limiting excessive anterior tibial translation ○ With ACL and MCL repair: ✓ Limit excessive anterior tibial translation and avoid valgus stress ○ With PCL reconstruction: ✓ Avoid aggressive posterior tibial translation • Use of the Soreness Rules[6] when determining exercise progression	• No loaded knee flexion beyond 45° until week 5[1-3] • No loaded knee flexion beyond 90° until week 8 • No forced knee hyperextension if anterior horn repair • No forced knee flexion if posterior horn repair • Avoid OKC exercise from 0-30° and CKC exercise from 90-120° if patient shows signs/symptoms of patellofemoral irritation[4,5]	• Shorter meniscus healing time if concomitant cruciate repair[7,8] • Biopsychosocial factors such as pain catastrophizing, fear-avoidance behavior, and exercise self-efficacy

Please respond to our anonymous survey regarding these guidelines to assist in improving patient care and advocacy. https://slu.az1.qualtrics.com/jfe/form/SV_bpX7Z9AaVTzGblj

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Timeline	Milestones	Treatment Recommendations
Week 1-2 (Day 0-14)	Active full knee extension AROM flexion to 90°	Amb WBAT knee brace locked 0° Supervised loaded flexion between 0-45° Core stabilization Hip strengthening Patellar mobilizations NMES as needed[9]
Weeks 3-4 (Day 15-28)	AROM 0-120° Full scar mobility Patellar mobility WNL Zero to trace effusion (Stroke Test[10])	Amb WBAT knee brace locked 0° Gait training Alter-G Treadmill Core stabilization Hip strengthening Stair progression
Weeks 5-7 (Day 29-49)	AROM to WNL Normal gait No Effusion ≤ 2 errors on SL Squat[11,12] 5xSTS ≤ 1 SD of norms[13]	WBAT Loaded flexion between 0-90° Gait training SL motor control CKC Core stabilization Hip strengthening
Weeks 8-11 (Day 50-77)	≤ 1 errors on SL Squat Mod SEBT symmetry ≤ 4cm[14]	Loaded flexion > 90° Running progression Strength and conditioning CKC Core stabilization Hip strengthening
Weeks 12-Return-to-sport	Hop tests symmetry > 90%[15] Zero errors on SL Squat Acute-to-chronic workload ratio < 1.5[16-18]	Functional hop tests Sport-specific drills Agility drills CKC Core stabilization Hip strengthening

Abbreviations: SL = single limb; CKC = closed kinetic chain; SD = standard deviation; Mod SEBT = modified Star Excursion Balance Test

For questions regarding the patient's medical care, new orders, or insurance questions: **Dr. Kaar's patients** should contact Meghan at 314-977-6000 or meghan.gehrs@health.slu.edu. **Dr. Kim's patients** should contact Julia (clinical nurse specialist) at 314-577-8524 or julia.santiago@health.slu.edu.	For **additional questions, comments, or concerns regarding the implementation of these physical therapy guidelines**, please contact Chris Sebelski, PT, DPT, PhD, OCS, Director of the SLU – SSM Health Physical Therapy Residency 314 977 8724 OR chris.sebelski@health.slu.edu

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Tests/Measures:

- Soreness Rules[6]

Criterion	Action
1. Soreness during warm-up that continues	2 days off, drop down 1 step
2. Soreness during warm-up that goes away	Stay at step that led to soreness
3. Soreness during warm-up that goes away and redevelops during session	2 days off, drop down 1 step
4. Soreness the day after lifting (not muscle soreness)	1 day off, do not advance program to the next step
5. No soreness	Advance 1 step per week or as instructed by healthcare professional

- Single Leg Squat[11,12]

Movement Impairment	
Midfoot collapse	Early heel rise
Femoral adduction, IR	Pelvic drop
Poor control of knee when rising up	Excessive trunk flexion or knee extension on rising up

* Table adapted from Liebenson 2002 in Bailey et al 2010

- 5xSTS Normative Values[13]

Age (n)	Mean ± SD (95%CI)	Min-Max
14–19 (25)	6.5 ± 1.2 (6.0–7.0	4.7-9.7
20-29 (36)	6.0 ± 1.4 (5.6–6.5)	3.9–11.2
30–39 (22)	6.1 ± 1.4 (5.5–6.8)	4.1–10.4
40–49 (15)	7.6 ± 1.8 (6.6–8.6)	5.6–13.2
50–59 (20)	7.7 ± 2.6 (6.5–8.9)	4.2–12.1
60–69 (25)	7.8 ± 2.4 (6.8–8.7)	4.7–15.1
70–79 (24)	9.3 ± 2.1 (8.4–10.1)	5.5–13.3
80–85 (14)	10.8 ± 2.6 (9.3–12.3)	5.8–17.6

- Return to sport dosing should consider Acute-to-chronic workload[16-18]
    - Each session calculated by multiplying RPE (0-10) by duration (minutes) to obtain workload (augmented units). For example, *RPE of 6 x 60 minutes = workload of 360 AUs.*
    - Acute workload = average workload over the course of 1 week
    - Chronic workload = average workload over course of 4 weeks

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