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Rehabilitation after Meniscal Repair

DISCLAIMER: The following Physical Therapy protocol is intended to be utilized by the clinician as a guideline in the treatment of this disorder. It is based on current research and has been formulated as a collaborative effort between Physicians and Physical Therapists. It is not intended to serve as a substitute for sound clinical decision making. Every patient is a unique case, and it should be anticipated that not all patients will fit into the timelines set forth in this protocol. If the Physical Therapist has any questions regarding the course of treatment, the referring physician should be contacted for further guidance.

Phase I: Immediate Postoperative Phase (Weeks 1-4)

Restrictions:

- WBAT with brace locked in full extension with crutches. D/C crutches when patient is FWB in locked knee brace and ambulating safely and confidently.
 - Unless radial tear, in which case TTWB x 6 weeks due to poor healing potential
- Knee brace is worn at all times **locked in full extension** including during ambulation and sleeping. The only times that the brace may be removed are during therapeutic exercises (except as noted in exercise section), while bathing (seated), and while seated.
- Range of motion (ROM) is limited to 0°-90° for 4 weeks
- **No hamstring strengthening** for the first 6 weeks following a **posterior horn** repair

| GOALS | TREATMENT |
|--------------------------------|---|
| Achieved mobile incisions | Scar Mobilization |
| Decrease effusion/pain | Ice, compression, elevation. Electrical stimulation for effusion |
| Normalize patellar mobility | Patellar mobilizations |
| Restore full extension | Patient education, quad sets |
| Initiate flexibility exercises | Hamstring & gastroc stretches |
| Achieve 90° flexion | AAROM in brace unlocked to 90° CPM 2 hours twice per day; increase ROM as tolerated until 0°-90° is achieved; then discharge |
| Active quadriceps | NMES with quad sets |

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| Initiate strengthening (in brace until quad set is adequate to prevent extension lag) | Quadriceps isometrics Hamstring isometrics, progress to active HS curl 0°-90° (unless posterior horn meniscal or hamstrings autograph repair) Hip adduction isometrics, progress to side lying leg raise* Hip abduction isometrics, progress to side lying leg raise* Hip extension SLR (when prone lying is comfortable)* Hip flexion/knee extension (SLR)* Initiate heel walking at 3-4 weeks |
| Achieve FWB in brace locked to 0° | Progressive weight bearing (B/L) to (U) |
| Cardiovascular/General exercises | Upper body & core strengthening program Upper body ergometry aerobic program |

Clinical Milestones:

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|------------------------|--|
| 1+ effusion | Good quadriceps set (no extension lag) |
| Good patellar mobility | Pain-free at rest |
| AROM 0-70° | Full weight bearing |

Phase II: Intermediate Postoperative Phase (Weeks 5-6)

Meniscal Repair Restrictions (Primary):

- WBAT with brace limited to 120° with crutches
- Avoid patellar pain

| GOALS | TREATMENT |
|--|--|
| Control effusion/pain | Continue previous activities |
| Maintain patellar mobility, avoid pain | Continue previous activities Add patellar taping prn |
| Maintain full extension | Continue previous activities |
| Achieved 120° flexion | Continue previous activities Initiate cycling in brace for ROM (NO MORE THAN 90°) |
| Activate quadriceps | Continue NMES, biofeedback |
| Progress strengthening | Continue previous exercises (SLR in 4 planes, quad sets). Initiate hamstring curls to 90°, long arc quads (LAQ) 90°-45° Initiate closed chain exercises to include: <ul style="list-style-type: none"> • Heel raises • TKE • Bilateral mini squats from 0°-40° and progressing flexion ROM to 80° and resistance as tolerated • Step ups within 0°-90° limitations |
| | Note: PRE's are allowed within ROM restrictions and patient tolerance |
| Ambulate safely with brace open from 0°-120° | Gait training Treadmill |

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| Initiate proprioception activities | Upper extremity reaches |
| Maintain cardiovascular fitness | Upper body exercise |

Clinical Milestones: FWB Normal gait
 AROM 0°-120° Good quadriceps recruitment
 Straight leg raise without lag Normal patellar mobility

Phase III: Advanced Strengthening Phase (Weeks 6-10)

Restrictions: Avoid pivoting
 Flexion to 130°
 No squatting or deep knee bends

| GOALS | TREATMENT |
|---|--|
| Control effusion/pain | Continue previous activities |
| Maintain full extension | Continue previous activities |
| Normalize knee ROM | Continue previous activities progressing to 130° flexion Cycling through full ROM |
| Activate quadriceps | Continue NMES, biofeedback |
| Progress Strengthening | Continue previous exercises (SLR in 4 planes, quad sets). Progress hamstring strengthening Progress LAQ to 90°-25° at 8 weeks Progress closed chain exercises to include: <ul style="list-style-type: none"> • Progress B/L mini-squats from 0° to 40° to unilateral mini-squats • Progress B/L leg press to unilateral as tolerated • Progress B/L leg press from 40° knee flexion to 80° • Initiate B/L leg press double leg hops progress to single leg hop • Progress step up height, initiate lateral step ups and step downs • Initiate isokinetics Initiate swimming Note: PRE's are allowed within ROM restrictions and patient tolerance |
| Ambulate safely without brace | Gait Training Treadmill |
| Progress proprioception activities & agility drills | Balance in single leg stance (SLS), balance star taps Lateral shuffles |

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| Maintain cardiovascular fitness | Endurance exercises including Stair Master, cycling, elliptical, NordicTrack |
|---------------------------------|--|

Clinical Milestones: Improved stability with unilateral stance Minimal to no pain
Achieve full ROM Equal hip strength bilaterally
Isokinetic quadriceps strength <20% decreased vs contralateral

Phase IV: Return to Activity Phase (Weeks 11-16)

Restrictions: Avoid hyperflexion
NO sports for 4-6 months

| GOALS | TREATMENT |
|--|--|
| Manage pain/edema | Continue previous activities prn |
| Maintain full ROM & flexibility | Continue previous activities prn |
| Normalize strength, power & endurance | Progress strengthening and endurance exercises with focus on functional and return to skill activities |
| Progress proprioception activities | Progress agility drills and initiate plyometric training |
| Prepare for return to full unrestricted activities | Initiate running/cutting programs Initiate sport specific skills including cutting program as appropriate |