

Meniscal Repair Protocol

This protocol is not appropriate for neither radial tears nor root repairs – please see specific protocols for these.

MENISCAL REPAIR PROTOCOL – PHASE 1

NB: this protocol is NOT appropriate for the repair of radial or meniscal root tears.

Monitor for evidence of:

Infection: if patient develops a temperature $>38^{\circ}$, refer urgently to the operating surgeon. If the surgeon is unavailable, advise patient to attend A&E to exclude wound infection or septic arthritis
Distal neurovascular deficit (including deep vein thrombosis)

Goals:

- **Protect meniscal repair**
- **Control pain and swelling/effusion**
- **Preserve/restore ROM; a brace may be provided to limit knee flexion**
- **Muscle activation**
- **Normal gait and movement patterns**

Initial precautions:

- TTWB for **2 weeks**, WBAT thereafter
- Avoid knee flexion $>90^{\circ}$ for **2 weeks**
- Avoid weight bearing knee flexion $>90^{\circ}$ for **6 weeks** and deep squatting for **12 weeks**

Pain, effusion and ROM:

- *PEACE protocol for the management of pain and swelling/effusion
NB: cryotherapy only influences pain, not drainage
- Terminal extension **ASAP**, patella mobilisation if required
- Non-weight bearing ROM $0-90^{\circ}$ for **2 weeks**, FROM thereafter

*PEACE: Protection, Elevation, Avoid anti-inflammatories, Compression, Education.

Muscle activation and strength:

- SQ's, SLR in brace until able to perform without extension lag
Consider electrostimulation if unable to voluntarily contract quadriceps
- OKC knee extension and flexion
- Once FWB: CKC ex's $<90^{\circ}$ until **6 weeks** and avoid deep squatting until **12 weeks**
- Concentric and eccentric training of the gluteal, hamstrings and calf muscles
- Add resistance to strengthening ex's as symptoms and signs allow

Neuromuscular training:

- Proprioceptive ex's (e.g. Bosu balance trainer)
- Correct alignment of trunk and lower limb during exercises and gait

Cycling:

- Static bike with no resistance from **2 weeks** if sufficient ROM, increasing time as able

Criteria for progressing to Phase 2:

- Closed wound
- No/minimal pain with phase 1 exercises
- No/minimal synovitis/effusion
- Normal patellofemoral mobility, tibiofemoral ROM $\geq 0-120^{\circ}$
- Voluntary quadriceps contraction
- Normal FWB gait (from 2 weeks post-op)

MENISCAL REPAIR PROTOCOL – PHASE 2

Goals:

- **Protect meniscal repair**
- **Full patellofemoral and tibiofemoral ROM**
- **Increase strength progressively**
- **Increase difficulty of neuromuscular and perturbation training**
- **Maintain good quality movement patterns**
- **Start running and sports specific training**

Precautions:

- Avoid weight bearing knee flexion $>90^\circ$ for **6 weeks** and deep squatting for **12 weeks**
- Do not commence running until patient has fulfilled return to running criteria

Pain, effusion and ROM:

- Monitor for increasing pain, effusion or localised temperature and modify rehabilitation accordingly
- If required, consider NSAIDs or hydrotherapy
- Maintain full extension, patella mobility and regain full/symmetrical flexion

Strength:

- Double and single leg CKC ex's $\leq 90^\circ$ until **week six**, avoiding deep squats until **week 12**
- Add weight/resistance to OKC and CKC ex's as able
- Quadriceps, gluteal and calf muscle strengthening
- Progressively increase resistance and decrease repetitions for all strengthening exercises

Neuromuscular training:

- Increase difficulty of double leg proprioceptive ex's (e.g. perturbations, two motoric tasks)
- Increase intensity of perturbation, progressing to single leg once able
- Correct alignment of trunk and lower limb during exercises, walking and running.

Cycling, running and other cardiovascular exercise:

- Static bike with resistance from **week 6**
 - Cyclic exercises (e.g. cross trainer or rower)
 - Start running if:
 - full ROM
 - pain ≤ 2 VAS and no effusion despite adequate loading
 - limb symmetry index (LSI) $\geq 70\%$ for quadriceps and hamstrings strength
 - minimum **8 weeks** since surgery
- NB: patients may not be ready to attempt running until at least 12 weeks post-op
- Increase cardiovascular training (mainly aerobic)
 - Introduce backwards and sideways running once competent with forward running
 - Introduce multi-plane, sports specific agility movements once competent with linear running

Criteria for progressing to Phase 3:

- Correct qualitative performance of phase 2 exercise
- LSI $\geq 80\%$ for quadriceps and hamstrings strength
- LSI $\geq 80\%$ for hop battery test (e.g. hop for distance, vertical jump, side hop)

MENISCAL REPAIR PROTOCOL – PHASE 3

Goals:

- Return to sport or physically demanding work

Strength/power:

- Continue progressive loading for strengthening exercises
- Sports-specific progressions e.g. power development, jumping/landing

Neuromuscular training:

- Increase difficulty of neuromuscular and perturbation training (e.g. single leg jumping)
- Introduce reactive/unanticipated movements
- Emphasise sports specific movements based on patient's goals
- Maintain quality of movement/performance during strength and sports exercises

Cycling, running and other cardiovascular exercise:

- Build sports specific load regarding energy expenditure (aerobic, anaerobic)
- Build sports specific load regarding surface (grass, court etc.)

Sports specific training:

- Increase intensity of agility training (e.g. cutting, pivoting)
- Restart training with patient's team

Criteria for returning to play:

- No knee pain with sports specific activities
- No giving way or fear of giving way during sports specific activities
- Active dynamic gait pattern and symmetrical running pattern
- Correct quality of performance with all sports specific activities
- Limb symmetry index (LSI) >90% for quads and hamstrings strength
- LSI >90% for hop battery tests
- Patient psychologically ready/confident to return to sports
- Minimum 12 weeks since surgery

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