Orthopaedics SA
BONE & JOINT SPECIALISTS

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Sports Injury and Joint Replacement Surgery for the Hip and Knee

ACL AND MCL RECONSTRUCTION REHABILITATION PROTOCOL

General Guidelines

- ACL and MCL reconstructions are usually performed on day-only basis or 1 night in-patient stay
- Supervised physical therapy commences immediately post-operatively. Patients should see their physical therapist as soon as practically possible. Supervised therapy continues for 6-12 months
- Braces are routinely used when the MCL is reconstructed or the meniscus is repaired
- Dr Awwad may alter time frames when indicated.

White compression stockings

You may stop wearing the white compression stockings after 24-48 hours . This compression stocking helps prevent a blood clot from forming in your legs. Once you are walking frequently you will no longer need the stocking . If you develop lower leg swelling, tenderness, and/or redness, please contact Dr Awwad's office or the hospital.

Dressings

The bulky encircling dressings (crepe bandage, velband and pads) may be removed the day after surgery. The small adhesive dressings should be left intact. To shower, cover the surgical knee and dressings with plastic cling wrap. Prior to discharge from hospital, an appointment will be made to see a nurse for a dressing change and wound check between 1-2 weeks post-operatively.

Ice and Elevation

The leg should be intermittently elevated and an ice pack used for 72 hours post-operatively to assist with swelling and pain. Ice packs should be applied for 20-30mins/hr. After 72 hrs, ice packs are no longer required, although can be safely continued and their use is very helpful for pain and swelling.

Pain Medications

The anaesthetist will individualise and organise the appropriate pain relief for patients. Commonly required medication are panadeine forte, tramadol, palexia and endone.

Precautions

Patients should contact Dr Awwad's office or the hospital the operation was performed in, if they develop high temperatures, worsening skin redness, worsening calf, knee or thigh pain and swelling and excessive bleeding or ooze from the incision sites.

Phase I - Immediately Post-Operatively to Week 4:

Goals:

- Protect graft, graft fixation and meniscal repair
- Minimise effects of immobilisation
- Control inflammation/swelling
- Full active and passive extension/hyperextension range of motion. Caution: avoid hyperextension greater than 5°.

Weightbearing Status and Brace:

- Touch weight-bearing post-op with crutches in the brace locked in extension fr
- Brace may be removed only when supervised with therapist and for hygiene purposes

Exercises:

- Only while supervised with a therapist
- No open chain exercise
- Avoid external rotation and valgus stress
- ROM exercise 0-40°
- Patellar mobilisation/scar mobilisation
- Heel slides
- Isometric Quad contractions (consider NMES for poor quad control)
- Prone assisted knee flexion
- Gastroc/Soleus, Hamstring stretches
- Gastroc/Soleus strengthening

Phase II - Post-Operative Weeks 4 to 8:

Criteria for advancement to Phase II:

- Full extension
- Good quad control, SLR without extension lag
- Minimum of 40° of flexion

- Minimal swelling/inflammation weight bearing)

Goals:

- Maintain full extension.
- Protect graft and graft fixation
- Increase hip, quadriceps, hamstring and calf strength
- Increase proprioception

Weightbearing Status and Brace:

- Touch weight bearing
- Brace to remain in full extension, except for therapist visits and hygiene purposes

Exercises:

- Avoid hyperflexion.
- ROM week 5 - 0-60°.
- ROM week 6 - 0-90°
- ROM week 8 - 0-110°

Phase III - Post-Operative Weeks 8-12:

Criteria for advancement to Phase III:

- Full extension/hyperextension
- Good quad control, SLR without extension lag
- Minimum of 90° of flexion
- Minimal swelling/inflammation
- Normal gait on level surfaces

Goals:

- Restore normal gait with stair climbing
- Maintain full extension, progress toward full flexion range of motion
- Protect graft and graft fixation
- Increase hip, quadriceps, hamstring and calf strength
- Increase proprioception

Weightbearing Status and Brace:

- Weight-bearing as tolerated
- Brace is weaned is no longer required
- Brace is no longer required at 10 weeks

Exercises:

- ROM 0-120°. Avoid hyperflexion.
- Continue with range of motion/flexibility exercises as appropriate for the patient
- Continue closed kinetic chain strengthening as above, progressing as tolerated – can include one-leg squats, leg press, step ups at increased height, partial lunges, deeper wall sits.
- Stairmaster (begin with short steps, avoid hyperextension)
- Elliptical machine for conditioning.
- Stationary biking- progress time and resistance as tolerated; progress to single leg biking
- Continue to progress proprioceptive activities – ball toss, balance beam, minitramp balance
- Continue hamstring, gastroc/soleus stretches
- Continue to progress hip, hamstring and calf strengthening
- If available, begin running in the pool (waist deep) at 10 weeks.

Phase IV - Post-Operative Weeks 12-26:

Criteria to advance to Phase IV:

- No patellofemoral pain
- Minimum of 120 degrees of flexion
- Minimal swelling/inflammation

Goals:

- Improve strength, endurance and proprioception of the lower extremity to
- prepare for sport activities
- Avoid over-stressing the graft
- Protect the patellofemoral joint
- Full range of motion

Exercises:

- Continue flexibility and ROM exercises as appropriate for patient
- Knee extensions 90°-30°, progress to eccentrics
- Progress toward full weight-bearing jogging at 26 weeks.
- Begin swimming if desired
- Progressive hip, quadriceps, hamstring, calf strengthening
- Cardiovascular/endurance training via Stairmaster, elliptical, bike
- Advance proprioceptive activities

Phase V: Post-Operative Months 6 to 9:

Criteria for advancement to Phase V:

- No significant swelling/inflammation.
- Full, pain-free ROM
- No evidence of patellofemoral joint irritation
- Strength approximately 70% of uninvolved lower extremity per isokinetic evaluation
- Sufficient strength and proprioception to initiate agility activities

Goals:

- Symmetric performance of basic and sport specific agility drills
- Single hop and 3 hop tests 85% of uninvolved lower extremity
- Quadriceps and hamstring strength at least 85% of uninvolved lower extremity per isokinetic strength test

Exercises:

- Continue and progress flexibility and strengthening program based on individual needs and deficits.
- Initiate plyometric program as appropriate for patient's athletic goals
- Agility progression including, but not limited to:
  - » Side steps
  - » Crossovers
  - » Figure 8 running
  - » Shuttle running
  - » One leg and two leg jumping
  - » Cutting Acceleration/deceleration/sprints
  - » Agility ladder drills
- Continue progression of running distance based on patient needs.

- Initiate sport-specific drills as appropriate for patient

Phase VI - Begins at approximately 9 Months Post-Op. Aim for full return to sports at 12 Months Post-Op:

Criteria for advancement to Phase VI:

- No patellofemoral or soft tissue complaint
- Necessary joint ROM, strength, endurance, and proprioception to safely return to work or athletics
- Physician clearance to resume partial or full activity

Goals:

- Safe return to athletics/work
- Maintenance of strength, endurance, proprioception
- Patient education with regards to any possible limitations
- Injury prevention programme

Exercises:

- Gradual return to sports participation
- Maintenance program for strength, endurance on an individual basis
- Commence ACL injury prevention programme (PEEP, FIFA 11+)

Criteria for Return to Sports:

- No effusion
- Isokinetic quadriceps strength testing at 60°/s with less than a 10% deficit compared to the contralateral side
- Single leg hop for distance with >90% of contra-lateral side
- Triple hop for distance with >90% of contra-lateral side
- Triple crossover hop for distance with >90% of contra-lateral side
- On-field sports-specific rehabilitation fully completed
- Running t-test completed in less than 11seconds

Do you still have a question about your recovery that has not been answered within this document?

Please contact Dr Awwad's office prior to your surgical date at: awwadadmin@orthosa.com.au

Sometimes we may miss a question that is important to you. If so, please feel free to email us your feedback so that we can improve our service to you and future patients – awwadadmin@orthosa.com.au

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APPOINTMENTS AND ENQUIRIES
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Ask Dr Awwad to clarify your restrictions prior to surgery to avoid disappointment.