

## Multiple Knee Ligament Reconstruction

### **Introduction/Aim**

A multiple ligament knee injury is often the result of a high trauma injury (e.g. RTA, skiing) and due to the severity of the surgery, multiple ligament reconstructed knees should aim for full mobility and function. High levels of sporting activity are not always achievable depending on the severity of the initial injury. Instability is the primary indication for this type of surgery. Some patients may be operated on acutely whilst others are operated on for more chronic instability.

The surgery usually consists of a combination of both autografts and allografts depending on available tissue. It is important to note whether an autograft has been taken from the ipsilateral or contralateral side as this may have an impact when planning rehabilitation.

Please note this statement covers:

Combined ACL and PCL Reconstruction

Combined PCL and Collateral Ligament/Posterolateral Corner Reconstruction

\* See separate guideline for Combined ACL and Collateral Ligament Reconstruction\*

### **Scope of practice**

This statement is aimed to guide MSK physiotherapists treating patients who are post-op multi-ligament knee reconstruction.

The statement and recommendations should always be used in conjunction with the clinical reasoning skills of the physiotherapist, any specific post operative instructions and patients should always be treated on a case by case basis.

### **Evidence base**

This best practice statement is based upon the 2009 Multiple Knee Ligament Reconstruction Guidelines and expert opinion. See reference list from Multiple Ligament Reconstruction Guidelines 2009 (attached) and updated article list 2020.

### **Physiotherapy Recommendations**

*Always follow the surgeon's post operative instructions; any queries should be directed back to the surgeon. Due to the variety of multi-ligament surgeries, timescales are approximate. Progression through phases should be guided by minimal swelling, resolution of pain and good muscle recruitment.*

Kim Anderson, Louise Pollard, July 2020

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Multiple Knee Ligament Reconstruction Best Practice Statement

## **Phase 1 (0-6 weeks)**

*Precautions: Avoid excessive/increased posterior tibial stresses.  
No active hamstrings exercises.*

<b>Goals</b>	<b>Recommendations</b>
Reduce Inflammation Protect Joint	RICE Hinged knee brace (0-90 degrees) Avoid hyper extension
Progress mobility Reduce posterior sag Increase ROM	Mobilise TWB in brace Pillow under proximal tibia at rest Patella mobilisations, passive and auto assisted flexion & extension within brace, aim for 90 degrees flexion passively
Increase muscle strength	Static quads, SLR (in brace), calf exercises, hip and core exercises (e.g. prone SLR, avoid varus/valgus stress through the knee)

## **Phase 2 (6- 12 weeks)**

*Precautions: Avoid excessive/increased posterior tibial stresses.  
Avoid active hamstrings exercises until week 8.*

<b>Goals</b>	<b>Recommendations</b>
Aim for full range of movement	Continue to increase passive and auto assisted flexion and extension
Remove brace	Wean off brace from 6 weeks post-op
Progress weight bearing Increase muscle strength	Progress to FWB from 6-10 weeks post-op Gradual increase in open chain quadriceps exercises Limit closed kinetic chain exercises to 0-60° flexion (leg press, mini squats) Start active <b>unresisted</b> hamstring exercises at 8 weeks Exercise bike with no toe clips (to avoid resisted hamstrings work) and low resistance
Improve proprioception	Wobble board, trampette, or BOSU exercises

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### Phase 3 (12 weeks – 1 year)

*Precautions: Avoid excessive/increased posterior tibial stresses*

#### Goals

Restore functional strength, endurance, neuromuscular control and confidence

#### Recommendations

Resisted hamstrings (open chain) may commence gradually at 12 weeks post-op

Progress all resisted, proprioception and functional exercises

Plyometrics may start once at least 90% of strength of unaffected limb achieved and not before 4 months

Jogging may start once at least 90% of strength of unaffected limb and not before 4 months at the earliest

#### Key Points

- Evidence available remains variable and inconsistent and there are no RCTs comparing one programme of rehabilitation versus another.
- During the early stages of rehab, ensure the patient is aware of the importance of reducing posterior translation of the knee.
- Return to sport should be guided by a stable, non-irritable knee with full ROM, hop test results and strength of the affected limb should be >90% of the unaffected limb (assuming contralateral limb is unaffected).
- Driving can commence when a patient has sufficient mobility and neuromuscular control to do so, **and** has obtained advice from their insurance company. This will likely be 12 weeks.