

# **Evidence-Based Rehabilitation and Performance Enhancement for MCL Grade 2 Injury**

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# Table of contents

**01**

## Introduction

Player Background, Objective of the Rehabilitation Program, Target

**02**

## Rehabilitation Phase

Acute Phase, Subacute Phase, Pre-Return Phase, Return-to-Sport Phase

**03**

## Performance Enhancement

Physical KPIs, Psychological KPIs, Performance KPIs Post-Return

**04**

## Q&A Session





# 01

## Introduction

Player Background, Objective of the  
Rehabilitation Program, Target

# Player Background & Injury

Age: 27

Position: Standoff

Height: 180 cm

Weight: 85 kg

Injury: R. Knee MCL Grade 2      Preservation therapy

Team Practice: 4 times per week



# Mechanism of Injury (Overview)

The MCL was injured when the player was tackled during a rugby offensive play. The tackler's shoulder or upper body typically applies force to the knee as they try to bring the player down.



# Timeline

**Injury Date:** September 14, 2024 (1st pre-season game).

**Targeted game:** December 28, 2024 (2nd official game).

**Rehabilitation Period:** Approximately 12 weeks.







# 02

## Rehabilitation Program

Player Background, Objective of the Rehabilitation Program, Target

# Rehabilitation Program (Overview)

## **Phase 1: Acute Phase (1–2 weeks post-injury)**

Focus: Pain management, reducing swelling, and protecting the ligament

## **Phase 2: Sub-Acute Phase (3–6 weeks post-injury)**

Focus: Improving range of motion and strengthening surrounding muscles

## **Phase 3: Strengthening Phase (7–8 weeks post-injury)**

Focus: Strengthening the knee and preparing for sport-specific movements

## **Phase 4: Return-to-Sport Preparation (9–12 weeks)**

Focus: Sport-specific drills, agility, and functional movements





## Phase 1: Acute Phase (1-2 weeks)

**Goal:** **Protect** the knee, **reduce** pain/swelling, and **maintain** general fitness.

**Exercise:** (rest 30s)

Quadricep setting 3 sets/ 12 rep

Heel sliding with towel 1 set 5-15min

SLR 3 sets/ 10 rep

Reverse SLR 3 sets/ 10 rep

Hip abduction 3 sets/ 10 rep

**Ice Therapy** (reduce swelling and pain): Apply ice **for 15-20 minutes every 2 hours**

**Rest & Activity:** **Limit weight-bearing activities.** Use **crutches if necessary.**



## Phase 2: Sub-Acute Phase (3-6 weeks post-injury)

Goal: **Improve range of motion** and **strengthening surrounding muscles**

### Exercise:

Stationary bike	10-15 mins low intensity
Leg curl (band)	3 sets/ 15 rep
Leg extension (band)	3 sets/ 15 rep
Squat (1/2)	3 sets/ 15 rep
Bench press	3 sets/ 15 rep
Chinning	3 sets/ 10 rep
Bent over row	3 sets/ 15 rep



## Phase 3: Strengthening Phase (7-8 weeks post-injury)

Goal: Strengthening the knee and preparing for sport-specific movements

### Exercise:

Leg Press	3 sets/ 15 rep
Squat (Full)	3 sets/ 15rep
Single leg squat	3 sets/ 15 rep
Forward lunges squat	3 sets/ 15 rep
Forward lunges	3 sets/ 15 rep
Single-leg Romanian Deadlift	3 sets/ 15 rep
Running	



## Phase 4: Return-to-Sport Preparation (9-12 weeks)

Goal: Sport-specific drills, agility, and functional movements

Exercise:

Squat jump

3 sets/ 10 rep

Box jump

3 sets/ 10 rep

Side to side hops

3 sets/ 10 rep

Low – intensity rugby drills:

Cones drill

Change of direction drill

Tackle

Kicking



# Evidence

JSPO Athletic Trainer Textbook 8





03

# Performance Enhancement

Physical KPIs, Psychological KPIs,  
Performance KPIs Post-Return



# Performance up with KPIs

What is KPIs ?

Key performance indicator (重要業績評価指標) are **measurable values** that indicate how effectively an individual, team, or organization is achieving specific objectives.

Used to **evaluate an athlete's progress** in their training, rehabilitation, or competitive goals.



# Performance up program with KPIs

Gym session (Mon, Tus, Thru, Sat)

Exercise:

Squat

5sets/ 4reps 75-85% 1 RM

Deadlift

5sets/ 4reps 75-85% 1 RM

Power clean

5sets/ 4reps 75-85% 1 RM

Box jump

RELATIONSHIP BETWEEN TESTS OF PHYSICAL QUALITIES, TEAM SELECTION, AND PHYSICAL MATCH PERFORMANCE IN SEMIPROFESSIONAL RUGBY LEAGUE PLAYERS

TIM J. GARRETT AND ANTHONY J. SEIBOLD



# Performance up program with KPIs

Speed training (Thursday)

March (band)

Hop (band)

Sled pull

40m sprints

In goal start 5m

5m--10m

In goal 5m

In goal start

THE EFFECT OF RESISTED SPRINT TRAINING ON SPEED AND STRENGTH PERFORMANCE IN MALE RUGBY PLAYER  
ANDREW J. HARRISON AND GILLIAN BOUKE 2009





04

Q&A

