Multi-ligament **Knee Injury:** A prospective series of 159 patients.

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- Surgical, DePuy Synthes
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Rare problem with big consequences



- MVA / MBA \bullet
- Sporting

• Largely high energy injuries

• At least 2 ligaments disrupted



• 10% ultra low energy (obese)



Repair Versus Reconstruction of the Fibular Collateral Ligament and Posterolateral Corner in the Multiligament-Injured Knee





- Single surgeon series increasing to 2 surgeons
- Prospective analysis
- PROMs 3/6/12/24 months 5/10 years
- All multi ligamentous knee injuries
 - Tertiary institution, level 1 trauma centra
 - Private practice, sports focus

Design











My series

159 patients

Multi-ligament knee reconstructions between 2015 - 2022

Age	35.2 (SD 11.4, range 58)	
BMI	27.8 (SD 6.1, range 36.1)	
Time to surgery	53.5 days (SD 100.4, range 727)	
chanism of injury - Sporting - MVA Others (falls, work injuries)	62 (42%) 54 (37%) 31 (21%)	
nplications and re- intervention	27	



SCHENCK CLASSIFICATION

MULTI-LIGAMENT KNEE INJURIES

Number of Injuries in Cohort



Classification	Description	
KD I	Dislocation with injury of one cruciate ligament + collaterals	
KD II	Dislocation with injury of both cruciate ligaments	
KD III	Dislocation with injury to both cruciate ligaments and either collateral ligament	
KD III M	Dislocation with injury to both cruciate ligaments and medical collateral ligament	
KD III L	Dislocation with injury to both cruciate ligaments and lateral collateral ligament	
KD IV	Dislocation with injury to both cruciate ligaments and both collateral ligaments	
KD V	KD IV + fracture of the distal femur and/or tibial plateau	
Dislocations with nerve injury are indicated with "N" and arterial injuries are indicated with "C".		



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Results: Mechanism of Injury Impact on PROMS





All MLKI - Sporting / MVA / Other





BMI > 30 vs All MLKI - Injury Pattern

BMI>30









Time to surgery...

- Association between time to surgery and PROMs
 - No significant correlations



Results: Complications and re-intervention

- •MUA 14 (9.5%)
- Infection 2 (1.4%)
- Medial knee pain removal of implant 2 (1.4%)
- DVT 2 (1.4%)
- •Wound dehiscence 1 (0.7%)
- Removal of metalwork 3 (2%)
- Cyclops debridement and notch-pasty 3 (2%)
- Conversion to TKR 1 (0.7%)

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Learning Points

- Examination Under Anaesthesia (EUA) is vital in laxity diagnosis
- MRI reporting will diagnose areas of trauma but does not define laxity
- Recovery of range of motion and reduction of quads inhibition prior to undergoing surgery
 - Aim for range recovery, normal gait mechanics and returned quads function prior to surgery
 - Exceptions in fractures, open injuries, bucket handle meniscal tears and severe injury
- Complex injury patterns:
 - Fracture dislocation, particularly the anteromedial tibia 'corner' fracture with PLC/PCL disruption, peroneal nerve dysfunction
 - Trans extensor mechanism posterior dislocation: frequently open anteriorly, severe trauma, posterior dislocation
- Early active rehabilitation
- Manage expectations these are severe injuries and some athletes won't make it back

