Associated Medial Meniscal Injury with ACL Reconstruction Results in Poorer Strength and Jump Tests Outcomes: A 6-Month Analysis of 504 Patients from the MERIScience Cohort

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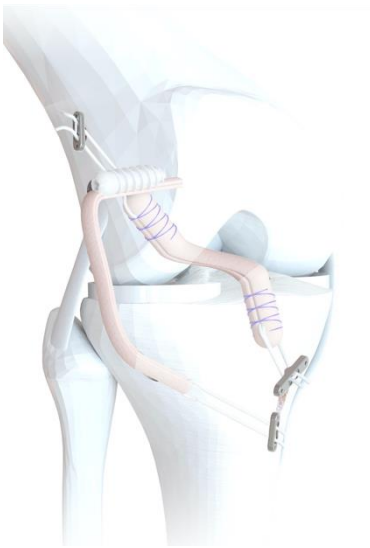
- **Composite Test** [1,2]:
  - Evaluate the Return to Sport
  - 6 months after ACLR
  - Global patient evaluation

- **Meniscal injuries**:
  - 30-50% of patients [3,4]
  - Post-operative protocol may be different [5]
  - Clinical and functional consequences [6]



Consequences of meniscal injuries and their treatments on a composite test

[1] *Grassi et al., EJOST 2016*
[2] *Meredith et al., KSSTA 2020*
[3] *Cinque et al., OJSM 2018*
[4] *Hagino et al. AOTS 2015*
[5] *Redler et al., OJSM 2021*
[6] *Claes et al., KSSTA 2013*

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Disclosure

- N. Graveleau is consultant for SBM, Stryker, FH and Arthrex
- N. Bouguennec is consultant for SBM, Stryker, FH and Arthrex

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- Monocentric study:
  - **498** primary ST4 ACLR
  - 153 Gracilis LAL Reconstruction
  - 254 meniscal injuries
    - 114 Medial Meniscus - **66% repair**
    - 96 Lateral Meniscus - **65% repair**
    - 44 Bi-Meniscus

- Composite Test:
  - Unipedal Jump tests
  - Strength evaluation
  - Psychological evaluation with ACL-RSI

Ability to Return to Sport

AMPLITUDES ARTICULAIRES	COTÉ SAIN	COTÉ OPÉRÉ
FLEXION	140	140
EXTENSION	0	5° de flessum

TEST ISOCINETIQUE		COTÉ SAIN	COTÉ OPÉRÉ	DÉFICIT
QUADRICEPS	CONC 60°/sec	115	84	27%
	CONC 240°/sec	687	639	7%
ISCHIOJAMBIERS	CONC 60°/sec	72	72	0%
	CONC 240°/sec	767	746	3%
	EXC 30°/sec	103	83	20%

ANGLE PIC COUPLE IJ EXC 30°/SEC	NORME <15°	4	6

RATIOS IJ/Q	60°/sec (conc/conc)	240°/sec (conc/conc)	Mixte (IJexc30/Quadconc240)
NORME	0,5-0,6	0,7-0,8	>1,2
COTE SAIN	62	1,12	1,8
COTE OPERE	85	1,17	1,5

SAUTS	COTÉ SAIN	COTÉ OPÉRÉ	DÉFICIT
SINGLE HOP TEST	180	175	3%
TRIPLE HOP TEST	555	530	5%
SIDE HOP TEST (MAX SAUTS EN 30 SEC)	62	66	-6%
DROP JUMP TEST (RAS 0 / VALGUS 1)	0	1	
SQUAT UNIPODAL (RAS 0 / VALGUS 1)	1	1	

SCORE ACL-RSI	88%

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- **FU:** 4.8 ± 1 year
- **Wo/M:** 182 (37%) / 316 (63%)
- **Mean age:** 27.6 ± 11 yo
- **Pre-injury Tegner: 7 ± 1 (2-9)**

Correlation

Isokinetic Tests	Isolated ACLR	ACLR + MM	ACLR + ML
Deficits Q 240°/s (%)	14 ± 14	**18 ± 18**	14 ± 14
Deficits H 30°/s (%)	14 ± 18	**18 ± 18**	14 ± 17
H/Q 240°/s (%)	68 ± 27	**80 ± 67**	65 ± 27
		P 0.02	

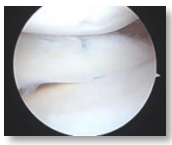
Dynamic Valgus	Isolated ACLR	ACLR + MM	ACLR + ML
Unipedal Squat (US) (%)	49 ± 49	**51± 50**	**45 ± 50**
		P 0.05	P 0.02

MM injury	–	**Worse** Isokinetic tests results **High frequency** of US Dynamic Valgus
LM injury	–	**High frequency** of US Dynamic Valgus
BM injury	–	Similar to medial meniscus

No Correlation

ACL-RSI is not affected by meniscal injuries

Meniscal management (Repair vs Meniscectomies) does not influence composite test results



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- **First** large cohort study [1]
- **Reproductible** and **standardized** evaluation
- Help to clarify divergent previous studies results:
  - On meniscus affected [2]
  - On treatment [3,4]

[1] *Moretti et al., OJSM 2023*
[2] *Wenning et al., AOTS 2020*
[3] *Casp et al., OJSM 2021*
[4] *Redler et al., OJSM 2021*

Take Home Messages

Significant Influence of MM Injuries

No impact of meniscal management

- Need to **prevent** MM injury
- Need to **Individual Rehabilitation** Protocol

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