

Greater return to sport rates after anterior cruciate ligament reconstruction in competitive compared to recreational martial arts athletes

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Disclosures

- I have no financial conflicts of interest to disclose

Introduction

- Ability to reach preinjury level of sports participation is a key outcome for athletes with ACL injury.¹
- Secondary ACL injuries and psychological barriers often hinder successful return to preinjury sports (RTPS).²⁻⁴
- Martial arts involve frequent contact and rapid directional changes, which contribute to higher injury rates and potentially lower RTPS rates.⁵⁻⁶



Purpose

Study Aim

- Identify the rate of RTPS among martial arts athletes following ACLR and explore factors associated with successful and unsuccessful RTPS.

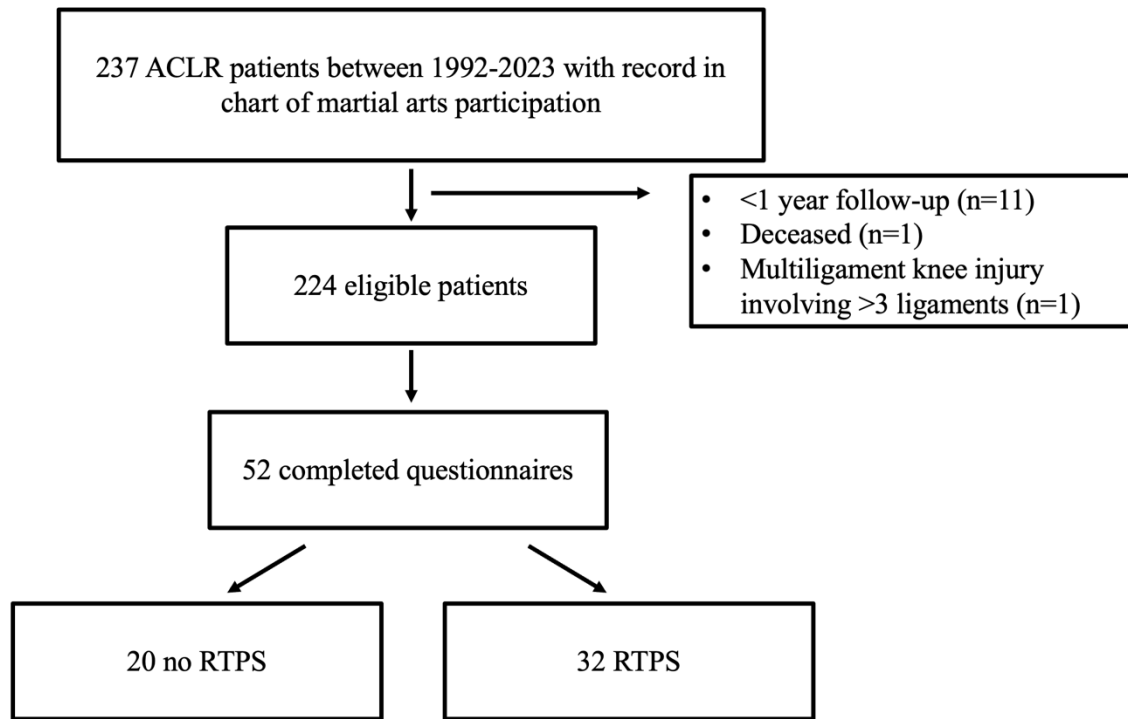
Hypothesis

- More than 50% of martial arts athletes will achieve RTPS, with those returning to preinjury levels showing higher PROs and fewer complications.

Methods

- All martial arts athletes who underwent primary ACLR from 1987-2023 were retrospectively reviewed.
- Eligible patients were contacted to complete a questionnaire (demographics, martial arts participation, return to sport/work, complications, PROs).
- Chart review captured surgical details and revision rates.
- Patients were stratified by successful RTPS, and outcomes were compared.

Results – Study Population



Results – Demographics

- 52 patients included
 - Mean age 30 ± 11 years
 - 21% female
 - Mean 12 ± 8 years follow-up
- 58% (n=22) returned to preinjury levels

	No RTPS (n=22)	RTPS (n=30)	P value
Demographics			
Age at time of ACLR (years)	21.4 (18.5-40.4)	26.0 (21.3-41.8)	0.41
Female sex, n (%)	7 (32)	4 (13)	0.17
BMI (kg/m ²) (n=34)	27.4 (22.1-33.5)	25.2 (22.3-29.0)	0.96
Follow-up in years	7.9 (2.0-12.4)	8.5 (5.5-10.4)	0.71
Time between injury and surgery in months (n=44)	3.1 (0.9-4.0)	1.8 (1.3-4.4)	0.77

Results

- Statistically significant differences in:
 - Complication rates ($p=0.02^*$)
 - Length of PT ($p=0.02^*$)
 - IKDC scores ($p<0.01^*$)
 - Tegner scores ($p=0.04^*$)
- Overall secondary ACL injury rate: 20%

	No RTPS (n=22)	RTPS (n=30)	P value
Post-operative characteristics			
Complication	9 (41)	4 (13)	0.02*
Length of physical therapy			
Less than 3 months	3 (14)	12 (40)	0.02*
3-6 months	6 (27)	8 (27)	
6-9 months	3 (14)	8 (27)	
9-12 months	4 (18)	1 (3)	
Greater than 12 months	6 (27)	1 (3)	
Secondary ACL surgery			
Ipsilateral knee (graft failure)	2 (9)	4 (13)	0.69
Contralateral knee	3 (14)	1 (3)	0.30
PROs at most recent follow-up			
IKDC SKF total	70.7 (64.4-72.7)	74.7 (71.0-77.0)	<0.01*
VAS	0 (0-2.3)	0 (0-1.0)	0.59
Tegner activity scale (n=50)	6.0 (4.3-7.0)	7.0 (5.0-9.0)	0.04*
Change in Tegner from pre-injury to final follow-up (n=50)	-2.0 (-3.8--1.0)	0 (-3.0-0)	0.03*
Marx	7.5 (0-12.0)	10.0 (4.0-14.0)	0.10

Results

- Reasons for not returning to martial arts (n=12)
 - 42%: Non-ACL related reasons (n=5)
 - 33%: Fear of re-injury (n=4)
 - 17%: Persistent subjective knee instability (n=2)
 - 8%: Knee pain (n=1)



Conclusion

- 58% of martial arts athletes achieved RTPS
 - Significantly better PROs and fewer complications compared to no RTPS group.
- 20% experienced a second ACL injury in either knee.
- Fear of reinjury were key barriers to RTS.
 - Physical PROs may overlook critical psychological factors.
- Comprehensive rehab addressing both physical and mental recovery is crucial for optimizing RTS.

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Thank you!



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