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GOTHENBURG



Mismatch between physical and psychological outcomes at RTS after ACL reconstruction and second ACL injury risk

ERIC HAMRIN SENORSKI, PT, PHD
ASSOCIATE PROFESSOR OF PHYSICAL THERAPY

DEPARTMENT OF HEALTH AND REHABILITATION
INSTITUTE OF NEUROSCIENCE AND PHYSIOLOGY
SAHLGRENSKA ACADEMY, UNIVERSITY OF GOTHENBURG



Disclosure information

None to declare.

PURPOSE

To analyze the rate of subsequent ACL injury in different patient groups, with or without a mismatch between physical and psychological outcomes after ACL reconstruction



METHODS



- Project ACL
 - Local rehabilitation specific registry
- Prospective evaluation
- Continuous evaluation of tests of muscle function and PROs



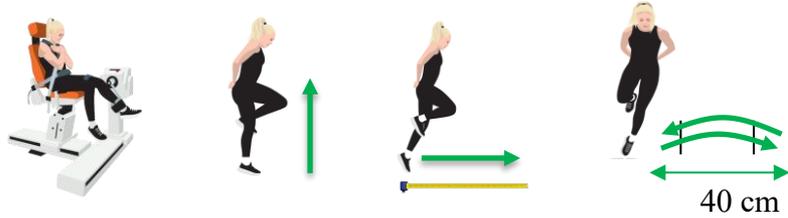
METHODS

-  ✓ Registered in Project ACL, treated with ACL reconstruction
-  ✓ 15-30 at time of reconstruction
-  ✓ Pre-injury Tegner level ≥ 6
-  ✓ If suffered a second ACL injury, after RTS
-  ✓ Participated in muscle function tests and PROs at time of RTS
-  ✓ Were followed at least 1 year after RTS

 ✗ >2 ACL injuries

METHODS

RTS = rate the same Tegner level as before injury



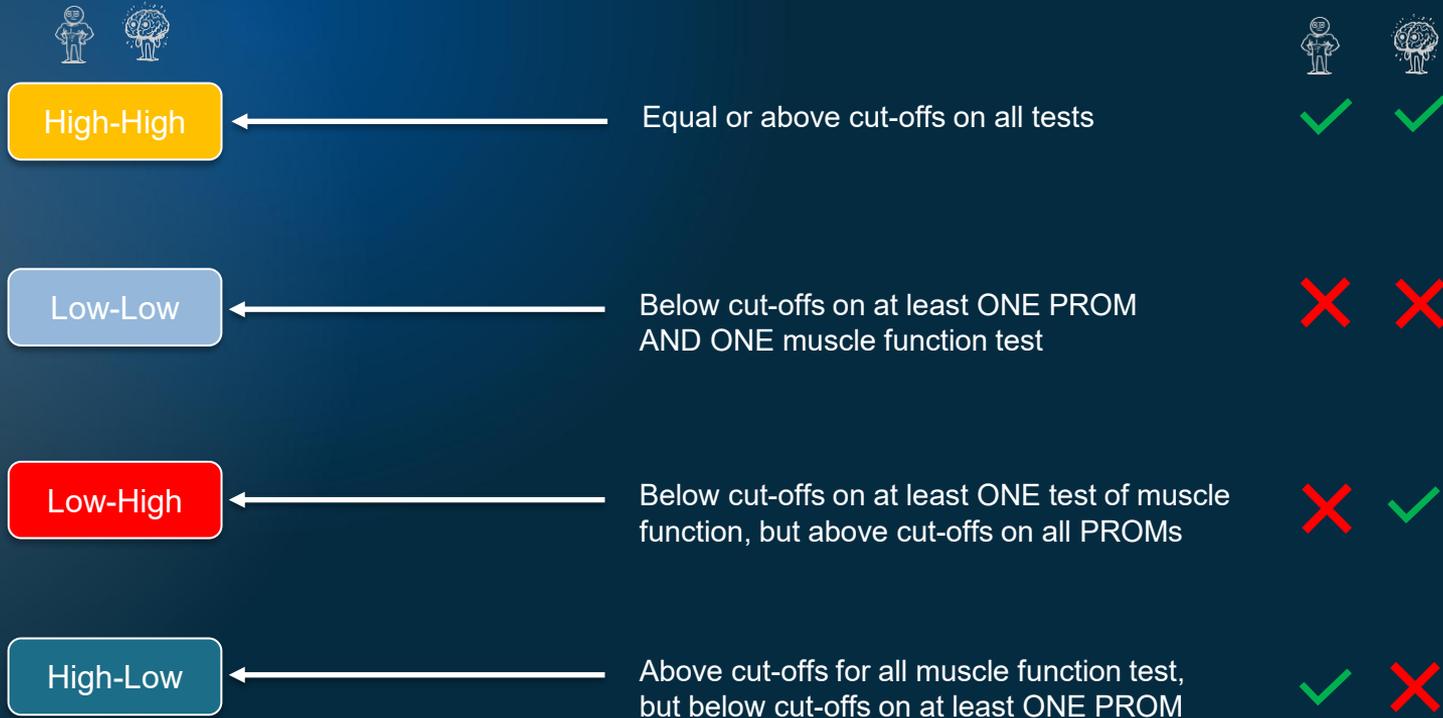
Knee flexion and extension Vertical hop Hop for distance 30 s side hop

$\times <90\% \text{ LSI}$ $\geq 90\% \text{ LSI}$ ✓

ACL-RSI K-SES pres K-SES fut KOOS Sports KOOS QoL

$\times <72 \leq$ ✓ $\times <9.4 \leq$ ✓ $\times <7 \leq$ ✓ $\times <96 \leq$ ✓ $\times <56 \leq$ ✓

METHODS



RESULTS



n = 380 patients

High-High

n = 17 (4.5%)

Low-Low

n = 235 (61.9%)

Low-High

n = 26 (6.8%)

High-Low

n = 102 (26.8%)



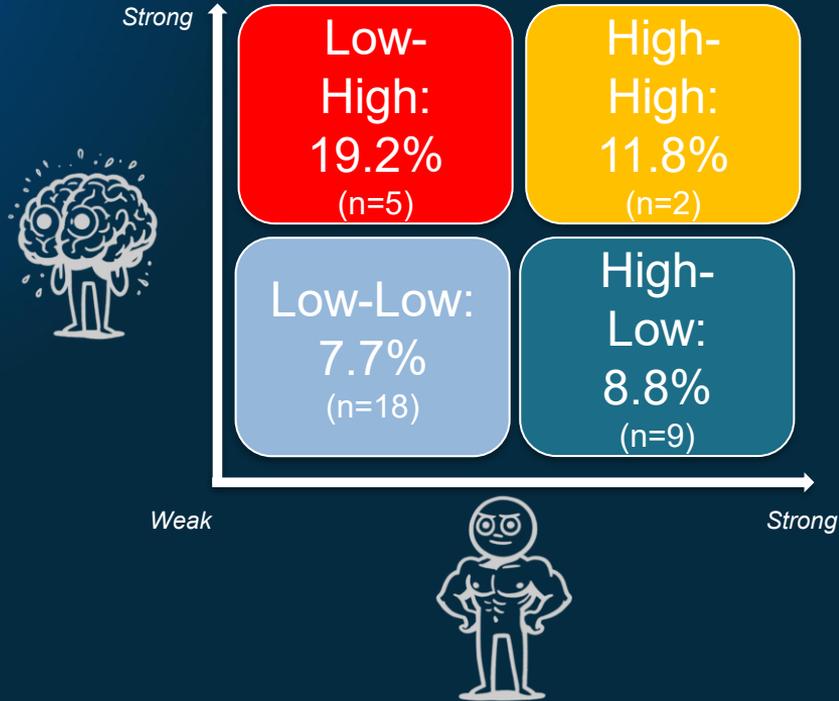
Patient demographics and comparisons between groups.

	All patients	High-High	Low-Low	Low-High	High-Low	p-value
Sex, male, n (%)	185 (48.7%)	7 (41.2%)	107 (45.5%)	15 (57.7%)	56 (54.9%)	0.29
Age at surgery, years	22.4 (6.1)	19.6 (3.3)	22.6 (6.0)	23.0 (7.0)	22.1 (6.3)	0.27
Time between ACL-R & RTS, months	15.4 (12.3)	15.1 (4.3)	14.6 (11.6)	19.5 (26.8)	16.3 (7.9)	0.0023
Time between RTS and 2nd ACL injury, months	5.1 (3.3)	5.3 (0.4)	5.1 (3.4)	2.7 (1.9)	6.2 (3.5)	0.37

RESULTS

Second ACL injury n = 34 (8.9%)

- High-High n = 17 (4.5%)
- Low-Low n = 235 (61.9%)
- Low-High n = 26 (6.8%)
- High-Low n = 102 (26.8%)



RESULTS

Second ACL injury n = 34 (8.9%)

High-High

n = 17

Low-Low

n = 235

Low-High

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Cox regression analysis for the hazard rate of a subsequent ACL injury within 1 year of RTS.

		Crude		Adjusted	
	n (%) of event	HR (95%CI)	P-value	HR (95%CI)	P-value
High-High (Ref)	2/17 (11.8%)				
Low-Low	18/235 (7.7%)	0.64 (0.15; 2.77)	0.55	0.54 (0.12; 2.37)	0.41
High-Low	9/102 (8.8%)	0.74 (0.16; 3.42)	0.70	0.74 (0.16; 3.44)	0.70
Low-High	5/26 (19.2%)	1.79 (0.35; 9.23)	0.49	1.79 (0.35; 9.23)	0.49

RESULTS

High-High

n = 17

Low-Low

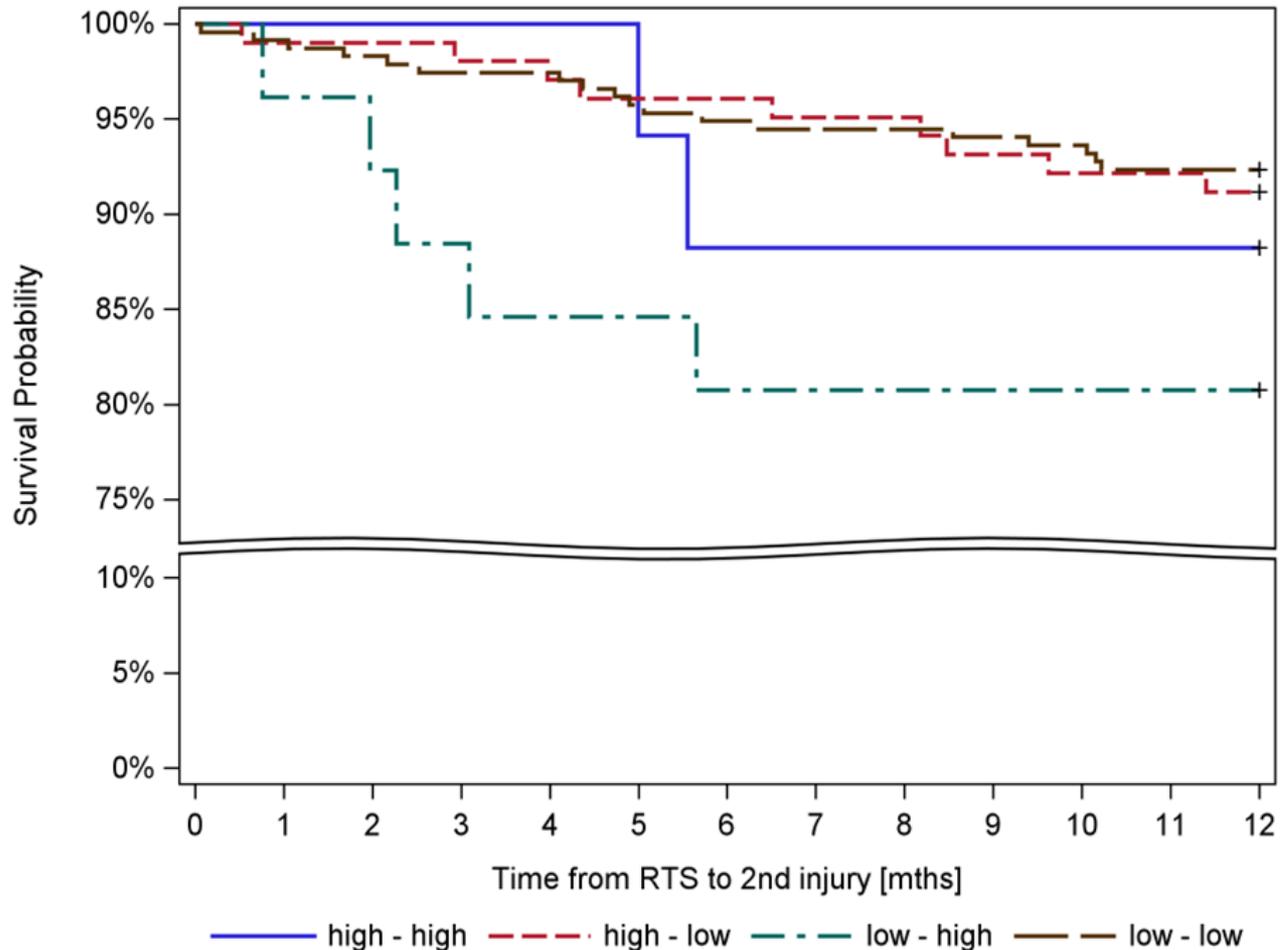
n = 235

Low-High

n = 26

High-Low

n = 102



LIMITATIONS

- Use of time depended variables for classification
 - Muscle function and PROMs can change
- Oversimplification due to cut-offs
 - State vs. trait
- Psychometric properties of PROMs
- 'Mismatch' valued as indicative and not definitive

CONCLUSION

“A “mismatch” that consist of high muscle function and low psychological status, or low muscle function and high psychological status, does not appear to affect the occurrence of second ACL injury after ACL reconstruction.”



UNIVERSITY OF
GOTHENBURG

Eric Hamrin Senorski, PT, PHD

Department of Health and Rehabilitation
Institute of Neuroscience and Physiology
Sahlgrenska Academy
University of Gothenburg

eric.hamrin.senorski@gu.se

