

Higher Confidence is Associated with Higher Peak Isometric Extension Torque in Individuals with a History of Anterior Cruciate Ligament Reconstruction

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PURPOSE

To examine the relationship between self-reported confidence and peak isometric extension torque in individuals with a history of ACLR. We hypothesized that there would be a positive relationship between confidence and peak isometric extension torque.

METHODS

- 26 participants 4 to 24 months post-ACLR completed the Anterior Cruciate Ligament Return to Sport After Injury (ACL-RSI) questionnaire. The ACL-RSI questionnaire is a reliable and valid tool for evaluation of psychological readiness for return to sport and includes 3 subscales (emotion, confidence, and risk appraisal).
- Isometric knee extension torque data were collected via a multi-mode dynamometer at 90° (Biodex Medical Systems Inc., Shirley, USA). Participants completed 3 trials bilaterally with one minute of rest between each trial. Peak knee extension torque was averaged across all trials and normalized to body weight.
- Pearson Product Moment correlation coefficients were used to examine the relationship between the ACL-RSI confidence subscale scores and peak isometrics extension torque for the ACLR limb and the contralateral limb.



Figure 1. Isometric Strength Testing Set-Up

Those with **higher reported confidence levels** had **higher peak isometric extension torque in the surgical limb** post-ACLR reconstruction.



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RESULTS

Table 1. Descriptive Statistics (N=26)

Variable	Mean (SD)
Sex	15 Females (57.7%)
Age, years	21.8 (4.4)
Height, centimeters	66.7 (2.7)
Weight, kilograms	166.0 (30.6)
Time Since Surgery, months	7.9 (4.4)
ACL-RSI Score	63.0 (26.8)
ACL RSI Confidence Subscale Score	68.5 (27.2)
90° Peak Isometric Extension Torque (Nm/kg)	
ACLR Limb	2.87 (0.80)
Contralateral Limb	2.26 (0.67)

Descriptive statistics presented as mean (SD) for continuous variables or count (%) for categorical variables.

	Contralateral Limb	ACLR Limb	ACL-RSI Confidence
Contralateral Limb	1.0		
ACLR Limb	r = 0.67 p = <0.001	1.0	
ACL-RSI Confidence	r = 0.18 p = 0.38	r = 0.42 p = 0.03*	1.0

Table 2. Person Product-Moment correlation matrix.
* denotes statistical significance.

DISCUSSION

- Confidence is positively associated with peak isometric extension torque in the surgical limb, but not the contralateral limb, post ACLR.
- ACL-RSI scores indicate that this sample was not psychologically ready to return to sport.
- Future research should examine the relationship between confidence and quadriceps strength at clearance for RTS.

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