



Return to Sport Status and Patient Reported Outcomes at a Minimum of 2-Year Post ACL Reconstruction in Adolescent Athletes

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OBJECTIVES

- Significant variations exist in the published rates of return to sport following anterior cruciate ligament reconstruction (ACLR)
- Both functional outcomes and psychological factors have been shown to influence an athlete's return to sport decision
- The majority of studies on this topic focus on the collegiate athlete in their mid-20's. Therefore there is a paucity of information regarding the adolescent population
- The purpose of this study was to report mid-term ACLR results for adolescent patients in regards to their ability to return to their primary sport and patient reported outcomes.

METHODS

- Study questions included:
 - Patient pre-injury primary sport and level of competition
 - If they returned to their primary sport and if so at what level of competition
 - If they experienced subsequent ACL injury
 - If they did not return to sport they were asked for the reason
 - Patients were then asked to complete the IKDC and ACL-RSI
- Descriptive statistics were calculated for all relevant parameters. Paired two-tailed T-tests were performed to assess differences in patient reported outcomes from their release visit to the follow-up survey.

RESULTS

- 74 adolescent athletes (Table 1) completed the survey for a response rate of 24.5%.
- 89% of the population had a hamstring autograph
- Prior to the injury 82% of patients considered themselves to be a competitive athlete.
- A total of 54 patients (73%) were able to return to their primary sport. Of those returning:
 - 54% maintained their same level of competition
 - 37% were now competing at a higher level of competition than prior to injury.
 - 9% reported competing at a lower competition level.

DISCUSSION

- Of the patients that were unable to return to sport 30% reported changes in life such as starting work or college
- 25% of the patients in this cohort that did not return to sport cited they were fearful of re-injury. Another 25% reported poor knee function. Therefore 50% of the return to sport decisions are influenced by either physical or psychological factors.
- This study is not without limitations. A response rate of 24.5% may have created an inadvertent selection bias. Another limitation is that the small sample reduces our ability to perform subgroup analyses on factors such as competition level.

METHODS

- A chart review with follow-up phone calls to patients two-years post ACL reconstruction was approved the Connecticut Children's IRB.
- Patients were included if they were adolescent athletes between the ages of 13 and 18 years old and treated at our facility by one of the two fellowship trained, board certified orthopedic surgeons between December 2006 and December 2016.
- Patients were contacted by phone and were consented for the follow-up data collection. Patients were given the opportunity to complete the questionnaires either over the phone or by email.

Table 1. Patient Demographics.

N	74
Sex, f	46 (62%)
Age at surgery (yrs)	15.9 ± 1.5
Age at follow-up (yrs)	19.9 ± 2.0
Average time post primary ACLR (yrs)	4.0 ± 2.0

Table 2. Differences in Patient Reported Outcome Scores by decision to return to sport.

	IKDC Score	ACL-RSI Score
Returned to Sport	90.3 ± 12.3	81.6 ± 20.4
Discontinued Sport	81.9 ± 14.8	52.7 ± 26.7
P-value	0.030	<0.001

RESULTS

- Patient reported outcome scores averaged:
 - 88.0 ± 13.4 for the IKDC and 73.8 ± 25.6 for the ACL-RSI
- 27% of patients indicated they discontinued their sport the principle reasons were:
 - 25% poor knee function, 25% fear of re-injury, and 30% changes in team or training.
- Both the IKDC and ACL-RSI scores were statistically lower in patients that discontinued their primary sport. (Table 2).

CONCLUSION

- In our cohort 73% of adolescent patients were able to successfully return back to their primary pre-injury sport at a minimum of two years post ACLR.
- Results indicated that both knee function and psychological responses to injury appear to be important factors in determining an adolescent athlete's decision to return to sport.