

An Analysis of Repeat ACL Injury & Return to Sport in 1000 Australian Soccer Players

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Introduction:

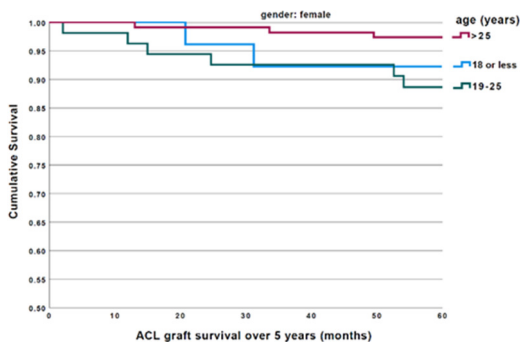
ACL reconstruction is commonly performed with the goal of returning an athlete to play. Repeat ACL injury after ACL reconstruction is a common and concerning complication. This study assessed the rate of return to play, and incidence of further ACL injury in a large series of Australian Soccer players after ACL reconstruction.

Methods:

1000 consecutive soccer players who had undergone ACL reconstruction with hamstring tendon autograft between 2007 and 2015 were identified from a prospective database. Subjects were assessed at a minimum of 5 years with questions regarding further ACL injuries, family history of ACL injury, return to sports, the ACL RSI score and Cincinnati Sports Activity Scale.

Results:

Of the 1000 subjects, 6 revoked consent and 1 died. Of the remaining 993, 861 (87%) were reviewed at a mean 8 years from surgery. There were 665 males (77%), with a mean age of 30 years (range 13-62).



A RTS was reported by 368 (67%) males and 104 (63%) females without further ACL injury ($p=0.257$). Of the 240 who did not return to soccer (RTS), 172 (72%) reported that it was because of their operated knee.

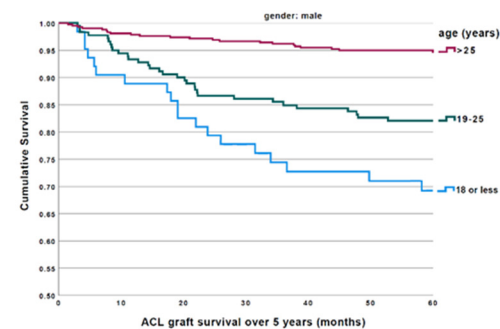
There was an ACL graft rupture in 85 participants (10%) and contralateral ACL rupture occurred in 68 (8%) within 5 years. The ACL graft survival for females was 99%, 97% and 94% at 1, 2, and 5 years respectively. The ACL graft survival for males was 96%, 93% and 88% at 1, 2 and 5 years respectively. Age was the only significant fac-

tor for graft rupture in both males (HR 7.2, $p=0.001$) and females (HR 38.3 $p=0.074$). The contralateral ACL survival for males was 98%, 96% and 92% at 1, 2 and 5 years respectively. The ACL survival for females was 97%, 93% and 90% at 1, 2, and 5 years respectively. CACL rupture was associated with younger age (HR 3.6-3.1) and RTS (HR 10-38) in males and females respectively.

Graft diameter did not influence ACL graft rupture rates and a total of 70% of patients returned to soccer after ACLR. The mean ACL-RSI score was 59, and patients who reported more fear of reinjury on this scale were less likely to have returned to soccer.

Conclusions:

The rate of ACL graft rupture was 10% and CACL injury was 8% over 5 years in this large cohort of Australian soccer players. ACL reconstruction with hamstring autografts is a reliable procedure for allowing 70% of patients to return to soccer in this high-risk population.



The risk of re-injury should be discussed when considering a return to soccer. Risk factors for further ACL injury are younger age at time of surgery, male gender and returning to soccer. Graft diameter was not a factor in ACL graft rupture indicating other factors, particularly age, are of primary importance.



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