

## Paper #95

# Return to Sport: Does Excellent 6-Month Strength and Function Following ACL Reconstruction Predict Mid-Term Outcomes?

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### Summary:

Patients with excellent 6-month strength and function after ACL Reconstruction had superior knee function and activity levels at mid-term followup; however, contralateral ACL tears were more common.

### Abstract:

#### INTRODUCTION

Functional and isokinetic testing are commonly performed to evaluate patients after anterior cruciate ligament (ACL) reconstruction. While this data is often used as criteria for return to sport (RTS), correlation of the test results at six months following surgery with subsequent outcome is lacking. We sought to determine if patients with excellent functional and isokinetic performance at six months had 1) higher risk of subsequent ACL tears with earlier RTS, 2) superior knee function, and 3) increased activity levels at mid-term follow-up compared to those with delayed clearance for RTS.

#### METHODS

We identified 223 patients who underwent primary ACL reconstruction by a single surgeon and had functional and isokinetic testing performed six months postoperatively. Patients were placed into two groups based on specific criteria from their performance data. An 'excellent' outcome was defined as having a satisfactory result in 6 of 7 isokinetic-strength and functional-testing categories. A satisfactory result was defined as 85% or greater performance in isokinetic strength and 90% or greater performance in functional testing compared to the contralateral knee. The excellent group was representative of patients that were allowed to return to full activities at six months after surgery. Of the 223 patients, 52 (23.3%) met criteria for the early RTS group, and the remaining 171 (76.7%) constituted the delayed RTS group. Rate of ACL-graft tear (ipsilateral) and native-ACL tear (contralateral) were compared between the early and delayed RTS groups. In addition, International Knee Documentation Committee (IKDC) and Tegner scores at a minimum two-year follow-up were compared between the two groups.

#### RESULTS

Ten (4.5%) patients had an ipsilateral graft rupture, and 17 (7.6%) had a contralateral ACL tear after mean follow-up of 3.7 years (range 2-10). The graft rupture rate was similar in the early RTS group (3.8%, n=2) compared to the delayed RTS group (4.7%, n=8; p=0.30). However, there was a higher rate of contralateral ACL tear in the early RTS group (15.4%, n=8) compared to the delayed RTS group (5.3%, n=9; p=0.003). The early RTS group had superior IKDC scores (94.3 + 6.4 vs 90.9 + 9.7; p=0.04) and Tegner scores (6.6 + 1.8 vs 5.7 + 1.6; p=0.01).

#### DISCUSSION & CONCLUSION

Patients with an excellent performance on their isokinetic-strength and functional testing at six months after ACL reconstruction have superior knee function and higher activity levels at mid-term follow-up. However, these patients appear to be at greater risk of contralateral ACL injury, which may be related to their increased activity level.