

# Timing of Anterior Cruciate Ligament Reconstruction Influences Rates of Concomitant Procedures and Risk of Revision Surgery

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## INTRODUCTION:

The purpose of this study is to utilize a large cross-sectional database to analyze the effects of time duration between diagnosis of ACL tear and ACL reconstruction on concomitant procedures performed and revision surgery within 2 years.

## METHODS:

Methods: An analysis from 2015 to 2018 was performed using the Mariner PearlDiver Patient Records Database. Current Procedural Terminology (CPT) and International Classification of Diseases (ICD-10) codes identified patients with a diagnosis of ACL tear who underwent subsequent ACLR. Patients were stratified in biweekly and bimonthly increments based on the time duration between initial diagnosis of ACL tear and surgical treatment. Chi-squared analysis was used to compare categorical variables, and trend analysis was performed with Cochran-Armitage independence testing.

## RESULTS:

Results: Of 11,867 patients who underwent ACLR, 76.1% underwent surgery within 2 months of injury diagnosis. Patients aged 10-19 were most likely to undergo surgery within 2 months of injury diagnosis (83.5%,  $P < 0.0001$ ). As duration from injury diagnosis to ACLR increased from  $< 2$  months to  $> 6$  months, rates of concomitant meniscectomy increased from 9.1% to 20.5% ( $P < 0.0001$ ). The overall 2-year revision surgery rate was 5.3%. The incidence of revision ACLR was highest for patients who underwent surgery  $> 6$  months after diagnosis ( $P < 0.0001$ ), while the incidence of ipsilateral lysis of adhesions and manipulation under anesthesia was highest for patients who underwent surgery  $< 2$  months after diagnosis ( $P < 0.0001$ ). ACLR at 6-8 weeks after diagnosis demonstrated the lowest risk for concomitant procedures as well as 2-year revision surgery.

DISCUSSION AND CONCLUSION: The majority of patients undergo ACL reconstruction within 2 months of initial ACL tear diagnosis. Delayed surgery greater than 6 months after tear diagnosis leads to increased need for concomitant meniscectomy as well as higher risk for revision ACLR within 2 years, but immediate surgery may increase risk for knee arthrofibrosis.

