

Surgical predictors of clinical outcome six years following revision ACL reconstruction

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Orthopedic surgeons know that knee surgeries that require revisions have inferior outcomes compared with primary surgeries but until now, the reason for this was unknown. Today a team of orthopedic physicians reports that opting for a transtibial surgical approach and choosing an interference screw for femoral and tibial fixation will improve the patient's odds of having a significantly better six-year clinical outcome.

The research was presented today at the American Orthopedic Society of Sports Medicine- Arthroscopy Association of North America Combined 2021 Annual Meeting by Rick Wright MD, Vanderbilt University Medical Center, Nashville, TN.

A team of orthopedic physicians and researchers from Washington University, St. Louis, MO., and Vanderbilt University Medical Center in Nashville, Tenn., designed a study to determine if surgical factors performed at the time of revision [anterior cruciate ligament reconstruction](#) have the ability to influence a patient's outcome at six-year follow-up.

Anterior cruciate ligament injury, which usually comprises a complete rupture or tear of the ligament, is one of the most common knee injuries. Surgery comprises ACL reconstruction, where the damaged ACL is replaced by either an autograft (tissue, such as part of the patellar tendon or hamstring tendons, extracted from the person's own body) or an allograft (a specially treated tendon or ligament extracted from a human cadaver) under arthroscopic control.

The researchers enrolled 1,234 revision ACL reconstruction patients (58 % male and 42 % female) between 2006 and 2011. Data collected included baseline demographics, surgical technique and pathology, and a series of validated patient-reported outcome instruments (IKDC, KOOS, WOMAC, and Marx activity rating score). Patients were followed up for 6 years and asked to complete the identical set of outcome instruments.

At six years, follow-up was obtained on 77% (949/1234) of the patients. The researchers found three significant drivers of poor outcomes among these patients, including that surgical variables driving outcome in revision patients were related to femoral and tibial fixation.

Using an interference screw for femoral fixation compared with a cross-pin resulted in significantly better outcomes in six-year IKDC scores (OR=2.2; 95% CI=1.2, 3.8; p=0.008), KOOS sports/rec and KOOS QOL subscales (OR range = 2.2-2.7; 95% CI=1.2, 3.8; p

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