

# ACL surgery may significantly improve physical health and function for at least six years in younger patients

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A new study appearing in the April issue of *The Journal of Bone & Joint Surgery (JBJS)*, found that most patients who underwent surgery to repair and rebuild an anterior cruciate ligament (ACL) tear, showed significant improvement in physical function at two years, which continued for at least six years following surgery. Younger patient age, lower body mass index (BMI), and having the remnants of the torn ACL completely excised during surgery, were among the strongest predictors of positive, long-term outcome.

With over 200,000 incidents per year in the United States, ACL tears are among the most common knee injuries, particularly among active teens and young adults. The bones of the knee are connected by four primary ligaments which act like strong ropes to stabilize the knee. The ACL runs diagonally in the middle of the knee, preventing the tibia from sliding out in front of the femur.

In this study, researchers reviewed and evaluated the outcomes of 1,411 patients (44 percent female; average patient age at enrollment, 23) who underwent ACL surgery between 2002 and 2004 at four major medical centers. Each patient completed questionnaires—assessing health, well-being and function—prior to surgery, and again at two and six years after surgery.

"We found that health related quality of life was significantly improved

following ACL reconstruction, and this improvement was still present six years following surgery," said University of Wisconsin orthopaedic surgeon and lead study author Warren R. Dunn, MD, MPH. "The predictors for good and poorer outcomes may be helpful when counseling patients who are considering ACL surgery."

Specifically, the average physical health score was 41.9 and the mean mental health score was 51.7 at baseline. At two years after surgery, the physical and mental health scores were stable at 53.6 and 52 points, respectively, and 54 and 52.4 at year six. Among the other findings:

- ACL reconstruction resulted in large improvements in the physical function scores, with a mean improvement of 12 points (out of 100) at two years and six years following surgery.
- At six years following ACL surgery, patients gained a mean 5.3 quality-adjusted life years (QALYs). One QALY represents one year of perfect health; .5 QALY, six months.
- Baseline activity level was a significant predictor of [mental health](#) scores, but not physical function scores.
- Predictors of worse postoperative outcomes were a shorter follow-up time following surgery, revision ACL reconstruction, smoking at baseline, fewer years of education, and damage to the cartilage under the knee cap (chondromalacia patella).
- Physical function continued to improve over the long term following reconstruction. Patients requiring a revision reconstruction did not fare as well as patients undergoing a single reconstruction.
- Mental health scores over the six-year period did not significantly change, but scores consistently remained above the population norm of 50 points.

The study results complement an October 2013 JBJS study which found that ACL reconstruction is the best, most cost-effective option to repair

a partial or complete ACL tear. Surgery is especially beneficial when the patient is active, such as a high school or college-age athlete interested in returning to their sport and active lifestyle following treatment. Read more about the value of ACL [surgery](#) at [ANationinMotion.org](http://ANationinMotion.org).

**More information:** *JBJS*, [jbjs.org/content/97/7/551](http://jbjs.org/content/97/7/551)

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