

# Outcomes Following ACL Reconstruction Utilizing the Quadriceps Tendon Autograft: A Critically Appraised Topic

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*Editor's Note:* Critically Appraised Topics (CATs) are brief reviews and critiques of the literature. They are used to summarize of the best available patient-oriented evidence to answer a specific clinical question. Well-written CATs should be easily digestible for the reader and directly applicable to clinical practice. These summaries have a shelf life of approximately two years and will need to be revisited and updated on a regular basis.

## Clinical Scenario

Athletic trainers (ATs) providing medical coverage for sports such as basketball, football, or soccer, will most likely treat a patient who

sustains an anterior cruciate ligament (ACL) injury. A vast number of these patients will undergo ACL reconstruction (ACLR) to restore normal joint function with the goal of returning to previous activity as quickly as possible and with as little pain as possible. When preparing to undergo ACLR, these patients will undoubtedly be presented with graft choices and may seek out the AT's opinion to help ensure the

(BPTB) autograft or a hamstring tendon autograft. However, recently surgeons have explored the use of a quadriceps tendon autograft with bone plug (QTBP graft) for primary ACLRs to decrease donor site morbidity and postoperative complications associated with the other graft choices.<sup>1</sup> The QTBP graft involves harvesting the central third of the quadriceps tendon with a block of bone from the patella.<sup>1,2</sup> Since this technique has not been used extensively in the primary ACLR population, little is known regarding the short- and long-term outcomes. Understanding the outcomes following ACLR using a QTBP graft may assist the AT in educating future patients on outcomes; thus allowing the patient to make an informed decision regarding their ACL graft choice.

## KEY POINTS

*Clinical Question:* Is there evidence to suggest patients undergoing ACLR using the QTBP graft will report favorable short-term outcomes, as measured by subjective International Knee Documentation Committee form (IKDC), Tegner, or Lysholm scales?

*Clinical Bottom Line:* There is moderate evidence suggesting favorable short-term outcomes following ACLR using the QTBP graft. All studies reported improvements in patient outcomes when evaluated via patient-reported outcome instruments including the subjective IKDC, Tegner, or Lysholm scales.

best choice. A large majority of ACLRs are performed using a bone-patellar tendon-bone

## Focused Clinical Question

Is there evidence to suggest patients undergoing ACLR using the QTBP graft will report favorable short-term outcomes, as measured by subjective International Knee Documentation Committee form (IKDC), Tegner, or Lysholm scales?

## Search Strategy

A computerized search was completed in February 2014 (Figure 1). The search terms used were:

- Patient/client group: anterior cruciate ligament reconstruction and ACL
- Intervention: quadriceps tendon autograft or quadriceps tendon graft
- Comparison: not applicable
- Outcome: subjective IKDC or Tegner or Lysholm

The criteria for study selection were as follows.

### Inclusions Criteria

- Studies with patients who underwent primary ACLR using the QTBP graft
- Studies using the subjective IKDC, Tegner, or Lysholm as one of their outcome measures
- Prospective studies
- Level 2 evidence or higher
- Limited to the English language
- Published in the last 10 years (2005–2014)

### Exclusion Criteria

- Studies investigating outcomes following revision ACL or reconstruction of other ligaments
- Studies investigating outcomes following ACLR using a QT graft without a bone plug
- Studies investigating outcomes following ACLR using BPTB or hamstrings autografts or allografts

## Results of Search

### Summary of Search, Best Evidence Appraised, and Key Findings

- The search of the literature returned 32 possible studies for inclusion (Figure 1).
- Four relevant<sup>3-6</sup> studies met the inclusion criteria and were included (based on levels on levels of evidence, Centre for Evidence Based Medicine, 2009).
- One systematic review was excluded.<sup>7</sup>
- All studies used a prospective cohort design.
- The studies in Table 1 were identified as the best evidence and selected for inclusion in this CAT. Three

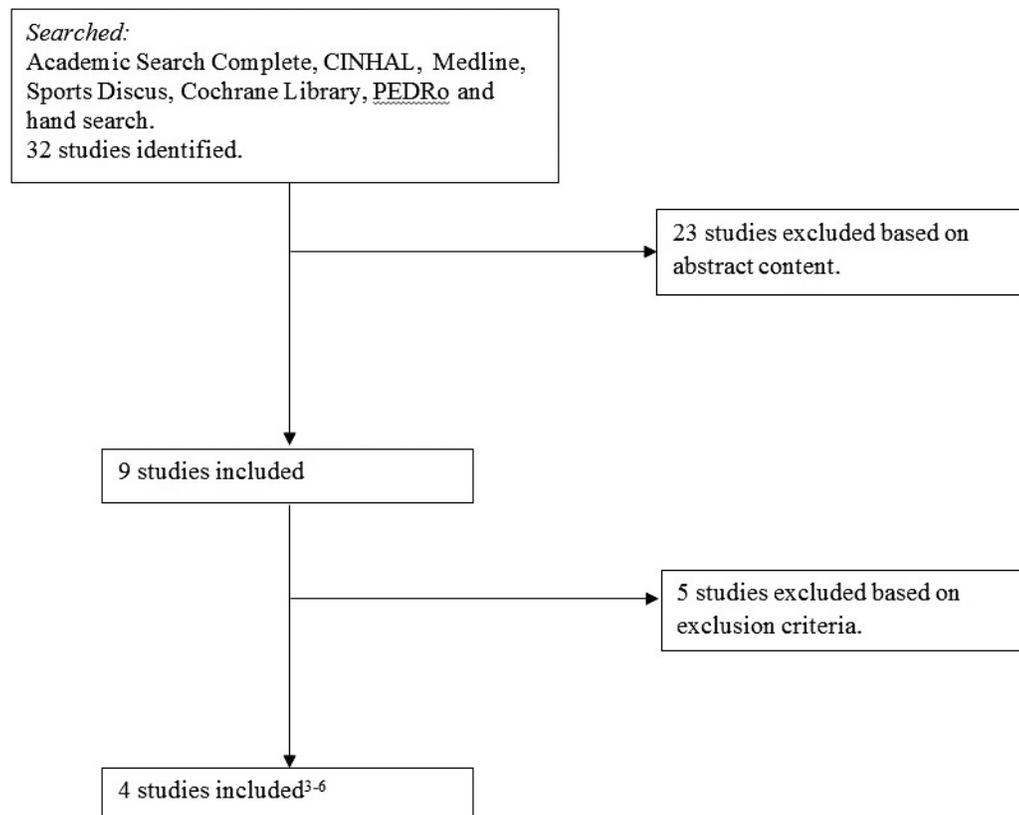


Figure 1 Summary of search history and included studies.