

Journal of Athletic Training

Home For Journal For Authors For Reviewers For Readers For Subscribers For Students Help

Home > [Journal of Athletic Training](#) > [May/June 2008](#) > Force Production and Reactive Strength Capabilities After Anterior Cru...

[Advanced Search](#)

National Athletic Trainers' Association Links

- [NATA Home](#)
- [Online Manuscript Submission and Review](#)
- [Advertising](#)
- [Facts & Figures](#)
- [Editor-in-Chief](#)
- [Journal Editors](#)
- [Editorial Board](#)
- [NATA Position Statements](#)
- [PubMed Central](#)
- [Search PubMed](#)
- [Contact Us](#)

[◀ Previous Article](#) [Volume 43, Issue 3 \(May/June 2008\)](#) [Next Article ▶](#)

 [Add to Favorites](#)  [Share Article](#)  [Export Citations](#)

 [Track Citations](#)  [Permissions](#)

[Full-text](#)

[PDF](#)

Article Citation:

Eamonn P. Flanagan, Lorcan Galvin, Andrew J. Harrison (2008) Force Production and Reactive Strength Capabilities After Anterior Cruciate Ligament Reconstruction. *Journal of Athletic Training*: May/June 2008, Vol. 43, No. 3, pp. 249-257.

doi: 10.4085/1062-6050-43.3.249

Original Research

Force Production and Reactive Strength Capabilities After Anterior Cruciate Ligament Reconstruction

Eamonn P. Flanagan, BSc, Lorcan Galvin, BSc, and Andrew J. Harrison, PhD

University of Limerick, Limerick, Ireland

Abstract

Context: Ambiguity exists in the literature regarding whether individuals can restore function to 100% after anterior cruciate ligament (ACL) reconstruction. The response of force production and reactive strength in stretch-shortening cycle activities after surgery has not been established.

Objective: To compare reactive strength and force production capabilities between the involved and uninvolved legs of participants who had undergone ACL reconstruction and rehabilitation with the reactive strength and force production capabilities of a control group.

Design: Repeated measures, cross-sectional.

Setting: Research laboratory.

Patients or Other Participants: Ten participants with ACL reconstructions who had returned to their chosen sports and 10 age-matched and activity-matched control subjects.

Intervention(s): We screened the ACL group with the International Knee Documentation Committee Subjective Knee Evaluation Form and functional performance tests to measure a basic level of function. We assessed force production capabilities and reactive strength using squat, countermovement, drop, and rebound jump protocols on a force sledge apparatus.

Main Outcome Measure(s): The dependent variables were flight time, peak vertical ground reaction force, leg spring stiffness, and reactive strength index.

Results: No participant in the ACL group exhibited functional deficits in comparison with normative values or the control group. Using the force sledge apparatus, we found no notable differences in force production capabilities and reactive strength in the ACL group when comparing the involved with uninvolved legs or the degree of difference between legs with the control group.

Volume 43, Issue 3
(May/June 2008)

[< Previous](#) [Next >](#)



[Current Issue](#)
[Available Issues](#)

Journal Information

Print ISSN 1062-6050

eISSN 1938-162X

Frequency Bimonthly:

January/February
March/April
May/June
July/August
September/October
November/December

Register for a Profile

Not Yet [Registered?](#)

Benefits of Registration Include:

- A Unique User Profile that will allow you to manage your current subscriptions (including online access)
- The ability to create favorites lists down to the article level
- The ability to customize email alerts to receive specific notifications about the topics you care most about and special offers

[Register Now!](#)

Related Articles

Articles Citing this Article

[Google Scholar](#)

Search for Other Articles By Author

- Eamonn P. Flanagan
- Lorcan Galvin
- Andrew J. Harrison

Search in:

Conclusions: After ACL reconstruction, rehabilitated participants did not exhibit deficits in force production or reactive strength capabilities. Our results suggest that force production and reactive strength capabilities can be restored to levels comparable with the uninjured control limb and may not be limiting factors in ACL recovery.

Keywords: [knee injuries](#), [leg spring stiffness](#), [functional performance tests](#), [force sledge apparatus](#)

Eamonn P. Flanagan, BSc, and Lorcan Galvin, BSc, contributed to conception and design; acquisition and analysis and interpretation of the data; and drafting, critical revision, and final approval of the article. Andrew J. Harrison, PhD, contributed to conception and design, analysis and interpretation of the data, and critical revision and final approval of the article.

Address correspondence to Eamonn P. Flanagan, BSc, Physical Education and Sport Sciences Department, University of Limerick, Limerick, Ireland, e-mail: eamonn.flanagan@gmail.com

top ▲