



Grant Information Summary:

Descriptive Epidemiology of Injury to the Cruciate Ligaments

Practical Significance Statement

Although cruciate ligament (CL) injuries are common in individuals who participate in physical activity and sport, the epidemiology of these injuries remain unclear. This study was able to determine the number of cruciate ligament injuries that occur annually, as well as describe the burden placed on the healthcare system by this injury.

Study Background

Despite the significance of CL injury, the basic epidemiology of injury to the anterior and posterior cruciate ligaments is not well documented. The only previous report specific to a managed care population addressed this issue in one state (California) and is over 20 years old. Thus, the purpose of this investigation was to address this gap in the literature by establishing the descriptive epidemiology of CL injury using a nationally-representative sample.

Objective

To establish the incidence and rate of CL injuries that occurs annually in the U.S. and the burden these injuries place on the healthcare system.

Design And Setting

Cross-sectional surveys performed by the National Center for Health Statistics (NCHS) provided a population-based sample of visits to physician in private practice, hospital outpatient clinics, and emergency departments from 1997 to 2004 for this analysis.

Subjects

Patients identified via secondary data analysis who completed surveys following physician visits served as subjects.

Measurements

Frequencies and estimates of the annual number of incident CL injuries were computed on the NCHS data set.

Results

There are 577,400 (95%CI: 393,100 - 761,700) physician visits annually in the U.S. for care of acute CL injury. Since 20% of visits were for initial care of an injury, there are 112,500 (95%CI: 31,100 - 193,800) acute incident CL injuries annually, for a rate of about 1 per 2,500 persons annually. Nearly 1/3 of all injuries were to 15-24 year olds. The rate in this age group was 1 per 1,100 persons annually. Males accounted for 56% of CL injuries and sports/recreational activities accounted for 79% of CL injuries. There are 75,000 (95%CI: 24,800 - 123,900) surgical reconstructions of the CL annually (not including inpatient surgery).

Conclusions

This study provides the first comprehensive and reliable national statistics on the incidence of CL injury in the U.S. Moreover, these data begin to uncover the large burden placed on the health-care system as a result of this injury.

Principal Investigator:



**Stephen W. Marshall,
PhD**

Stephen W. Marshall earned his PhD in Epidemiology at the University of North Carolina at Chapel Hill in 1998. Currently, Dr. Marshall is an Associate Professor of Epidemiology and Director of the Injury Program in the School of Public Health at the University of North Carolina at Chapel Hill. Additionally, he holds a joint appointment in the Department of Orthopedics in the School of Medicine, an adjunct appointment in the Department of Exercise and Sport Science, and is Core Faculty in the UNC Injury Prevention Research Center. Dr. Marshall is a sports injury epidemiologist with research interests in studying risk factors for sports injury, preventing sports injury, and evaluation of sports injury interventions. Specifically, he has addressed risk factors for rugby injury, high school sports injuries in North Carolina, protective equipment in youth baseball, prevention and management of concussions, and risk factors for ACL injury. He has numerous research publications in these areas, and his research has been well-funded.

Publication & Presentation List

Marshall SW, Padua DA, McGrath ML. Incidence of Cruciate Ligament (CL) Injury in the United States, 1997-2004. *NATA Annual Meeting*. Anaheim, CA, June 2007.

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