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Incidence and Risk Factors for Injuries to the Anterior Cruciate Ligament in National Collegiate Athletic Association Football

Data From the 2004-2005 Through 2008-2009 National Collegiate Athletic Association Injury Surveillance System

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Abstract

Background: Injuries to the anterior cruciate ligament (ACL) are common in athletic populations, particularly in athletes participating in football, soccer, and skiing.

Purpose: The purpose of this study was to analyze the National Collegiate Athletic Association (NCAA) Injury Surveillance System (ISS) men's football ACL injury database from the playing seasons of 2004–2005 through 2008–2009 to determine the incidence and epidemiology of complete injury to the ACL in NCAA football athletes.

Study Design: Descriptive epidemiology study.

Methods: The NCAA ISS men's football database was reviewed from the 2004–2005 through 2008–2009 seasons using the specific injury code, "Anterior cruciate ligament (ACL) complete tear." The injury rate was computed for competition and practice exposures. Ninety-five percent confidence intervals (CIs) for the incident rates were calculated using assumptions of a Poisson distribution. Pairwise, 2-sample tests of equality of proportions with a continuity correction were used to estimate the associations of risk factors such as event type, playing surface, season segment, and football subdivision. Descriptive data were also described.

Results: The ACL injury rate during games (8.06 per 10,000 athlete-exposures [AEs] 95% CI, 6.80-9.42) was significantly greater than the rate during practice (0.8 per 10,000 AEs 95% CI, 0.68-0.93). Players were 10.09 (95% CI, 8.08-12.59) times more likely to sustain an ACL injury in competition when compared with practices. When practice exposures were analyzed separately, the injury rate was significantly greater during scrimmages (3.99 per 10,000 AEs 95% CI, 2.29-5.94) compared with regular practices (0.83 per 10,000 AEs 95% CI, 0.69-0.97) and walk-throughs (0 per 10,000 AEs 95% CI, 0-0.14). There was an incidence rate of 1.73 ACL injuries per 10,000 AEs (95% CI, 1.47-2.0) on artificial playing surfaces compared with a rate of 1.24 per 10,000 AEs (95% CI, 1.05-1.45) on natural grass. The rate of ACL injury on artificial surfaces is 1.39 (95% CI, 1.11-1.73) times higher than the injury rate on grass surfaces.

Conclusion: Between 2004 and 2009, NCAA football players experienced a greater number of ACL injuries in games compared with practices, in scrimmages compared with regular practices, and when playing on artificial turf surfaces. This latter finding will need to be confirmed by additional studies. **Keywords**:

anterior cruciate ligament ACL injury football NCAA artificial turf

Footnotes

The authors declared that they have no conflicts of interest in the authorship and publication of this contribution.

Articles citing this article

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