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Original Research

The Role of Shoe Design in Ankle Sprain Rates Among Collegiate Basketball Players

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Abstract

Context: Much of the recent focus in shoe design and engineering has been on improving athletic performance. Currently, this improvement has been in the form of "cushioned column systems," which are spring-like in design and located under the heel of the shoe in place of a conventional heel counter. Concerns have been raised about whether this design alteration has increased the incidence of ankle sprains.

Objective: To examine the incidence of lateral ankle sprains in collegiate basketball players with regard to shoe design.

Design: Prospective cohort study.

Setting: Certified athletic trainers at 1014 National Collegiate Athletic Association (NCAA)-affiliated schools sponsoring basketball during the 2005–2006 regular season were notified of an online questionnaire. Athletic trainers at 22 of the 1014 schools participated.

Patients or Other Participants: A total of 230 basketball players (141 males, 89 females; age = 20.2 ± 1.5 years) from NCAA Division I–III basketball programs sustained lateral ankle sprains.

Main Outcome Measure(s): Ankle sprain information and type of shoe worn (cushioned column or noncushioned column) were collected via online survey. The incidence of lateral ankle sprains and type of shoes worn were compared using a chi-square analysis.

Results: No difference was noted in ankle sprain incidence between groups (χ^2 = 2.44, P = .20, relative risk = 1.47, 95% confidence interval [CI] = 0.32, 6.86). The incidence of ankle sprains was 1.33 per 1000 exposures in the cushioned column group (95% CI = 0.62, 3.51) and 1.96 per 1000 exposures in the noncushioned

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column group (95% CI = 0.51, 4.22).

Conclusions: No increased incidence of ankle sprains was associated with shoe design.

Keywords: cushioned column shoe system, athletic injuries, lower extremity injuries

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