

## **Prophylactic Bracing Decreases Ankle Injuries In Collegiate Female Volleyball Players**

Selene G. Parekh, MD, MBA<sup>1,2</sup>, David I. Pedowitz, MD, MS<sup>3</sup>, Sudheer Reddy, MD<sup>3</sup>,  
Russell Huffman, MD, MPH<sup>3</sup>, Brian J. Sennett, MD<sup>3</sup>

<sup>1</sup> Department of Orthopaedic Surgery, University of North Carolina, Chapel Hill, NC

<sup>2</sup> Kenan-Flagler Business School, University of North Carolina, Chapel Hill, NC

<sup>3</sup> Department of Orthopaedic Surgery, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania

### INTRODUCTION

Historically, ankle injuries have been exceedingly frequent among female collegiate volleyball players. Since 1998 ankle injuries have accounted for the highest percentage of injuries sustained by NCAA female volleyball players ranging from 18-36% of the total number of injuries in practices and games recorded by the NCAA. To our knowledge, there are no studies evaluating the use of prophylactic ankle braces in these athletes and furthermore, little if any, evidence demonstrating their effectiveness. The purpose of this study is to review our experience with this brace in preventing ankle injuries which result in a loss of play.

### MATERIALS AND METHODS

Injury data, including pre-participation medical histories, and total exposures was collected prospectively on all players at our National Collegiate Athletic Association (NCAA) Division I university from 1998 to 2005. Since 1998, all female volleyball players at our institution were required by the coaching staff to wear bilateral double upright padded ankle braces at all times (Active Ankle Brace, EBI Inc., Parsippany, NJ).

As is the case in the NCAA in their official Injury Surveillance System (ISS) database, pre-season practices and games were included in our data acquisition but post-season play was excluded from the evaluation. Injuries were identified based on criteria set forth by the NCAA. All injury data was recorded on a prospective basis. Injury rate data for female NCAA volleyball players obtained from the NCAA ISS between 1998 and 2004 was used for comparison as a control group. Statistical analysis was performed.

### RESULTS

There were a total of 13,500 exposures and one injury in our sample group yielding an injury rate of 0.08 per 1,000 exposures. There were 744,932 exposures and 611 injuries in the NCAA ISS comparison group with an injury rate of 0.82 per 1,000 exposures. This difference was statistically significant ( $p=0.002$ ) according to the Pearson's Chi Square and Fischer's Exact tests ( $P<0.001$ ).

## CONCLUSION

To summarize, in our cohort of athletes, prophylactic use of a double upright ankle brace significantly reduced our ankle injury rate compared to that reported by the NCAA Injury Surveillance System and those reported by other authors. Additionally, while nearly half of these athletes sustained ankle injuries prior to collegiate play, only one suffered an injury while wearing the brace. From our preliminary data, it appears that the use of such a brace is an effective way to decrease the incidence of ankle injuries in this active but vulnerable group of athletes.