

The Severity of Ulnar Collateral Ligament Injuries of the Elbow in Overhead and Non-Overhead Athletes in National Collegiate Athletic Association Sports from 2009-2010 through 2013-2014

Neill Y. Li MD; Steven F DeFroda, MD; Avi D Goodman, MD; Brett Owens, MD | Brown University, Providence RI

Introduction

- Ulnar collateral ligament (UCL) injuries of the elbow frequently occur in overhead athletes
- Severity of injuries in both overhead and non-overhead athletes are not described
- Use a national database of collegiate athlete injuries to analyze UCL injuries in non-overhead and overhead athletes was performed

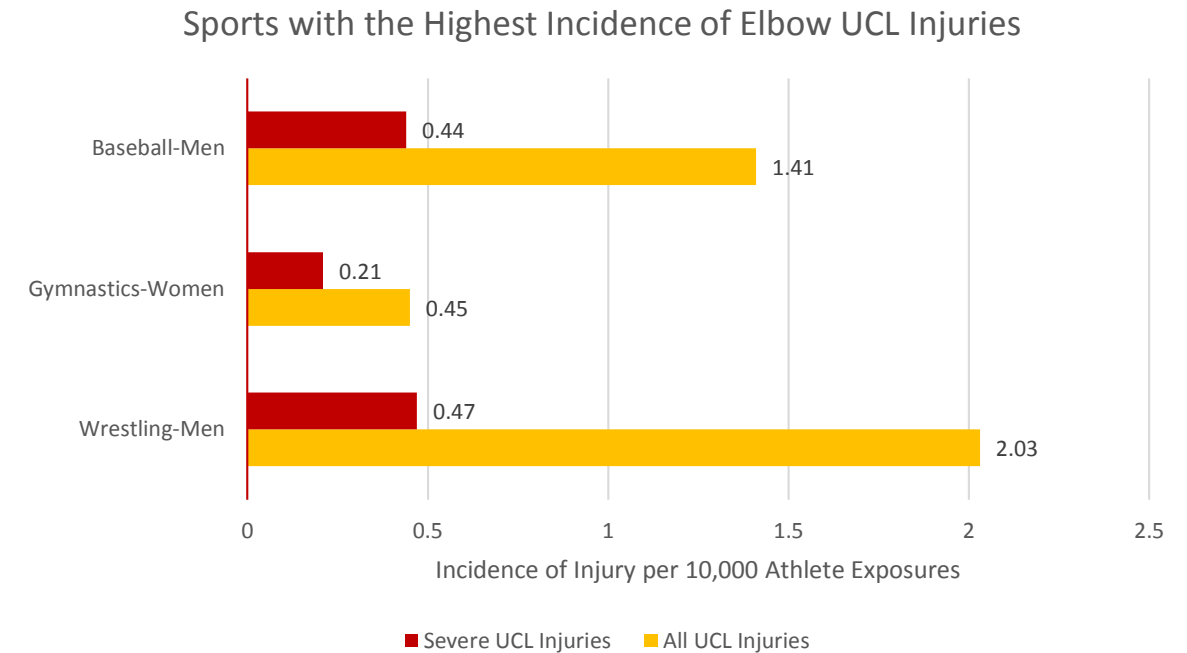
Methods

- National Collegiate Athletic Association (NCAA) Injury Surveillance System from 2009-2010 through 2013-2014
- Variables: Sport, sex, mechanism, event type, time loss, and outcome (e.g. season-ending, requiring surgery)
- Comparing overhead and non-overhead athletes by separation of throwing and non-throwing sports
- Severe injuries are loss of 21 days or an end to the season
- Incidence per 10,000 athlete-exposures (AEs) and rate ratios (RRs) of UCL injuries were conducted with 95% CIs and weighted to national estimates of annual incidence for each sport of occurrence

Results

- 5528 ulnar collateral injuries occurred over 3,050,988 athlete exposures between the 2009-2010 to 2014-2015 seasons
- Incidence of 0.42 injuries per 10,000AEs
- Highest in men's wrestling (0.47/10,000AEs) and men's baseball (0.44/10,000AEs)
- Severe UCL injuries more in practice than competition (RR: 1.5, 95% CI: 0.59-3.95)
- Male athletes sustaining more severe injuries than female athletes (RR: 1.78, 95% CI: 0.68-4.63)
- Throwing accounted for 76.6% of severe injuries (0.24/10,000AEs) vs contact (0.082/10,000AEs)
- Throwing with higher rate of severe UCL injury (RR: 2.6, 95% CI: 1.14-5.81) than contact
- Overhead athletes had a significantly higher rate of severe UCL injuries than non-overhead athletes (RR: 2.59, 95%CI: 1.08, 6.23)
- Overhead athletes with higher season ending injury rate (RR: 1.59, 95%CI: 0.52-4.86) and surgery rate (RR: 1.54, 95%CI: 0.16-14.8) than non-overhead athletes
- Athletes requiring surgery were men's baseball (n=256.6, 0.18/10,000AEs) and men's wrestling (n=33.6, 0.12/10,000AEs)

Figure 1



Conclusions

- Athletes requiring repetitive overhead actions are prone to severe UCL injuries resulting in a poor prognosis for subsequent play
- Severe UCL injuries also occur at a high incidence in non-overhead sports as a result of falling, blocking, or tackling
- Prognosis for return to activity of non-overhead athletes following severe UCL injuries are improved compared to overhead athletes
- Both overhead and non-overhead athletes are at risk for severe UCL injury warranting further discussion of the most appropriate management of elbow UCL injury prevention and protection