

Effectiveness of the Women's Lacrosse Protective Eyewear Mandate in the Reduction of Eye Injuries

Richard Y. Hinton¹, Andrew E. Lincoln², Shane V. Caswell³, Reginald E. Dunn², Mark Clough¹, Jon L. Almquist⁴. ¹*Union Memorial Hospital, Baltimore, MD.* ²*MedStar Research Institute, Baltimore, MD.* ³*George Mason University, Manassas, VA.* ⁴*Fairfax County Public Schools, Falls Church, VA.*

Abstract:

PURPOSE: The purpose was to evaluate the effect of the women's lacrosse protective eyewear mandate on eye injury rates at the high school level. In addition, we assessed changes in head and facial injury rates, as well as concussion and overall injury rates to address potential unintended consequences associated with the rule change.

METHODS: The high school women's lacrosse population was represented by the 25 public high schools in Fairfax County, VA, during the 2004-08 spring seasons. Injury rates were compared with those from the same data source during the 1999-2003 seasons. Pre-post mandate injury rates were evaluated adjusting for athletic-exposures, or total opportunities for injury to occur throughout the season.

RESULTS: The rate of eye injuries was reduced from 0.06 injuries per 1000 athletic-exposures during the period preceding the use of protective eyewear to 0.02 injuries per 1000 AE for the years 2004-07 (Incident Rate Ratio (IRR): 0.32, 95% CI: 0.11-0.96). Similarly, rates of other head/face injuries decreased with an IRR = 0.73, 95% CI: 0.42-1.20. However, IRRs of concussion (2.2, 95% CI: 1.5-3.2) and all injuries combined (1.5, 95% CI: 1.3-1.7) increased in the more recent time period.

CONCLUSIONS: Women's lacrosse rules were changed in 2003 to mandate the use of eye protection. Although women's lacrosse is an incidental contact sport, there have been higher rates of head and facial injuries among women than men reported in both the collegiate and high school level. This study identified a reduction in both eye and other head/face injuries following the rule change. This is one of a limited number of studies that have documented the effectiveness of a rule change or protective equipment in the prevention of sports injuries. Increases were identified for rates of concussions and all injuries post-mandate. Whether these increases are related to the introduction of protective equipment, improved recognition of concussion by clinical and team personnel, a perceived increase in the level of aggressive play over time, or some other cause remains to be determined.