



US Lacrosse Testimony

Concussions in Youth Sports: Evaluating Prevention and Research

Oversight and Investigations Subcommittee of the United States House Committee on Energy &

Commerce

2123 Rayburn

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Good afternoon Chairman Murphy, Vice Chairman McKinley, Ranking member DeGette and distinguished Members of the House Oversight and Investigations Subcommittee of the Energy & Commerce Committee. My name is Steve Stenersen, and I serve as the Chief Executive Officer for US Lacrosse, the sport's Maryland-based national governing body. Thank you for the opportunity to appear before you, as both a parent of lacrosse players and on behalf of US Lacrosse, to share our efforts to address player safety within boys' and girls' lacrosse, particularly in the area of sport-related concussion.

Our nonprofit organization has proactively led and funded many sport-specific injury prevention and research initiatives that have led to a number of recent interventions in the areas of rules, equipment and education. We also participate actively in the efforts of numerous national collaborations focused on reducing injury risk in youth sport, including the

American Orthopedic Society for Sports Medicine's STOP Sports Injuries campaign, the National Athletic Trainer's Association's Youth Sport Safety Alliance, and the United States Anti-Doping Agency's Supplement Safety Now initiative. I currently serve on the boards of the National Sport Concussion Coalition and PINK Concussions, and I have served as a member of the American College of Sports Medicine's Concussion Legislation Working Group, as well as the Ivy League Men's & Women's Lacrosse Committee on Concussion. US Lacrosse also collaborates regularly with the NCAA and NFHS on rule development and safety interventions in men's and women's lacrosse, and we continue to partner with the American Society of Testing & Materials and the National Operating Committee on Standards for Athletic Equipment to develop and refine lacrosse equipment standards. We collaborate with outstanding national and regional health organizations like the Centers for Disease Control & Prevention, MedStar Health and Fairfax County (VA) Public Schools to provide additional guidance and resources for our national membership.

Lacrosse is the oldest sport native to the North American continent. Native American play was first documented by Jesuit missionaries in the 1600s, so the sport has long been an integral part of Native American culture. Modern rules for lacrosse were first adopted in the late 19<sup>th</sup> century, but two distinctly different versions of the sport for men and women evolved in the first half of the 20<sup>th</sup> century. Participation in both versions of lacrosse grew incrementally until the sport experienced an unprecedented surge of popularity over the last twenty years, in part due to the formation of US Lacrosse as the sport's first national governing body in 1998. Since

that time, lacrosse has become one of the fastest-growing sports in the country, and US Lacrosse has grown to represent and serve over 450,000 members within 68 regional chapters throughout the United States.

While US Lacrosse operations have expanded significantly since the organization's inception, our commitment to lead and learn from lacrosse-specific research on the frequency and severity of injuries at every level of boys' and girls' lacrosse has always been a priority. We understand that effective stewardship of a sport requires empirical data on which to base effective safety interventions.

That's why we established a Sports Science & Safety Committee as one of ten board committees within our organizational structure when US Lacrosse was formed 18 years ago. This committee, which is currently chaired by Dr. Margot Putukian, Princeton University's Director of Athletic Medicine, is comprised of prominent medical and research professionals representing a variety of specialties, as well as representatives from a number of multi-sport organizations. Accordingly, US Lacrosse has been recognized as one of the most proactive sports organizations in the country relative to our commitment to injury prevention. In fact, US Lacrosse was recognized last May for its efforts to lead the sport in the areas of safety and education through the introduction of a Congressional Resolution, H.R. 267.

The US Lacrosse Sports Science & Safety Committee prioritizes and oversees research initiatives, recommends interventions to the US Lacrosse Board of Directors and leads the development of educational initiatives intended to reduce injury risk and directed to coaches, officials, players and their parents. The committee also issues position statements on various issues related to lacrosse safety.

The following represents a sampling of published research led by US Lacrosse and focused on player safety:

- Descriptive epidemiology of scholastic lacrosse injuries
- Head, face and eye injuries in scholastic and collegiate lacrosse
- Risks and mechanisms of severe injuries among youth, secondary school, collegiate and post-collegiate lacrosse players using insurance claims data
- Trends in high school lacrosse injuries
- Epidemiology of concussion in boys' and girls' high school lacrosse players
- Trends in sports-related concussion incidence at the high school level, 1998-2007
- Evaluation of the women's lacrosse protective eyewear mandate
- Epidemiology of lacrosse injuries among youth players

Additionally, the following are among US Lacrosse led or supported initiatives focused on injury prevention and education:

- Sponsorship of a bi-annual Lacrosse Sports Medicine Symposium
- Production of a lacrosse-specific concussion education video
- Development of an exercise program designed to reduce ACL injuries in lacrosse
- Development of women's lacrosse specific headgear performance standard
- Development of lacrosse-specific Concussion Management Plan Guidelines
- Enactment of playing rule changes that prohibit and more severely penalize body contact (boys) and stick checking (girls) at younger age levels
- Development of a Lacrosse Athlete Development Model based on the physical and cognitive development stages of children
- Development of single-age segmentation for boys' and girls' play

It's also important to note that US Lacrosse has invested significantly in the development and deployment of the sport's first standardized coaching and officiating education curricula, including accessible on-line resources and hands-on clinic sessions, which have formally trained and certified thousands of coaches and officials throughout the country in recent years. There is no more effective intervention to increase player safety than to require that coaches be properly trained to teach the sport...and that officials be properly-trained to consistently enforce rules. Unfortunately, public focus is too often directed at equipment interventions, which are far less effective in preventing injury than assuring that players are properly taught and games are properly officiated. Sport-specific education and certification programs offered by the national governing bodies of each sport should be a required credential for coaches and officials at every level play but, unfortunately, many youth and high school organizations do not require them. Among the biggest challenges US Lacrosse faces is convincing youth leagues and

state high school associations that requiring our national standards for coach and official education is fundamental to a safer and more enjoyable playing experience.

The prevention of lacrosse-related concussion has been a particular area of focus for US Lacrosse, we have committed as much or more time and resources to concussion education, research and prevention as any national amateur sports organization in the country, and the composition of our Sports Science & Safety Committee reflects that focus. Thankfully, our multi-faceted efforts appear to be making a difference.

It is well-documented that the benefits of playing youth sports far outweigh the risk of injury, and while the sport of lacrosse is considered to be relatively safe compared to other sports and activities, serious injuries such as concussions occur. There is much we have learned about the nature of concussion injuries in recent years – particularly the critical importance of recognizing concussion symptoms, and removing children suspected of receiving a concussion from play until cleared by a medical professional trained in concussion management. Landmark legislation such as the Lystedt Law has been instrumental to increased knowledge and awareness of this serious injury. Unfortunately, the inconsistency of similar laws and their enforcement from state to state has not optimized the intended impact of this legislative intervention.

We have also learned that no piece of protective equipment on the market today will prevent the biomechanics that trigger a concussion injury, that the mechanism of injury is different from sport to sport and, in the case of lacrosse, different in boys' lacrosse than girls' lacrosse. We have learned that the injury and its recovery can be a very different experience for girls than boys, which demands further focus and study. And, we have learned that increased sport specialization at younger ages is increasing the number of injury exposures to young athletes and contributing to increases in overuse injuries on developing bodies. Perhaps most importantly, we have learned that the vast majority of children who experience a concussion can recover fully if their injury is recognized quickly and they receive appropriate care.

In recent years, the levels of sports-related concussion awareness and knowledge have been raised significantly thanks to greater leadership and collaboration among state and federal agencies, the allied health community, nonprofit leaders and youth-serving sports organizations, like US Lacrosse, that have embraced the responsibility to effectively balance the integrity of a particular sport with the safety of participants.

Concussion remains a significant health concern in youth sports, and it will remain a priority for US Lacrosse. Accordingly, we will continue to invest in research that helps us learn more about the mechanism and frequency of the injury in both boys' and girls' lacrosse in order to advance educational, rule and equipment interventions that will be most effective in reducing the risk of the injury.

Again, thank you for the opportunity to share my thoughts on this important issue, as well as your efforts to increase the health and well-being of our nation's young athletes. I would be happy to answer any questions that you may have.



## Appendix

### Compilation of Lacrosse Head and Other Injury Research (2002-2016)

Prepared by US Lacrosse

- 1) ILFWLA, Biomechanical Study of Crosse Design (L. Livingston), 2002
- 2) Journal of Applied Biomechanics, Physical and Mechanical Properties of Various Field Lacrosse Balls, (J Crisco, E Drewniak, M Alvarez, D Spenciner) 2005,
- 3) AJSM, Epidemiology of Lacrosse Injuries in high School – Aged Boys and Girls: A 3 Year Prospective Study (Hinton, Lincoln et. al), 2005. Published in the American Journal of Sports Medicine in 2005, the authors gathered data on girls’ and boys’ lacrosse injuries for 359,040 high school and 28,318 summer camp athletic exposures using a lacrosse-specific computerized injury surveillance system. They found overall injury rates for boys’ and girls’ high school lacrosse were significantly lower than collegiate play.
- 4) ASJM, Head, Face, and Eye Injuries in Scholastic and Collegiate Lacrosse: A 4-Year Prospective Study (Lincoln, Hinton et. al), 2007. This article was originally published online January 4, 2007 in the American Journal of Sports Medicine. The authors gathered data on 507,000 girls’ and boys’ high school and 649,573 women’s and men’s college lacrosse athletic exposures using sport-specific injury surveillance systems over four seasons. They identified most common scenarios for head, face, and eye injuries.
- 5) NCAA (ISS) Research for women’s lacrosse, 2006-2007

- 6) Descriptive Epidemiology of Collegiate Women's Lacrosse Injuries, Published in the Journal of Athletic Training in 2007, this partner report to the men's report cited above, reviews 16 years of National Collegiate Athletic Association (NCAA) injury surveillance data for women's lacrosse and identifies potential areas for injury prevention initiatives.
- 7) Effectiveness of Women's Lacrosse Eyewear (Hinton et. al), 2008
- 8) Catastrophic Sports Injury Research 1982-2009, (Mueller, Cantu), 2009
- 9) ACSM Video Analysis poster, 2009 (Caswell, Lincoln, Almquist, Dunn and Hepburn)
- 10) AAP, Clinical Report Sports Related Concussion in Children & Adolescents (M. Halstead and Walter), 2010
- 11) ACSM and AJSM, Concussion Trends in High School Lacrosse - A prospective 11 year Study (Caswell, Lincoln, Almquist, Hinton and Norris) 2011 (published in ASJM 1/29/11)
- 12) ACSM Abstract: Video Incident Analysis of Head Injuries in High School Girl's Lacrosse (Caswell, Lincoln, Almquist, Dunn), 2011
- 13) AJSM, Video Incident Analysis of Head Injuries in High School Girls' Lacrosse (S. Caswell, A. Lincoln, J. Almquist, R. Dunn, and R. Hinton), 2013
- 14) AJSM, Video Incident Analysis of Concussions in Boys' High School Lacrosse, (S. Caswell, A. Lincoln, J. Almquist, R. Dunn, and R. Hinton) 2013
- 15) Clinical Journal of Sport Medicine, Rate of Injury Among Youth Lacrosse Players, (A. Lincoln, M. Yeager-McKeever, W. Romani, L. Hepburn, R. Dunn, and R. Hinton) 2013

- 16) Journal of Applied Biomechanics, Surrogate Headform Accelerations Associated with Stick Checks in Girls' Lacrosse (J. Crisco, L. Costa, R. Rich, J. Schwartz, and B. Wilcox) 2014
- 17) Johns Hopkins University, Bloomberg School of Public Health, Grand Rounds Presenter, Youth Sports Through A Public Health Lens (A. Lincoln, B. Griffin) 2014
- 18) Injury Epidemiology, The epidemiology of boys' youth lacrosse injuries in the 2015 season (Z. Kerr, S Caswell, A Lincoln, A Djoko, T Dompier) 2016
- 19) ASSM, Boys Lacrosse Tournament Game Injuries; Boston (L. Hepburn, A. Lincoln, S. Caswell, B. Griffin) 2016