

**Background** Sport specialization can impact physical and mental aspects of the individual athlete.

**Objective** To evaluate the relationship between sports participation history, success, health status, and injury.

**Design** Recall Survey.

**Setting** Major League Baseball Team.

**Patients (or Participants)** 107 Major League Baseball Players.

**Interventions (or Assessment of Risk Factors)** A posteriori assessment of years of single sport participation, overall participation in sport, current age.

**Main Outcome Measurements** Determination of the impact of duration of sports participation and specialization on injury, adjusting for age.

**Results** 75% of the athletes reported playing at least one other sport competitively; primarily basketball. The average years playing baseball was (19) and the average years specializing in baseball was (9). 80 (75%) reported being born and raised in the U.S. 12% reported that their mother played high-level sports while 37% reported that their father played high-level sports with 63% of those playing baseball. 7 injuries that prohibited participation for at least 12 weeks were reported. The greatest proportion of active athletes who were injured occurred at 16% (age 24). A Cox model with a time varying covariate representing specialization, adjusted for the age athletes started baseball, showed no significant relationship between specialization and injury. The time scale used in the model was years since an athlete started baseball. On average specialization had a substantial impact on their elite success was 7 on a scale of 0 (No impact) to 10 (Extreme Impact). Compared to non-elite athletes respondents indicated that on average their physical, emotional health, and general well being was better.

**Conclusions** Elite athletes perceive that specialization is important to playing at a high level. They are physically, emotionally healthier and have a greater well being than non-athletes their age. A time to event modeling to determine the impact of duration of sports participation and specialization on injury, adjusting for the age players started baseball did not demonstrate a significant relationship between specialization and injury.

### 362 US YOUTH SOCCER COACHES DO NOT POSSESS ADEQUATE KNOWLEDGE OF NON-CONTACT ACL INJURIES AND INJURY PREVENTION PROGRAMS

Shelly Fetchen DiCesaro. *California University of Pennsylvania, California, USA*

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**Background** Non-contact anterior cruciate ligament (NC-ACL) injuries have been shown to occur more often for female soccer players as opposed to their male counterparts; however, it has been demonstrated that prevention programs may significantly decrease these injuries. US Youth Soccer players are predominately coached by volunteers who may not have an understanding of preventative strategies.

**Objective** To assess understanding of NC-ACL injuries and the implementation of prevention programs in US Youth Soccer coaches.

**Design** Cross-sectional descriptive survey.

**Setting** Blind online survey administered to volunteer US Youth Soccer coaches.

**Patients (or Participants)** Individuals over 18 years of age who were registered with US Youth Soccer as a volunteer coach received the survey. The exact number of email invitations to participate opened was unattainable.

**Interventions (or Assessment of Risk Factors)** A 51 question survey was used to determine knowledge regarding NCACL injuries. Survey questions were constructed from a literature review and expert experience.

**Main Outcome Measurements** The main outcome measure is the percentage of correct answers on the survey with a score of 75% deemed knowledgeable.

**Results** Three hundred and fifty-six (356) surveys were accessed from the email invitation with 330 suitable for data analysis. Participants scored an average of 18 questions incorrect for a total knowledge score of 63.98%, below the required 75%. Additionally, scores for males (n=277, score = 63.83%) and females (n=53, score = 64.70) did not differ significantly as analyzed by t-test with a p=0.47.

**Conclusions** US Youth Soccer coaches do not possess adequate knowledge of NC-ACL injuries and implementation of prevention strategies. Further analysis may elicit significance between scores specific to experience, length of time coaching and previous injury prevention program education. Coaches and their players would benefit from mandatory standardized education and strategies for implementation into lesson plans and practice.

### 363 COACH EDUCATION AS A STRATEGY TO IMPROVE ADHERENCE TO ACL INJURY PREVENTION PROGRAMS: A CLUSTER-RANDOMIZED CONTROLLED TRIAL

Daphne Ling, Caroline Boyle, Brandon Schneider, Joseph Janosky, James Kinderknecht, Robert Marx. *Hospital for Special Surgery, New York, USA*

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**Background** Despite evidence of its efficacy, ACL injury prevention programs have had limited success in convincing coaches to perform the recommended exercises.

**Objective** We evaluate a coach education workshop that trains coaches on how to implement an injury prevention program and measure the impact of this strategy on adherence rates.

**Design** Cluster-randomized controlled trial.

**Setting** High school sports teams.

**Participants** Eight high schools were recruited and randomized 1:1 to the intervention or control arm. The intervention schools contained 12 teams (5 girls), and the control schools contained 10 teams (4 girls). The sports included basketball, volleyball, track and field, baseball/softball, and lacrosse.

**Interventions** Our institution's Sports Safety Program has developed a 60-minute education workshop aimed at coaches that teaches them how to provide exercise instruction and to correct movement deficiencies using feedback cues. The schools in the control arm received print materials on recommended exercises.

**Main Outcome Measurements** Coach adherence was the main outcome. Eight data collectors, who were blinded to the team's assignment, were trained to observe a team's practice or game 3 times a week. At each session, they completed a survey to identify the exercise and then answered whether the coach 1) provided exercise instructions and 2) provided feedback cues.