membership, hours spent at the club, number of sports activities at the club, types of activities practiced at the club.

Main Outcome Measurements The main measurement is the self-medication.

Results Almost half of our 338 amateurs (49.7%) visiting fitness centers admitted to self-medicate in the context of sport practice. Among them 36.4% take dietary complements and 22.5% used drugs. The probability of self-medication increases significantly with the number of hours of sports practice, with the participation to body-building group lessons and with the consumption of sports drinks. Furthermore, 20% of the substances consumed, whether self-medicated or not, contained potentially doping substances.

Conclusions We could highlight a significant prevalence of self-medication among amateur athletes visiting fitness centers. The intensity and frequency of sports practice seems to play a key-role regarding the decision to self-medication. Given the health risks entailed by these practices it seems crucial to implement information and prevention measures regarding self-medication. Moreover, it would be interesting to lead further research assessing the adverse consequences of self-medication among this specific population.

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SERUM VITAMIN D LEVELS AND RISK OF MUSCULOSKELETAL INJURY IN UNIVERSITY TRACK AND FIELD ATHLETES

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Background While vitamin D has been shown to be an important factor in muscle, tendon, and bone health, there is limited data on the relationship of serum vitamin D levels and injury risk in otherwise healthy collegiate athletes.

Objective To determine the prevalence of inadequate serum vitamin D levels in Division I collegiate athletes and risk of musculoskeletal injury in relation to vitamin D levels.

Design Retrospective review of injury tracking database records of track and field athletes at our institution was performed to collect age, race, serum vitamin D level, and injury history.

Setting Division I collegiate athletics.

Patients (or Participants) Track and field athletes at our university who underwent serum vitamin D testing between October 2018 – February 2019.

Interventions (or Assessment of Risk Factors) Vitamin D level was measured using serum total 25-hydroxy vitamin D (25-OH vitamin D). Insufficient and deficient values were combined and labeled as 'inadequate' if they were measured to be less than 32 ng/mL. Information was collected for 34 athletes (13 males, 21 females).

Main Outcome Measurements Serum 25-OH vitamin D level and musculoskeletal injury history

Results Of the 34 athletes tested 14 were measured in the inadequate range (16.4 ng/mL to 29.4 ng/mL). 6 of 7 female sprinters and all male sprinters (n=2) fell in the inadequate range. Statistically significant correlation was demonstrated between race and vitamin D level with more black athletes demonstrating inadequate vitamin D levels ($p=.035$). There was no statistical correlation between athletes sustaining injuries and having inadequate serum vitamin D levels.

Conclusions Among Division I collegiate track and field athletes there was no statistical correlation between inadequate serum vitamin D levels and musculoskeletal injury risk. There was a higher rate of inadequate serum vitamin D levels among black athletes. Future studies with larger numbers of athletes may demonstrate a correlation between low serum vitamin D levels and musculoskeletal injury rate.

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KNOWLEDGE, ATTITUDE AND USAGE OF DOPING DRUGS AMONG NATIONAL LEVEL ATHLETES IN SRI LANKA

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Background Doping incidence has been increased in sports at all levels. Therefore a need for alternative approaches to address the doping concerns has arisen because doping not only threatens the health of athlete but also the true spirit of sport.

Objective To assess knowledge, attitudes and usage regarding doping among national level Sri Lankan athletes and to identify reasons for doping and to plan better doping prevention strategies were the objectives.

Design Cross sectional descriptive study in which self-administered questionnaire was used to assess knowledge and usage of doping drugs. A modified version of Performance Enhance Attitude Scale was used to assess attitudes.

Setting 20 national teams/pools of Sri Lanka for the years 2018/2019

Patients (or Participants) 347 national athletes recruited through stratified and random sampling

Results The majority of athletes (66.6%) could not define the term WADA. Not more than 38% of athletes were aware about any given drug. Though attitudes regarding doping were positive in general, 8.3% of athletes admitted they would dope if they got a chance while athletes of individual sports had negative attitudes. According to Randomized Response Technique used, 8.4% of athletes had admitted usage of doping drugs. Doping was highest among athletes in individual sports (18.2%). Lack of knowledge, lack of self confidence and pressure to win were the main reasons for doping. Younger age, less experience, professionally being only an athlete, negative attitudes and knowing fellow athletes who used doping drugs were significantly associated ($p<0.05$) with doping.

Conclusions Younger inexperienced athletes and athletes of individual sports were more prone to doping and authorities should take special care of them. Actions should be taken to fill the knowledge gaps regarding doping. Special attention should be paid to improve positive attitudes regarding doping because negative attitudes were associated with doping than poor knowledge.

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THE IMPACT OF SPORT SPECIALIZATION ON INJURY, SUCCESS, AND PERCEPTIONS OF HEALTH

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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

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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

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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.