Background Professional American football players (PAFP) are at high risk for musculoskeletal (MSK) injuries during their season. Little is known about how artificial intelligence (AI) enhanced force plate countermovement jump (CMJ) indices measure musculoskeletal and physiological change, and if these changes across seasons contribute to increased injury risk, especially after an extended layoff from training and participation such as occurred with the Covid-19 lockdown.

Objective Examine longitudinal changes in force plate CMJ measures in PAFP over multiple seasons and to determine if these measures were valid indicators of MSK health. Hypotheses tested: force plate CMJ indices are a valid measure of MSK health and these measures would decrease as injury risk would increase after Covid-19 lockdown.

Design Longitudinal force plate study

Setting Professional American Football

Patients (or Participants) 483 PAFP

Interventions (or Assessment of Risk Factors) Force plate measures in PAFP

Main Outcome Measurements CMJ force plate measures in PAFP

Results 483 unique individuals scanned over four pre-seasons. 109 unique individuals had repeat pre-seasons during that time. 949 force plate CMJ tests were performed over those four pre-seasons. The AI-generated conglomerate variable MSK Health was on average 47.8 ± 9.7 in 2017, 47.4 ± 10.1 in 2018, 47.5 ± 10.1 in 2019, and 45.0 ± 11.2 in 2020 post-Covid lockdown. ANOVA showed that 2020 measures of MSK Health were significantly decreased relative to the 3 prior seasons. Logistic regression analysis demonstrated a significant effect of the MSK Health variable on MSK injury risk.

Conclusions Across multiple seasons of force plate CMJ measures in PAFP, MSK Health decreased following Covid-19 lockdown, which may be associated with higher risk for MSK injury. This greater understanding of the changes in longitudinal CMJ force plate measures in PAFP across seasons and after extended layoffs may assist in the development of effective MSK injury reduction measures.

Objective 1) To analyze the type and localization of injuries among FG and what are the associated risk factors for these injuries 2) To verify whether there is any injury prevention program tailored for FG.

Main Outcome Measurements Type of injuries, localization of injuries, types of injury prevention programs, injury incidence (injuries/1000 training or match-play hours), percentage distribution of injury type, percentage distribution of injury localization.

Results Our searches identified 813 potentially relevant articles. By reviewing titles and abstracts, we identified 52 potential articles examining type and localization, and risk factors of injuries amongst FG, and biomechanical effects of applying injury prevention accessories (e.g., shorts, pads, etc.). There were no original scientific papers reporting the effectiveness of any tailored injury prevention programs implemented in a FG population. However, there was one short communication published as an abstract, confirming significant reductions in the total number of the upper extremity injuries following the application of FIFA 11+ program (RR=0.42 [0.31–0.56]; p<0.00001, NNT-5.1).

Conclusions More investigations are needed to develop and evaluate effectiveness of injury prevention strategies tailored for FG.

Background Para athletes from less-resourced countries have the highest need for protection against abuse in sport; however, their experiences and perceptions of abuse have not been studied.

Objective To describe Para athletes’ experiences and perceptions of abuse in sport, and systematically investigate the sociocultural drivers of those perceptions to inform culturally-relevant strategies to better protect vulnerable athletes.

Design Qualitative data were collected in the form of focus groups with Para athletes from Ghana, Brazil, and India. Data were analyzed using the Framework Method for Multidisciplinary Qualitative Analysis and transcripts were coded and analyzed by the research team.
Abstracts

Setting Focus groups were conducted with Para athletes at the National Paralympic training center in Accra, Ghana and virtually via Zoom.

Participants Twenty-six national- and international-level Para athletes with varying disabilities, 18 years or above, living and training in Ghana, India, or Brazil.

Main Outcome Measurements Four a priori themes with multiple subthemes were considered: characteristics of, effects of, growth after, and strategies to address abuse.

Results Athletes described a wide range of harms experienced both within and outside of sport. In addition to more commonly recognized modes of abuse such as physical and sexual, athletes focused on three less easily recognized forms of abuse: financial abuse, neglect, and disability stigma. Athletes described abuse as operating on both interpersonal and systemic levels. Cultural and societal factors influenced athletes’ perceptions and experiences of harms.

Conclusions Para athletes from less-resourced countries represent the largest pool of global sportspersons eligible for Olympic-level participation, and have the highest need for protection against abuse, but their voices are seldom heard. Sport stakeholders concerned with abuse prevention must understand their experiences and integrate their insights and priorities into sport safeguarding policies, programs, and interventions. As new insights are added to the current evidence base, athlete-generated and locally-relevant preventative strategies can better protect all athletes.

446 INCIDENCE OF HEAD CONTACTS, PENALTIES AND PLAYER BEHAVIOUR IN YOUTH ICE HOCKEY: EVALUATING THE ‘ZERO TOLERANCE FOR HEAD CONTACT’ POLICY CHANGE

1Rylen A Williamson, 2Ash T Kolstad, 3Maciej Krolkowski, 4Luc Nadeau, 5Claude Goulet, 1,2,3,4Brent Hage, 1,2,3,4Carolyn A Emery, 1Sport Injury Prevention Research Centre, University of Calgary, Calgary, Canada; 2Alberta Children’s Hospital Research Institute, Calgary, Canada; 3Departments of Paediatrics, Cumming School of Medicine, University of Calgary, Calgary, Canada; 4Department of Community Health Sciences, Cumming School of Medicine, University of Calgary, Calgary, Canada; 5Department of Physical Education, Faculty of Education, Universit Pierre and Marie Curie, Paris, France

Main Outcome Measurements Four priori themes with multiple subthemes were considered: characteristics of, effects of, growth after, and strategies to address abuse.

Results Athletes described a wide range of harms experienced both within and outside of sport. In addition to more commonly recognized modes of abuse such as physical and sexual, athletes focused on three less easily recognized forms of abuse: financial abuse, neglect, and disability stigma. Athletes described abuse as operating on both interpersonal and systemic levels. Cultural and societal factors influenced athletes’ perceptions and experiences of harms.

Conclusions Para athletes from less-resourced countries represent the largest pool of global sportspersons eligible for Olympic-level participation, and have the highest need for protection against abuse, but their voices are seldom heard. Sport stakeholders concerned with abuse prevention must understand their experiences and integrate their insights and priorities into sport safeguarding policies, programs, and interventions. As new insights are added to the current evidence base, athlete-generated and locally-relevant preventative strategies can better protect all athletes.