



# Epidemiology of Lower Extremity Injuries in Collegiate Student-Athletes: Insights from the Pac-12 Health Analytics Program.



Lexie K. Ross, Michael Tuffiash, Kevin Robell, Kenneth J. Hunt  
Department of Orthopedic Surgery, University of Colorado School of Medicine

## Background

- Sports injury surveillance provides the ability to monitor and identify risk factors related to sport participation.
- Surveillance systems at the collegiate level have historically been limited by lack of standardization, scale, and access.
- The Pac-12 Health Analytics Program (HAP) standardizes injury metrics across all Pac-12 institutions and provides unprecedented database access to sports medicine researchers.
- This proof-of-concept study aims to demonstrate the role the HAP might play in identifying trends in sports injuries among NCAA Division I student-athletes.

## Methods

- Retrospective epidemiological study utilizing a deidentified HAP dataset.
- Time period covered: 2017-2020
- Lower extremity (LE) musculoskeletal (MSK) injury variables characterized:
  - Gender
  - Sport/Team
  - Days elapsed from injury date to exam date
  - Body part injured
  - Type of injury
  - Onset of symptoms
  - General mechanism of injury
  - Season
  - Event order of occurrence
  - Injury outcome

## Results

- 9444 student-athletes followed across 4 years
- 13316 LE MSK injuries characterized from 33432 total injuries (38.83% of total injuries)
- 41 types of injury characterized across 31 varsity sports
- 20 general mechanisms of injury characterized
  - Most common: running (2187 injuries, 16.42% of total injuries), contact with other player (1558, 11.70%) and cutting/change of direction (1106, 8.31%)

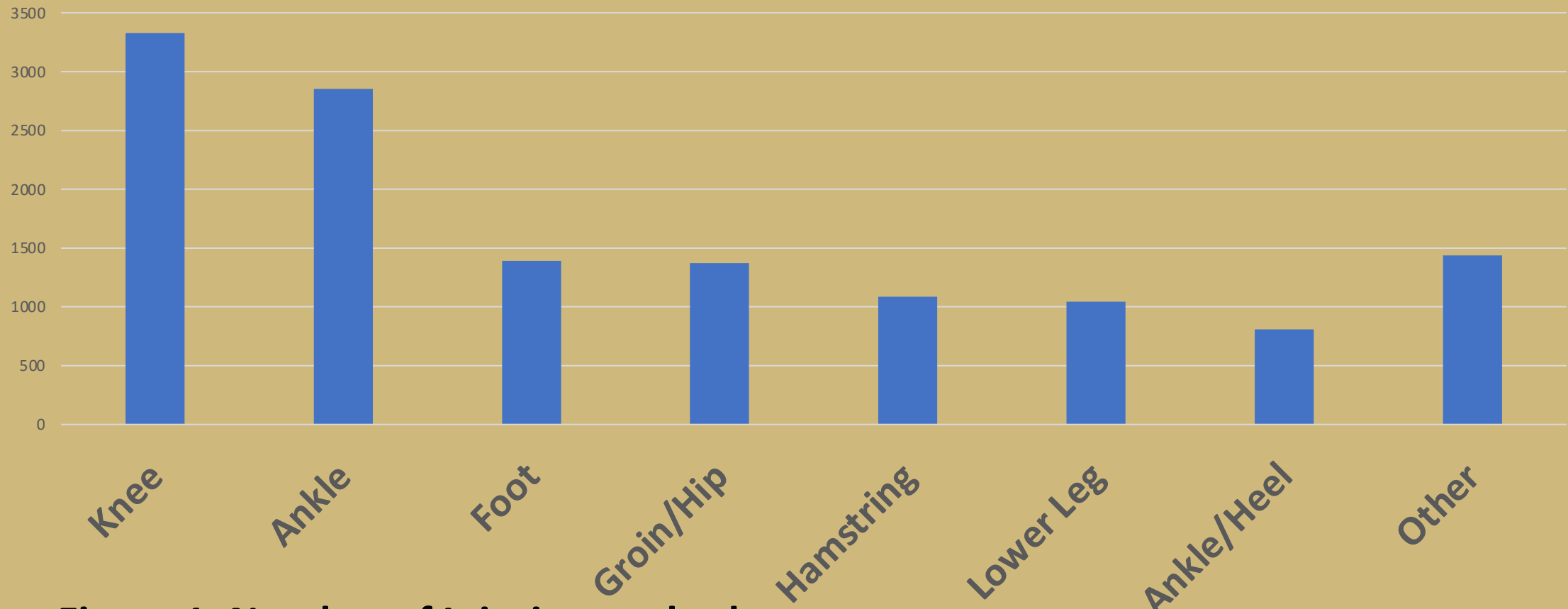


Figure 1. Number of Injuries per body part.

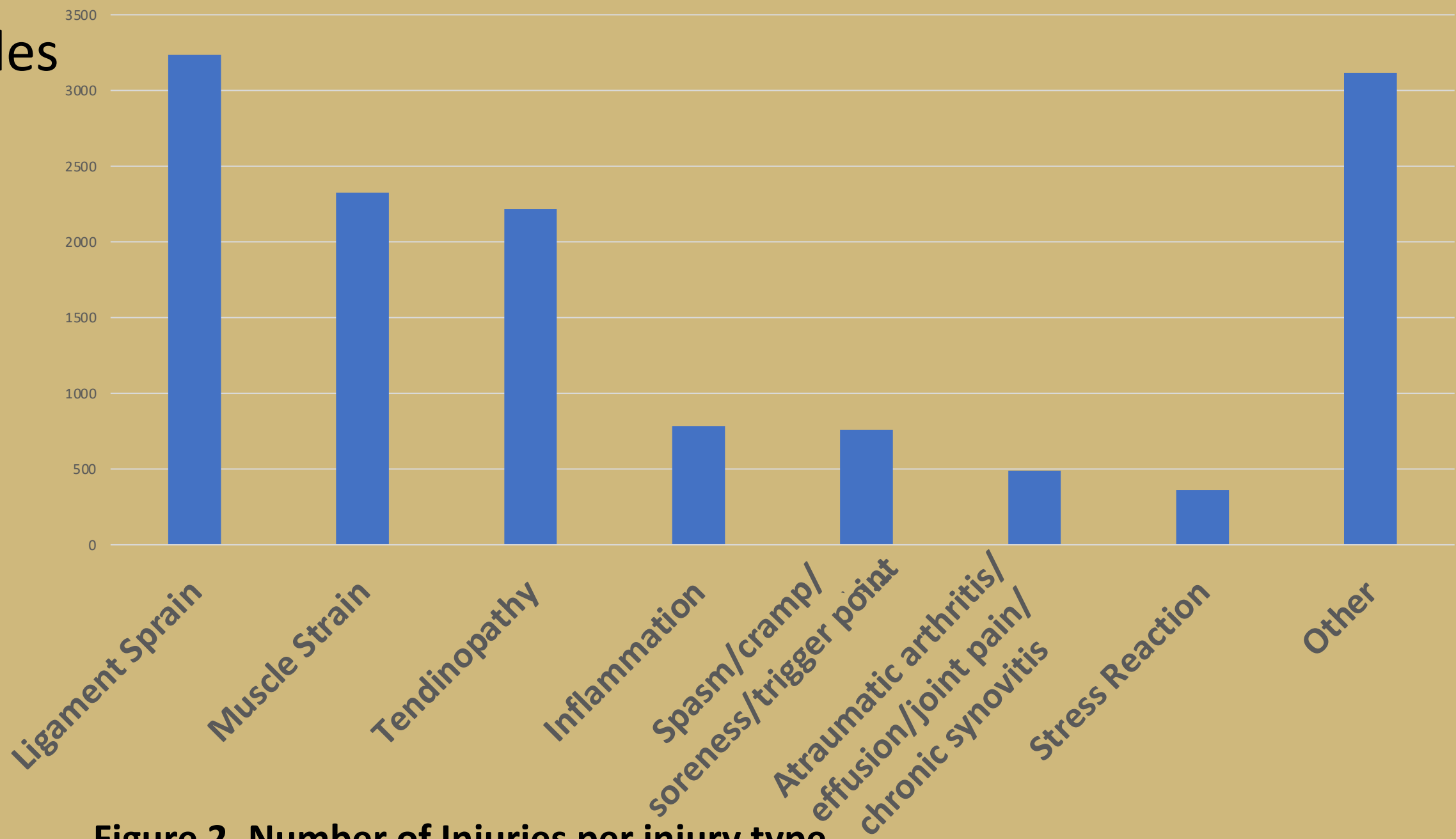


Figure 2. Number of Injuries per injury type.

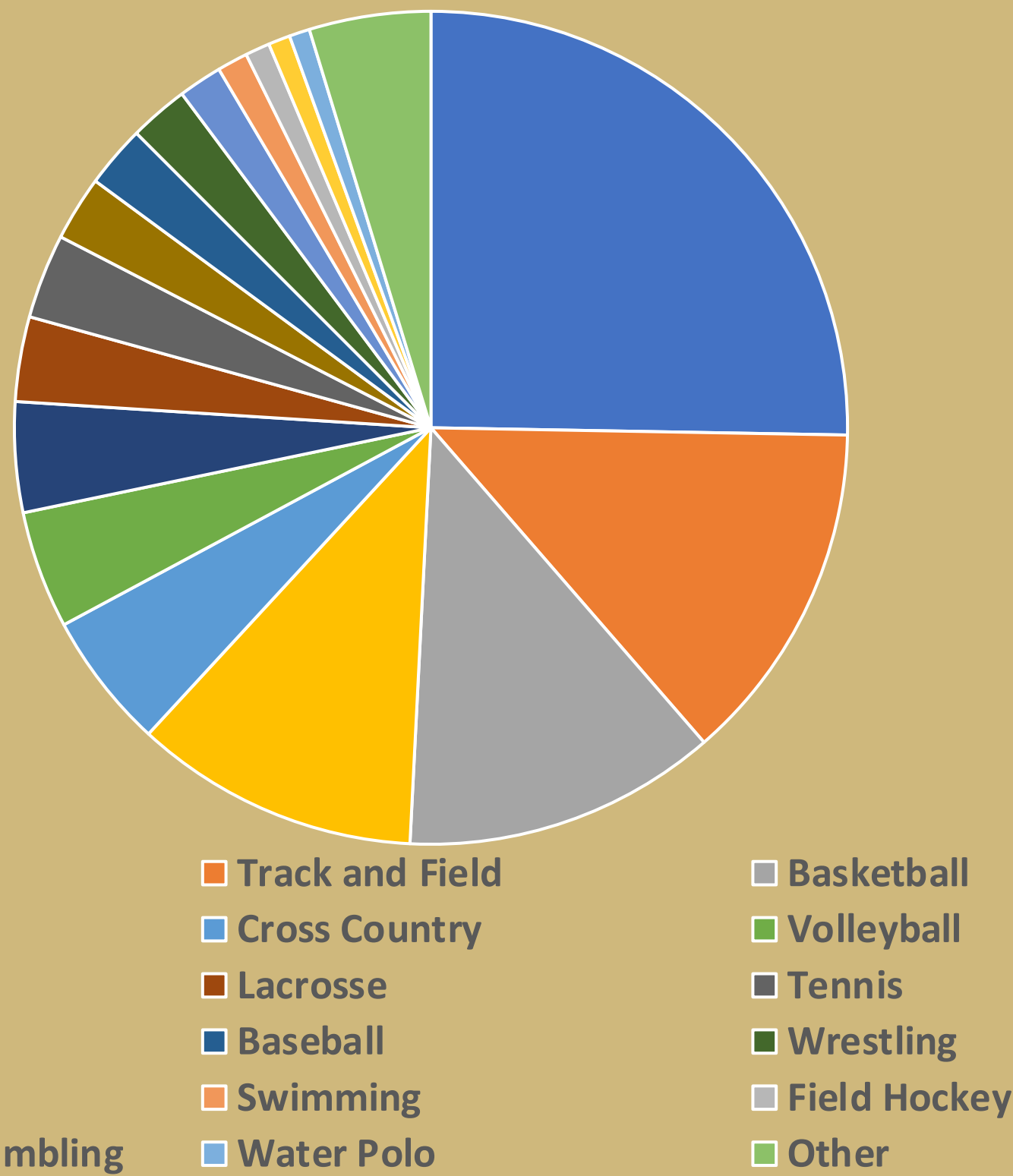


Figure 3. Relative number of Injuries by sport.

## Conclusions

- Findings of this scale suggest that the HAP can characterize injuries sustained by collegiate student-athletes to a degree not previously demonstrated in collegiate-level sports medicine.
- Follow-up investigations analyzing injuries sustained during specific events may elucidate activity-specific relative risk factors and form the foundation for developing effective injury prevention strategies at the national or even global level.

## Acknowledgements/Disclosures

- The authors have no disclosures or conflicts of interest.
- Thanks to the CU School of Medicine Research Track and Department of Orthopedics for supporting this work.