



Mid Atlantic Regional Chapter of the American College of Sports Medicine

Annual Scientific Meeting, November 1st – 2nd, 2019
Conference Proceedings

International Journal of Exercise Science, Volume 9, Issue 8



Diagnosed Concussion History Is Associated With Increased Risk for Lower-Extremity Injury in R.O.T.C. Cadets

Katherine J. Hunzinger, Katelyn M. Costantini, C. Buz Swanik, Thomas A. Buckley.
University of Delaware, Newark, DE

Concussions have been associated with an increased risk for lower extremity musculoskeletal injury (LE-MSI) among varying levels of athletes and U.S. Army Soldiers. This injury risk provides an added economic, physical, and social burden for athletes and military personnel, contributing to medically unavailable team-members. Yet, there is a paucity evidence on this relationship among Reserve Officer Training Corps (ROTC) cadets, a group which engages in activities with injury risk potential similar to athletes and soldiers. **PURPOSE:** To examine the association between diagnosed concussions and LE-MSI in ROTC cadets. **METHODS:** A modified reliable injury questionnaire (ICC=0.92) was used to identify the total number of concussions and LE-MSI (e.g., muscle strains, ligament sprains) a cadet had suffered in their lifetime. A chi-square analysis was performed to identify the association between concussion and LE-MSI and an odds ratio was calculated. **RESULTS:** 61 cadets (19.5 ± 1.4 years, 41 males) were recruited from one Army ROTC program. Those with a history of concussion were 3.96 [95%CI: 0.99, 15.70] times more likely to have suffered an LE-MSI than those without a history of concussion. There was a significant association between diagnosed concussions and LE-MSI ($\chi(1) = 4.167, p = 0.041$). 36.1% (22/61) of cadets reported having a diagnosed concussion and 70.5% (43/61) had a history of LE-MSI. **CONCLUSION:** Cadets with a history of concussion displayed an elevated risk of suffering an LE-MSI than cadets who had no history of concussion. There was a statistically significant association between history of concussion and LE-MSI among ROTC cadets at this university. ROTC Cadre should be aware of this relationship when making return to duty decisions and should consider incorporation of injury prevention protocols. Future research is warranted on a larger cohort to determine if these relationships persist, and if so, should target reducing these injuries since cadets will soon commission, potentially risking injury while serving on active duty, causing limited duty days, reduced Department of Defense readiness, and increased healthcare costs.