Concussion Increases Risk of Lower Extremity Musculoskeletal Injury after Return-to-Play among Collegiate Athletes
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**Background:** Previous studies have identified abnormalities in brain and motor functioning after concussion that persist well beyond observed clinical recovery. Recent work suggests subtle deficits in neurocognition may impair neuromuscular control and thus potentially increase risk of lower extremity musculoskeletal injury after concussion. **Purpose:** To determine the risk of acute lower extremity musculoskeletal injury during the 90-day period following return-to-play from concussion in a cohort of NCAA Division I collegiate athletes. Study Design: Retrospective cohort study. **Methods:** 87 cases of concussion among 75 athletes (58 men; 17 women) participating in NCAA Division I football, soccer, hockey, softball, basketball, wrestling, and volleyball at a single institution from 2011-2014 were included. The 90-day period following return-to-play for each case of concussion was reviewed for time-loss from acute non-contact lower extremity musculoskeletal injury. Each 90-day period following return-to-play was matched to the same 90-day period in up to 3 controls. Control athletes without a history of concussion in the previous year were matched to concussed athletes by sport team/gender, games played, and position. A total of 189 control (142 men; 47 women) 90-day periods were reviewed for time-loss injury. Conditional logistic regression was used to assess the association between concussion and subsequent risk of acute lower extremity musculoskeletal injury. **Results:** The incidence of acute lower extremity musculoskeletal injury was higher among concussed athletes (15/87; 17%) compared to matched controls (16/189; 8%). The odds of sustaining an acute lower extremity musculoskeletal injury during the 90-day period following return-to-play was 2.66 times higher in concussed athletes than controls during the same 90-day period (OR: 2.66; 95% CI= 1.12, 6.28; p= 0.026). **Conclusion:** Concussed athletes had an increased risk of acute lower extremity musculoskeletal injury more than double that of their non-concussed teammates during the same 90-day period following return-to-play.