

001.03.38. Heat Exposure and Injury Risk in Washington State Outdoor Construction Workers: A Case-Crossover Study Using High Resolution Meteorological Data and Workers' Compensation Injury Claims

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Abstract: Objectives: The primary objective of this study was to assess the relationship between heat exposure and occupational injuries in construction workers. Methods: The relationship between maximum daily humidex, a measure of apparent temperature, and Washington State Fund workers' compensation injuries in outdoor construction workers was assessed using a case-crossover design with time-stratified referent selection. Warm month (March-October) adult outdoor construction traumatic injury claims from 2000-2012 were spatiotemporally joined with high-resolution meteorological data. Conditional logistic regression with linear splines was used to assess the association between maximum daily humidex and injuries. Results: There were 63,720 traumatic injuries during the study period. The traumatic injury odds ratio (OR) was 1.0053 (95% CI 1.003, 1.007) per one °C change in humidex. In the splines analyses, we observed a nearly linear association between humidex and the risk of a traumatic injury. Stratified analyses suggested higher risk in younger (18-24 years) and older (over 54 years) workers, workers with lower extremity injuries, workers with less job experience, smaller employers, workers working in Western Washington, and time of injury before 12:30 pm. Conclusions: In this study of Washington outdoor construction workers, increasing maximum daily humidex was associated with increasing traumatic injury risk. Further work should explore mechanisms of the association between heat exposure and traumatic injuries. Injury prevention efforts in construction should address heat-related risk factors, particularly for high-risk workers. In addition, heat awareness campaigns should address outcomes beyond heat-related illness.

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ABSTRACT BOOK



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