Association between high temperature and work-related injuries in Adelaide, South Australia, 2001-2010

Abstract:

Objectives: (1) To investigate the association between temperature and work-related injuries and (2) to identify groups of workers at high risk of work-related injuries in hot environments in Adelaide, South Australia. Methods: Workers' compensation claims in Adelaide, South Australia for 2001-2010 were used. The relationship between temperature and daily injury claims was estimated using a generalised estimating equation model. A piecewise linear spline function was used to quantify the effect of temperature on injury claims below and above thresholds. Results: Overall, a 1°C increase in maximum temperature between 14.2°C and 37.7°C was associated with a 0.2% increase in daily injury claims. Specifically, the incidence rate ratios (IRRs) for male workers and young workers aged ≤24 were (1.004, 95% CI 1.002 to 1.006) and (1.005, 95% CI 1.002 to 1.008), respectively. Significant associations were also found for labourers (IRR 1.005, 95% CI 1.001 to 1.010), intermediate production and transport workers (IRR 1.003, 95% CI 1.001 to 1.005) and tradespersons (IRR 1.002, 95% CI 1.001 to 1.005). Industries at risk were agriculture, forestry and fishing (IRR 1.007, 95% CI 1.001 to 1.013), construction (IRR 1.006, 95% CI 1.002 to 1.011), and electricity, gas and water (IRR 1.029, 95% CI 1.002 to 1.058). Conclusions: There is a significant association between injury claims and temperature in Adelaide, South Australia, for certain industries and groups. Relevant adaptation and prevention measures are required at both policy and practice levels to address occupational exposure to high temperatures.

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Resource Description

Exposure: weather or climate related pathway by which climate change affects health

Temperature

Temperature: Heat

Geographic Feature: resource focuses on specific type of geography

General

Geographic Location:
resource focuses on specific location

Non-United States

Non-United States: Australasia

Health Impact: 

specification of health effect or disease related to climate change exposure

Injury

Resource Type: 

format or standard characteristic of resource

Research Article

Cross-cutting Themes: Adaptation, Communication, Vulnerable Population