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

Communication: resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience: audience to whom the resource is directed

Policymaker

Early Warning System: resource focus on systems used to warn populations of high temperatures, extreme weather, or other
elements of climate change to prevent harm to health

A focus of content

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

**Temperature**

**Temperature**: Extreme Heat

**Geographic Feature**: resource focuses on specific type of geography

None or Unspecified

**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

**Mitigation/Adaptation**: mitigation or adaptation strategy is a focus of resource

Adaptation

**Population of Concern**: A focus of content

**Population of Concern**: populations at particular risk or vulnerability to climate change impacts

Elderly, Workers

**Resource Type**: format or standard characteristic of resource

Research Article

**Timescale**: time period studied

Time Scale Unspecified

**Vulnerability/Impact Assessment**: resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system
A focus of content