

HEALTH ON A HEATING PLANET

The scientific evidence for human-induced global warming is now well established. In the last century, Australia's average temperature rose by 0.9 degree centigrade over the preindustrial average, the number of record hot days having doubled since 1960, most of them over the past decade. Much of the Australian bush is now in flames, many properties destroyed or threatened. The Bureau of Meteorology has extended its temperature colour charts to 54C, and local councils have changed their highest warning on roadside pie charts from extreme to catastrophic. Between the months September to December 2012, the average recorded Australian maximum temperature (40.33C) was the highest since 1910, when reliable records were first kept. The first seven days of 2013 were amongst the top-20 hottest days on record with, for the first time, six consecutive days over 39C.

As might be expected, at the personal level, excessive environmental temperatures cause the greatest mortality and morbidity rates amongst the elderly, the very young, and in those with chronic physical and mental illness who are on medication or high alcohol intake. Normally, body temperature is kept constant at around 37C through a combination of metabolic heat production (increased by exercise) and radiative and evaporative cooling through sweating. Sweating becomes ineffectual when environmental temperature reaches 38C (lower if humidity is high) and may be manifest as irritating prickly heat, particularly in children.

Prolonged exposures to temperatures above 35C, and particularly above 40C can lead to heat exhaustion, heat stroke and death, particularly if (non-alcoholic) fluid intake has been inadequate. Extreme heat has taken more lives than any other direct environmental cause in white Australia's 200 year history. During the 2009 Victorian bushfires, 173 people perished as a direct result of the bushfires and another 374 lost their lives to extreme heat during the same week. More than 2000 people were treated for heat-related illness in the fire's aftermath.

According to the Climate Institute, severe weather events have an adverse effect on mental health, as many as one in five suffering from the debilitating effects of extreme stress, emotional injury and despair. An increasingly hostile climate will spell a substantial rise in post-traumatic stress, anxiety and depression, which can linger for months, even years. Incidence of lack of sleep, tiredness, loss of productivity, domestic disputes, anti-social behavior, accidents, violence, self-harm and suicide increase during heat waves. Global warming will impose severe organizational and economic stresses on emergency and medical services and on the nation's economy as a whole.

Adaptive measures to local heating

Household adaptations can do much to minimize the effects of heat waves and fires. Air conditioners or evaporative coolers are the mainstay of keeping cool in affluent households, but become ineffective if power supplies fail, as they often do during heat waves. Curtains or blinds should be drawn and windows closed during hot days, and windows opened during night time. Fluid intake from tap water should be increased to several litres per day until urine becomes pale yellow. If heat inside the house becomes excessive, wet towels, fans and tepid showers can be helpful. Exercise should be restricted to cooler times of the day.

Outside the house, flammable materials such as dry vegetation should be removed to re-cycling dumps, and grass kept short. Since most house fires are started by embers, gutters should be cleared of leaves and hoses and wet brooms made easily available for dowsing spot fires. If a catastrophic fire looms, early evacuation is essential.

Global warning

At the global level, the most dangerous impact of the present unprecedented rate of warming is disruption of the Earth's climate control mechanisms, leading to massive species extinction, threats to water and food security and extreme weather events, including severe storms, floods, droughts, heat waves and fires, which have occurred throughout the world over the past two decades, more frequently and intensively than previously experienced weather patterns.

Without concerted action by all countries, including Australia, the world is on a path to exceeding 4 degrees increase in temperature by the 2060s, which would have a catastrophic effect on the environment and human health. Unfortunately, most world governments are not aware of the urgency of the situation, being pre-occupied with avoidance of falling over the fiscal cliff and neglecting the immeasurably more catastrophic and irreversible consequences of falling over the climate disruption cliff. As the world's greatest per capita greenhouse gas emitter, it is incumbent on the Australian government and community to follow best practice, politically, economically and socially to mitigate the impending disaster which faces our planet. (See www.climateandhealth.org)

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