

# Global Warming and Health

Global warming continues to aggravate the severity, duration, and frequency of heatwaves, posing a threat to mankind as well as the physical and manmade environments. Although research on heatwave impacts has expanded, the majority of studies have concentrated on social implications, leaving other important impacts in the background.<sup>1</sup>

Heat is a significant environmental and occupational health risk. A heatwave occurs when local excess heat accumulates over a series of extremely hot days and nights. Climate change is increasing the frequency, duration, intensity, and scale of heatwaves and extended periods of extreme heat. Even heat waves of low to moderate intensity can have an impact on the health and well-being of susceptible people.<sup>2</sup>

Heatstroke is a severe heat-related sickness characterized by an increase in body temperature, usually but not always greater than 40 degrees Celsius. There are two types of heat stroke: classical and exertional. Classic heat stroke primarily affects the elderly with chronic medical issues, whereas exertional heat stroke affects generally healthy adults who participate in excessive exercise in hot or humid weather.<sup>3</sup>

Extreme heat and heat waves will become more frequent and intense in the twenty-first century as a result of climate change. Extended durations of high daytime and nighttime temperatures cause cumulative stress on the human body, increasing the risk of heat-related illness and death. Heat waves can have an acute impact on huge populations for short periods of time, triggering public health emergencies and resulting in excess mortality and cascade socioeconomic effects. They can also result in a loss of health-care delivery capacity when power outages coincide with heatwaves and affect health-care facilities, transportation, and water infrastructure.<sup>4</sup>

Heat-related mortality among adults over the age of 65 increased by over 85% during 2000-2004 and 2017-2021. According to studies conducted between 2000 and 2019, approximately 489 000 heat-related deaths occurred each year, with Asia accounting for 45% and Europe for 36%.<sup>5</sup> In Europe alone, an estimated 61 672 excess deaths

were caused by heat in the summer of 2022.<sup>6</sup>

Managing heat stroke entails ensuring proper airway protection, breathing, and circulation. Following ABCs, rapid cooling becomes the primary treatment strategy, with adjunct management used to address further end-organ injury. Intubation for deep unconsciousness is rarely required because immediate cooling improves the Glasgow coma scale.<sup>7</sup> If there are sodium imbalances, enough rehydration is required without overcorrection.

A number of pharmacologic adjuncts are also worth taking into consideration while treating heat stroke. A skeletal muscle relaxant, dantrolene has been demonstrated to lower heat production in prolonged muscle contracture and can be used to treat malignant hyperthermia.<sup>8</sup> High-dose benzodiazepines may theoretically help patients by reducing oxygen consumption and blunting the shivering reaction, according to limited research.<sup>8</sup> Antipyretics may be harmful to the liver and have no place in treating heat stroke patients.<sup>9</sup>

The public and health workers have not yet become sufficiently aware of the potential hazards caused by heat. Health professionals should modify their guidelines, planning, and interventions to account for growing heat exposures, as well as to handle acute increases in admissions linked with heat waves.

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