



Assistant Secretary Douglas L. Parker  
Occupational Safety and Health Administration  
U.S. Department of Labor  
200 Constitution Avenue, NW  
Washington, DC 20210

**RE: Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings Rulemaking**

Dear Assistant Secretary Parker:

In January 2022, the American College of Occupational and Environmental Medicine (ACOEM) [commented on](#) OSHA's Advanced Notice of Proposed Rulemaking (ANPRM)-Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings. Knowing the serious health effects of heat exposure from our day-to-day care of workers, ACOEM strongly supported this advanced notice of proposed rulemaking to protect workers exposed to heat. It is over 1 ½ years since the ANPRM was published, and the threat to workers is even more grave. Heat stress is becoming an increasingly critical issue that demands immediate attention. As temperatures rise and extreme heat events become more frequent, the safety and well-being of workers are at risk. The urgency of this matter cannot be overstated. The severity of heatwaves is worsening. Workers across various industries face exposure to extreme heat without appropriate protection. The absence of a temporary heat standard leaves employees vulnerable to heat-related illnesses and injuries.

2023 will be the hottest year on record.<sup>1</sup> These heat trends are projected to continue for years to come without a reduction in carbon emissions and other steps to mitigate climate change. The impacts of extreme heat on American workers are striking, as recent reports and studies have highlighted. Since 2011, there have been 436 work-related deaths caused by environmental heat exposure.<sup>2</sup> Using BLS data, Hawkins et al. calculated over 31,000 occupational injuries and illnesses due to heat between 2011-2019.<sup>3</sup> Young workers, Black and Hispanic workers, and workers in the South were at highest risk. Industries with the highest rates were farming/fishing/forestry, construction, transportation, and installation/maintenance. Morrissey et al. reviewed data from OSHA's Severe Injury Reports from 2015-2022 and found that 91.9% of the exertional injuries were due to heat exposure.<sup>4</sup> The study also reviewed OSHA's fatality inspection database from 2017-2022 and found that 87.6% of exertion-related fatalities were due to heat exposure.

---

<sup>1</sup> New Scientist, June 16, 2023, "Why 2023 is shaping up to be the hottest year on record".

<https://www.newscientist.com/article/2378692-why-2023-is-shaping-up-to-be-the-hottest-year-on-record/>

New York Times, July 6, 2023, "Heat Records Are Broken Around the Globe as Earth Warms, Fast.

<https://www.nytimes.com/2023/07/06/climate/climate-change-record-heat.html>

Washington Post, August 8, 2023. "2023 is on track to be the hottest year on record". <https://www.washingtonpost.com/climate-environment/2023/08/08/2023-is-track-be-hottest-year-record/>

<sup>2</sup> Bureau of Labor Statistics. TED: The Economics Daily. June 5, 2023. <https://www.bls.gov/opub/ted/2023/36-work-related-deaths-due-to-environmental-heat-exposure-in-2021.htm>

<sup>3</sup> Hawkins D, Ibrahim M. Characteristics of occupational environmental heat injuries/illnesses-Survey of occupational injuries and illnesses, 2011 to 2019. *J Occup Environ Med*, 2023; 65(5):401-406.

<sup>4</sup> Morrissey, M.C.; Kerr, Z.Y.; Brewer, G.J.; Tishukaj, F.; Casa, D.J.; Stearns, R.L. Analysis of Exertion-Related Injuries and Fatalities in Laborers in the United States. *Int. J. Environ. Res. Public Health* 2023, 20, 2683.

<https://doi.org/10.3390/ijerph20032683>

While existing data from sources like the BLS may provide some insight into the issue, it's crucial to recognize that the problem is far greater and more complex than what these figures suggest. By delving deeper into the realities of heat exposure's impact on workers' health, we can better understand the urgency and take measures to act. The reported cases of heat-related illnesses and injuries are severe underestimations of the true scale of the problem. Many cases go unreported or unrecognized, leading to a gross underrepresentation of the actual health risks faced by workers. This alarming gap in data highlights the need for immediate action. Moreover, the effects of heat exposure extend far beyond the immediate dangers of injury and heatstroke. Recent research, like the systematic review by Lee et al. sheds light on the extensive health implications linked to heat exposure. These include cardiovascular strain, kidney dysfunction, and cognitive impairment.<sup>5</sup>

The implications of heat on healthcare costs are not trivial. According to a recent report from the public policy research group Center for American Progress, extreme heat is estimated to create \$1 billion in health care-related costs in the United States this summer of 2023 alone, including nearly 235,000 emergency department visits and more than 56,000 hospital admissions.<sup>6</sup>

Of note, we cannot forget how heat will affect the productivity of our workforce. Heat stress is projected to reduce total working hours worldwide. As highlighted in Romanello et al., global potential loss of income from a reduction in labor capacity due to extreme heat was \$669 billion (U.S.) in 2021.<sup>7</sup> In the United States, more than 2.5 billion hours of labor in the agriculture, construction, manufacturing, and service sectors were lost to heat exposure.<sup>8</sup> According to the International Labor Organization, 2.2 percent of total working hours will be lost to high temperatures globally in 2030 - a productivity loss equivalent to 80 million full-time jobs.<sup>9</sup>

Cal-OSHA's established heat standard serves as a shining example of effective workplace safety regulation. Cal-OSHA's experience demonstrates that implementing a heat standard is not only feasible but also practical. Employers have successfully integrated these measures into their daily operations, showing that protecting workers from heat stress is an achievable goal. This standard has already proven its feasibility and, most importantly, its potential to save lives. It's imperative to highlight this success as we advocate for its expansion to cover all indoor and outdoor workplaces without limitations. We would also urge OSHA to consider examples of practical heat stress programs successfully implemented on the ground, such as the one used in the Deepwater Horizon response, which protected the 49,000 responders while allowing them to perform their tasks safely.

ACOEM's January 26, 2022, comments to the docket detail our recommendations for an occupational heat stress standard. We continue to make these recommendations but will not restate them exhaustively. However, we wish to stress that critical components of a heat standard should include acclimatization requirements, emergency response requirements,

---

<sup>5</sup> Lee J, Lee YH, Choi WJ, Ham S, Kang SK, Yoon JH, Yoon MJ, Kang MY, Lee W. Heat exposure and workers' health: a systematic review. *Rev Environ Health*. 2021 Mar 22;37(1):45-59.

<sup>6</sup> Center for American Progress. The Health Care Costs of Extreme Heat. <https://www.americanprogress.org/article/the-health-care-costs-of-extreme-heat/>

<sup>7</sup> Romanello M, Di Napoli C, Drummond P et. al. The 2022 report of the *Lancet* countdown on health and climate change: health at the mercy of fossil fuels. *Lancet*, 2022; 400:1619-1654.

<sup>8</sup> The Lancet Countdown on Health and Climate Change data explorer. Change in Labour Capacity. <https://www.lancetcountdown.org/data-platform/health-hazards-exposures-and-impacts/1-1-health-and-heat/1-1-4-change-in-labour-capacity>

<sup>9</sup> Working on a warmer planet: The effect of heat stress on productivity and decent work. International Labor Organization, 2019. [https://www.ilo.org/global/publications/books/WCMS\\_711919/lang-en/index.htm](https://www.ilo.org/global/publications/books/WCMS_711919/lang-en/index.htm)

medical monitoring, medical removal protection, worker and supervisor training, free access to potable water and water breaks, and, of course, the full range of engineering and administrative controls.

We believe that OSHA should enact an Interim Standard for Occupational Heat Stress for both outdoor and indoor workers as OSHA continues to work on a permanent standard. Outdoor workers must include farmworkers, who are disproportionately affected by heat stress. As in the creation of any OSHA standard, input from unions, workers, employers, and other stakeholders will be instrumental in creating an effective standard. Both an interim and final standard will require rigorous enforcement.

Heat stress is a completely preventable occupational hazard causing many worker injuries, illnesses, and deaths. As always, ACOEM stands ready to assist OSHA in any way to achieve an Interim and Final Standard to protect U.S. workers from heat stress. Please do not hesitate to contact Dane Farrell ([Dane@cascadeassociates.net](mailto:Dane@cascadeassociates.net)), ACOEM's Government Affairs Representative, with any questions.

Sincerely,



Kenji Saito, MD, JD, FACOEM

President

American College of Occupational and Environmental Medicine (ACOEM)