

September 26, 2022
Carmyn Shute
Washington State Department of Labor and Industries
7273 Linderson Way SW
Tumwater, WA 98501-5414

Dear Ms. Schute,

Thank you for proposing permanent updates to the emergency rules protecting workers in Washington from the threats of extreme heat exposure. On behalf of our more than 500,000 members – 11,000 of whom live and work in Washington state – the Union of Concerned Scientists (UCS) is pleased to support these rules, though notes several ways in which they could be strengthened.

As an organization that has researched the potential impacts of extreme heat on workers and the general public, we have heard and closely followed stories of workers who have experienced heat illnesses while on the job and faced opposition from their employers when asking for commonsense measures that would protect their health. With continued climate change, the frequency and intensity of days with extreme heat is expected to increase. Absent action to slow the impacts of climate change, Washington state can expect up to 17 days per year with a heat index above 90°F by 2050 and around 35 such days per year by century's end¹. Moreover, because pesticides used in agriculture can become more volatile as temperatures warm, pesticide use on increasingly frequent hot days stands to become a greater threat to human health with future climate change.²

With both the stories of workers harmed by heat and a wealth of data in hand, we urge you to adopt strong updates to the existing emergency heat rules that are based on the best available scientific and public health data as well as input from workers themselves.

Regarding the discussion draft, we specifically urge you to:

- 1) Maintain the draft language that ensures this rule applies year-round. We were pleased to see the removal of dates restricting enforcement of the rule to a 5-month period. Given the expected increase in the frequency of high heat days in Washington and across the nation, ensuring year-round protection from heat exposure will maximize benefits for Washington's workers.
- 2) Amend the rule to acknowledge that different people acclimatize at different rates depending on several factors such as age, underlying health, etc. Labor and Industries ought to consider whether the 14-day upper limit is sufficient particularly for

¹ <https://www.ucsusa.org/sites/default/files/attach/2019/07/killer-heat-data-by-state.xlsx>

² https://www.ucsusa.org/sites/default/files/2021-09/Too-Hot-to-Work_9-7.pdf

vulnerable groups that acclimatize less effectively to high heat. L&I should adjust the limit to account for these factors.

- 3) Establish a clear definition of “high amounts” of sugar and caffeine in drinking water/beverages. L&I should consider studies exploring the impact of high-sugar, high-caffeine drinks on hydration and thermal regulation and adjust the rules as needed to align with the best available science.³
- 4) Regarding Table 1: Utilize the heat index rather than temperature alone to determine the threshold for the “all other clothing” category of Table 1. While the heat index is generally not used at cooler temperatures, once temperatures begin approaching 80°F, the heat index can exceed 80°F if humidity is very high. Humidity is a critical factor in the human body’s response to hot conditions, so must be included in the heat metrics used to determine when the rules take effect. Moreover, recent research also supports utilizing a heat index threshold of 80°F to identify dangerously hot workplace conditions that could result in worker fatalities⁴.
- 5) Establish a clear definition of “suitably cool” drinking water. L&I should create a definition that is at least as stringent as the National Institute of Occupational Safety and Health (NIOSH) recommendation that workers hydrate with water colder than 59°F.⁵
- 6) Regarding high heat procedures: Follow NIOSH guidance regarding rest periods which calls for progressively longer periods as *adjusted* temperatures increase. While the draft rules call for 10-minute breaks every two hours across the board, NIOSH recommends, for instance, 15-minute breaks per hour for moderate work and 30 minutes per hour for heavy work when temperatures reach 100°F. That’s a meaningful discrepancy and ought to be addressed to ensure rest periods are truly effective at protecting workers.

Thank you again for developing this updated rule to protect Washington’s workers. Once enacted, they would be some of the strongest such rules in the nation and could help to provide a model for federal-level heat rules from the Occupational Safety and Health Administration. We urge you to act quickly to enact and enforce the rules. The season of heat is already here and as was so tragically clear during the summer of 2021, the lives of Washington’s workers are at risk. If you have any questions or need any further information, please reach out to me, Kristina Dahl (Principal Climate Scientist, kdahl@ucsusa.org) at any time.

Sincerely,



Kristina Dahl

³ Assessing the scientific literature on the influence of caffeine on heat tolerance and water/electrolyte imbalances may yield some guidelines, though more data is needed. Baker and Jeukendrup 2014 found, for example, that “...research has shown that moderate caffeine intake (<~450 mg) does not result in chronic water/electrolyte imbalances, reduced exercise-heat tolerance, or an increased risk of heat illnesses” and cite several supporting studies worth looking into.

⁴ <https://oeh.tandfonline.com/doi/full/10.1080/15459624.2018.1532574>

⁵ <https://www.cdc.gov/niosh/docs/2016-106/pdfs/2016-106.pdf>