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Staying Cool in a Changing Climate: Caring for Health in Extreme Heat

Editor's Note: The National Environmental Health Association (NEHA) strives to provide up-to-date and relevant information on environmental health and to build partnerships in the profession. In pursuit of these goals, we feature this column from ecoAmerica whose mission is to build public support and political resolve for climate solutions. NEHA is an official partner of ecoAmerica and works closely with their Climate for Health Program, a coalition of health leaders committed to caring for our climate to care for our health. The conclusions in this column are those of the author(s) and do not necessarily represent the official position of NEHA.

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As we enter into the warmest months of the year, it is good to remind ourselves that environmental health professionals play a vital role in protecting public health from the hazards of heat, which are increasing due to climate change. Likewise, we must remember that to safeguard the general public, the environmental health workforce needs to protect itself from these very same threats.

To date, climate change has increased global temperatures about 1.8 °F on average (Eltahir & Krol, 2022). What this change translates to is not just a mere increase in global temperature—it also increases the frequency of extreme heat days (Intergovernmental Panel on Climate Change, 2021). The Intergovernmental Panel on Climate Change (2021) reports that extreme temperature events that previously would occur only once every 10 years are now 2.8 times more frequent due to global temperature increase.

People are feeling these effects as cities across the country are experiencing hotter summers, including not only hotter days but also many more of them. In 2022 alone, over 7,000 daily temperature records were broken in the U.S. (Stevens & Samenow, 2022). According to the World Health Organization (2018), the number of people exposed to heat waves globally increased by 125 million between 2000 and 2016.

In the U.S., heat is now the number one cause of weather-related death (National Weather Service, 2021). When people are exposed to extreme heat, they can lose control of their internal temperature, which can result in short-term but dangerous symptoms such as heat cramps, exhaustion, heatstroke, and hyperthermia (National Institute of Environmental Health Sciences [NIEHS], 2022). Furthermore, preexisting chronic conditions—including cardiovascular disease, respiratory disease, cerebrovascular disease, and conditions connected to diabetes—can be worsened by extreme heat (NIEHS, 2022). A study by Parks et al. (2020) found that unusually warm years are associated with an increase in injury-related deaths such as drowning, transport, assault, and suicide.

Temperature alone is not the only impact of extreme heat. Climate change also influences humidity levels (Eltahir & Krol, 2022). When there is a high saturation of moisture in the air, our bodies are not able to cool down through the evaporation of sweat as they normally would, which makes it difficult to regulate our internal temperature and exacerbates or hastens the health impacts previously mentioned (Eltahir & Krol, 2022).

Some individuals in our communities are at more risk than others, including people older than 65 years who are at risk due to the likelihood of having a chronic medical condition that can impact the body's natural response to heat (Centers for Disease Control and Prevention, 2020). People who do not have access to cooling are another affected group. On average, Black households have 50% less access to central air conditioning than White households while experiencing higher heat-related mortality rates (O'Neil, 2005). Discriminatory housing policies such as redlining have put people of color at higher risk of heat exposure. Hoffman et al. (2020) found that formerly redlined neighborhoods are on average 2.6 °C (36.7 °F) hotter than non-redlined neighborhoods. Children are also at risk due to physical characteristics such as not producing sweat as quickly and because they are more reliant on adults to access cool areas (Huetteman, 2022).

There are many other individuals that are also at higher risk of heat-related health

impact, including environmental health professionals, especially if they work outdoors. According to the Occupational Safety and Health Administration (OSHA), heat stress resulted in 815 worker deaths nationally between 1992 and 2017 and seriously injured more than 70,000 workers (U.S. Department of Labor, 2021). Black and Hispanic outdoor workers are at higher risk of heat-related fatality (Gubernot et al., 2015). Because the environmental health workforce is vast—and includes outdoor workers such as sanitation workers, industrial hygienists, OSHA compliance specialists, and beyond—the workforce must protect its own employees as it works to protect the health of the public.

So, what can environmental health professionals do? One of the most important things to do is be aware of extreme heat. The National Integrated Heat Health Information System maintains HEAT.gov with updates on current conditions and risks, as well as phone apps to track exposure to extreme heat in real time. Further, the U.S. Department of Homeland Security also offers clear information and best practices for preparedness at www.ready.gov/heat. These tools can be lifesavers.

Outdoor workers should expect safe working conditions, with rest and shade breaks and proper hydration based on federal recommendations (Field Sanitation, 2023). Since many outdoor workers may feel disempowered due to language access, immigration status, or perceived value to employers (Pagán-Santana et al., 2023), it is even more important for environmental health professionals to set an example and actively advocate for these standards of safety.

Health centers can also prepare for the increased frequency of extreme heat events. The Climate Resilience for Frontline Clinics Toolkit offers tools to prepare for and manage extreme heat (Americares, 2023). The tool kit includes 1-page flyers for patients with a variety of risk factors, care plans for clinicians, and preparation guidance for health facilities. This tool can be shared with environmental health colleagues in these roles as temperatures rise.

Through all of these actions to prepare for and manage the risks of heat and other impacts of a changing climate, speaking with colleagues and the community on the topics remains incredibly important. Many people recognize the heatwave–climate change connection but fewer than two fifths of people in the U.S. say heat waves make them concerned about the issue. In 2022, 61% said they associated heat waves with climate change, more than any other climate-related impact (ecoAmerica, 2022). And people are seeing the impact—in 2021, 79% of people in the U.S. said they noticed more extreme heat over the past few years (ecoAmerica, 2021).

Even still, environmental health professionals know that the public needs assistance with preparing for and responding to these impacts. The good news is that ecoAmerica offers the Climate for Health Ambassador Program and 5 Steps to Effective Climate Communication to help build confidence in communicating on climate action in a productive and positive way (Climate for Health, 2022, ecoAmerica, 2023). Environmental health voices matter and can make a significant difference in shifting awareness, attitudes, and behavior toward health.

As heat ramps up this summer, join environmental health professionals across the nation in speaking about the health-related impacts of a changing climate, exploring what can be done to protect health, and taking action on solutions. We can all take steps to make a big difference!

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advisory group, the Tracking Education Kit is designed to fulfill standards set by the Council on Education for Public Health for undergraduate- and graduate-level courses. Additionally, the content includes assignments for in-person and virtual settings.

Request Access to the Tracking Education Kit

The Tracking Education Kit is available by request beginning in mid-2023. To learn more or request the kit, email: trackingsupport@cdc.gov.

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