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United States Environmental Protection Agency

Climate Change and the Health of Occupational Groups

Understanding the threats that climate change poses to human health can help us work together to lower risks and be prepared.
Climate change threatens human health, including mental health, and access to clean air, safe drinking water, nutritious food, and shelter. Everyone is affected by climate change at some point in their lives. Some people are more affected by climate change than others because of factors like where they live; their age, health, income, and occupation; and how they go about their day-to-day life.

Certain groups of workers are especially vulnerable to health impacts from climate change because of where they work and the type of work that they do. Climate change may increase the occurrence and severity of some existing occupational hazards and may also lead to new and unanticipated risks. Some workers also encounter unique hazards related to climate change, such as the exposure of firefighters to wildfires. It is important that employers understand the impacts of climate change so they can take steps to prepare for potential changes in the work environment and protect their workers. Employers, safety professionals, and workers should stay informed about emerging issues and hazards associated with climate change to better develop plans that address worker safety and health.

What is climate change and why does it matter for health?

We've all heard of it, but what exactly is climate change? Greenhouse gases act like a blanket around Earth, trapping energy in the atmosphere. Human activities, especially burning fossil fuels for energy, increase the amount of greenhouse gases in our atmosphere and cause the climate to warm. **Climate** is the typical or average weather for an area. **Climate change** is any change in average weather that lasts for a long period of time, like warming temperatures. Climate change affects the food we eat, the air we breathe, and the water we drink. It also leads to extreme weather events, like flooding, droughts, and wildfires. All of these impacts affect human health.

It is important that employers understand how climate change affects the health and safety of their workers. There are actions employers can take to prepare now, such as including a climate change component in existing safety and health training. Established tools and strategies for protecting workers from climate change related hazards, such as temperature extremes and pesticide use, can be used to protect workers currently experiencing the health impacts of climate change. These tools and strategies can also be used as the basis for planning for the prevention of future health impacts on vulnerable occupational groups.

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Work settings and climate change

Outdoor workers are often among the first to be exposed to the effects of climate change. Climate change is likely to affect the health of outdoor workers through increases in temperature, poor air quality, extreme weather, diseases transmitted by ticks and mosquitoes, industrial exposures, and damage to infrastructure. Outdoor workers affected by climate change include:

- farmers, ranchers, and other agricultural workers
- commercial fishermen
- construction workers
- paramedics, firefighters, police, and other first responders
- transportation workers

But it is not only outdoor workers who are affected by climate change. Individuals who are exposed to hot indoor work environments (such as steel mills, dry cleaners, manufacturing facilities, warehouses, and other areas that lack air conditioning) are also at risk for climate change impacts such as extreme heat exposure or indoor air pollutants.

Extreme heat

Extreme heat may result in more cases of heat-related illnesses, like heat stroke, heat exhaustion, and fatigue among workers, especially among more physically demanding occupations. Heat stress and fatigue can reduce alertness and work capacity, leading to safety lapses that can increase the risk of injury. Higher temperatures can also worsen air pollution, raising the risk of respiratory illness for workers. Heat extremes in areas not previously affected by high temperatures can affect workers who are not used to working in high heat conditions or are unaware of heat-related hazards.

Extreme events

Extreme events, such as floods, storms, droughts, and wildfires are becoming more frequent and intense as a result of climate change. These events create risky conditions for workers involved in disaster response, rescue, and cleanup. For example, firefighters battling wildfires are exposed to hazards such as being overrun by fire, heat-related illnesses and injuries, smoke inhalation, and air pollutants. First responders and other emergency workers face greater health and safety risks when working in conditions with infrastructure disruptions, communication interruptions, and social unrest or violence following floods and storms.

Other outdoor health hazards

Other health hazards for outdoor workers include increased exposure to waterborne and foodborne illness, allergens, and insects carrying diseases such as West Nile virus or Lyme disease. In addition, because of the increase in range and duration of pests and weeds, pesticide use is expected to increase, including in areas where pesticides were not previously used. This will increase the exposure of agricultural workers. Lastly, for some groups, such as migrant workers and day laborers, the health effects of climate change can be cumulative, as they are affected both by work-related exposures and exposures associated with poorly insulated housing and lack of air conditioning.

Members of the military

Like others who work outdoors, military personnel who train and conduct operations in hot environments are at risk for heat-related illness. Members of the U.S. Armed Forces are also at increased risk of exposure to diseases carried by mosquitoes and ticks, as well as exposure to respiratory hazards like air pollution. In addition, military personnel are stationed and deployed globally, which exposes them to climate-related infections that are relatively rare in the United States, such as dengue fever and malaria. The U.S. Department of Defense has developed a climate change adaptation plan to help understand and mitigate these and more health threats related to climate change (see link in the Learn More section of this sheet).

This fact sheet is based on "The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment." To explore the full report, go to:

https://health2016.globalchange.gov

Learn More

Climate Change and Occupational Health and Safety
http://www.cdc.gov/niosh/topics/climate/

Climate Change: Human Health
https://www3.epa.gov/climatechange/impacts/health.html

Climate Change: What You Can Do
https://www3.epa.gov/climatechange/wycd/

Department of Defense: Climate Change Adaptation and Resilience
http://www.defense.gov/Portals/1/Documents/pubs/471521p.pdf

Federal Emergency Management Agency: Climate Change
https://www.fema.gov/climate-change

Occupational Safety & Health Administration's Campaign to Prevent Heat Illness in Outdoor Workers
https://www.osha.gov/SLTC/heatillness/index.html

Occupational Safety & Health Administration: Occupational Heat Exposure
https://www.osha.gov/SLTC/heatstress/

Recursos en Español

A la campaña de OSHA para prevenir las enfermedades a causa del calor en trabajadores al aire libre
https://www.osha.gov/SLTC/heatillness/spanish/index_sp.html

Climate Health Assessment: Resumen Ejecutivo en español
https://health2016.globalchange.gov/downloads

EPA en español: El cambio climático y usted
https://espanol.epa.gov/espanol/el-cambio-climatico-y-usted

EPA: Seguridad y salud laboral para el manejo de pesticidas
https://espanol.epa.gov/seguridad-laboral-al-usar-pesticidas

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