NEW JERSEY PUBLIC EMPLOYEES
OCCUPATIONAL SAFETY AND HEALTH

NJ PEOSH ALERT #41

Safety & Health Alert

RECOGNIZING OUTDOOR HEAT HAZARDS AND PREVENTING HEAT ILLNESS

Public employees working outdoors in high temperature environments (especially firefighters, public works and utilities laborers, public safety academy recruits and instructors, sanitation workers, etc.) face significant risk to their health during hot weather.

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SCAN ME

Public employees working outdoors in high temperature environments (especially firefighters, public works and utilities laborers, public safety academy recruits and instructors, sanitation workers, etc.) face significant risk to their health during hot weather.

Prolonged exposure to heat can cause a wide variety of health problems from a condition called heat stress to life-threatening heat stroke. **Performing strenuous work in hot weather can lead to death.**

Therefore, in the interest of the occupational safety and health of New Jersey's public employees, PEOSH is providing this alert as an educational tool. Public employers are reminded that the PEOSH Act, through the General Duty Clause (N.J.S.A. 34:6A-33), requires that public employees be provided a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm. This alert can be used to assist public employers in meeting this important obligation.

RECOGNIZING THE HAZARD

- **Understand how the heat hazard is measured.**
  Air temperature and relative humidity can be combined into a number called the heat index. It is usually provided during weather reports or on the National Weather Service website *(weather.gov)* for specific locations. Local measurements using a calculated number called the "Wet Bulb Globe Temperature" is a more accurate representation of a heat hazard as it takes into account direct solar radiation and cloud cover as well as the air temperature and relative humidity. A simple to use handheld meter is one way to obtain this reading.

THE NEW JERSEY DEPARTMENT OF LABOR & WORKFORCE DEVELOPMENT
DOL

OFFICE OF PUBLIC EMPLOYEES
OCCUPATIONAL SAFETY
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- **Heat and humidity are dangerous because, while exposed to it, the body struggles to regulate its core temperature.** When a person overheats (especially during strenuous outdoor activity), the body's natural cooling mechanism – sweating – may not be effective. Excessive sweating also causes dehydration and without rehydration the person may experience an imbalance of electrolytes which are critical for muscle and nerve function. In certain emergency situations organ failure can occur due to the build-up of toxins in the body.

THE FOLLOWING MEDICAL CONDITIONS ARE RECOGNIZED AS CONSEQUENCES OF HEAT EXPOSURE:

- **HEAT STRESS**
  - » **Symptoms –** Excessive sweating, fatigue, thirst and muscle cramps.
  - » **First Aid –** Move the worker to a shaded area and provide water / electrolyte drinks and encourage rest. Apply cool cloths to their skin to lower the body temperature.

- **HEAT EXHAUSTION**
  - » **Symptoms –** Heavy sweating, weakness, dizziness, nausea, headache and skin that is cool and moist.
  - » **First Aid –** Move the worker to a shaded area and lie them down with their legs elevated. Encourage them to sip water or electrolyte drinks and apply cool cloths to their skin to lower the body temperature. Closely monitor their condition and seek medical care if symptoms do not improve.

- **HEAT STROKE** *(This is a medical emergency)*
  - » **Symptoms –** Very high body temperature (above 103 F) with hot, dry skin. The person may be confused with a rapid pulse. It is possible that the worker may be or go unconscious.
  - » **First Aid –** Call 911 immediately. Attempt to move the worker to a cool area and try to lower the body temperature with cool water and ice packs paying close attention to the neck, armpits and groin. Fan the damp areas if possible. Avoid offering fluids if the person is unconscious or unable to swallow. Stay with the person until emergency medical services arrive.

PREVENTING ILLNESS

- Check a reputable weather forecast every day and use heat index charts from the National Weather Service and/or Wet Bulb Globe Temperature tables from OSHA to plan and adjust work assignments based on the expected heat hazard and the amount of physical activity. You may consider breaks, earlier schedules, early dismissals, etc. to minimize the impact of the heat hazard on workers.

- It is essential to train supervisors and workers about the above heat illnesses and how to recognize signs and symptoms in themselves and others. The training should be part of the employer's heat illness prevention program that includes regular breaks, hydration and shade. Workers also need to know how to get help for themselves or others.

- Employers who routinely expose employees, by the nature of the work, to hot temperatures and demanding tasks (for example public safety training academies) should consider obtaining a heat stress meter that can measure in real time the Wet Bulb Globe Temperature in order to establish action levels on days when heat is expected to be a problem. An example of this is establishing a rule that says when the Wet Bulb Globe Temperature is greater than 90 degrees, all activity shall move indoors.

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- Emergency services employers (such as fire departments) are expected to follow the published rehabilitation (rehab) guidelines established by the New Jersey Division of Fire Safety during emergency incidents. This means using measures such as tents, “two bottle rules,” shade, chairs, mister fans, rehydration, medical monitoring and treatment when necessary.

  The two bottle rule is a vital safety measure for firefighters using Self-Contained Breathing Apparatus (SCBA). This guideline requires firefighters to take a rehabilitation break after using two SCBA air bottles, each lasting about 30 minutes. Following this rule helps ensure their well-being during challenging operations.

REFERENCES:

- **Heat Index (NWS)**
  - » https://www.noaa.gov/sites/default/files/2022-05/heatindex_chart_rh.pdf
- **OSHA Heat Page**
  - » https://www.osha.gov/heat-exposure
- **OSHA Heat Illness Prevention Plan Guidance**
  - » https://www.osha.gov/heat/employer-responsibility
- **NIOSH Heat Safety Application**
  - » https://www.cdc.gov/niosh/heat-stress/communication-resources/app.html

HEAT RESOURCES FOR WORKERS:

OSHA RESOURCES:

- https://www.osha.gov/heat
- https://www.osha.gov/heat-exposure/water-rest-shade

NEW JERSEY RESOURCES:

- NJDEP | NJ Air Quality Flag Program
- https://heat-hub-new-jersey-njdep.hub.arcgis.com/pages/chill-out-nj-nearby-app
- https://www.nj.gov/health/ceohs/public-health-tracking/climate-change/FactSheets/Camp_Air_Quality_Flyer_Final.pdf
- https://www.nj.gov/health/ceohs/public-health-tracking/climate-change/FactSheets/Youth_camp_HRI_Final.pdf