

HEAT STRESS Risk Factors

Workers should be aware of the many factors that can impact the risk of heat illness.

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Environment

- High temperatures, especially with high humidity, which makes sweating less effective
- Direct sun exposure
- Lack of wind or breeze to cool the body; however, when ambient conditions are higher than body temperature, warm airflow can actually *increase* heat gain
- Proximity to engines or other hot equipment



Activities

- High exertion
- Not enough rest breaks
- Repeated strenuous days in the heat
- High motivation to push through discomfort from heat strain



Photo by NIOSH

No Acclimatization

- New employees
- Experienced employees returning from time away from the heat
- Acclimatized workers who experience a sudden change in worksite temperature, such as heat waves or mining in a new area



Medications

Heat tolerance can be affected by medications taken for

- cold, allergies, and congestion
- muscle spasms
- blood pressure
- urine production (diuretics)
- high blood pressure
- diarrhea
- dizziness/vertigo
- psychosis
- depression



Dehydration

- One of the most important risk factors



Prior Heat Illness

- Increases the risk of heat illness in the future



Other Factors

- Age over 60
- Non-breathable clothing or personal protective equipment
- Alcohol use in the past 24 hours

Health Conditions

- Short-term illnesses, such as diarrhea, vomiting, or respiratory infections
- Chronic conditions, such as diabetes and heart disease
- Being overweight or obese
- Poor physical fitness



A worker may be affected by many risk factors at the same time. Talk to a healthcare provider about your personal risk factors.

Points to Remember

- **Acclimatization is critical**

Lack of acclimatization is a major factor in heat-related deaths on the job

- **Hydration is critical**

Dehydration greatly increases the risk of heat illness

- **A recent illness can temporarily lower your heat tolerance**

- **Be aware of other personal risk factors for heat illness**

Prior heat illness

Certain medications

Certain health conditions

Alcohol use within 24 hours of working in heat

Case showing hazards of heat illness even in acclimatized workers

A 27-year-old employee with two years' mining experience was coming to the end of a 12-hour shift at a mill in Arizona when he experienced muscle cramps and vomiting from dehydration. Although he did not lose consciousness, he missed two days of work due to the incident. The employee had been taking medication for high blood pressure.

Lessons Learned

Young, healthy, and experienced—anyone can get heat illness! This incident may have been related to the employee's high blood pressure medication. Multiple factors together, such as certain medications, a recent illness, or repeated strenuous days in the heat, can increase the risk for heat illness.



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