Weekly Safety Tip

Avoiding Heat Stress

SAFETY TIPS

Avoiding Heat Stress

Safety Council OF NORTHWEST OHIO

KEY POINTS

- Workers in PDOs are at a greater risk for heat strain/illness compared to other occupations.
- NIOSH - National Institute for Occupational Safety and Health recommends that workers **consume one cup (8 oz or 250 mL) of water every 15 – 20 min**.
    - However, fluid intake requirements vary, so workers should consider individual needs based on environmental conditions, work intensity and heat exposure duration.
- Research on nutrition for PDOs is limited, but there is evidence that the daily caloric intake habits of some workers may only be accounting for half of their daily energy expenditure.
    - Sufficient daily intake of carbohydrates and protein is critical to maintain performance, as well as preventing drastic changes in body composition (reduced lean body mass).
- Educating workers on appropriate pre-, on- and post-shift fluid and nutrition consumption may represent a practical and effective means for maintaining PDO worker performance and health.

Physically Demanding Occupations (PDOs) are both physically and cognitively straining. These occupations, which include positions in structural and wildland firefighting, agriculture, construction, manufacturing and the military, require high levels of energy expenditure, mental awareness and technical skill to complete their work, while also potentially being exposed to extreme environmental challenges such as heat and/or high altitude.

Extreme environmental conditions can have severe consequences on worker health. Along with the environmental stress factors, studies have suggested that those in PDOs, such as the military or wildland firefighting, may not be consuming sufficient calories to keep up with the demands of their daily tasks. Collectively, with the known physical and cognitive demands of these occupations, PDO workers also need to contend with the environmental strains and energetic deficits that can severely impact work performance. (See Figure 1 below.)

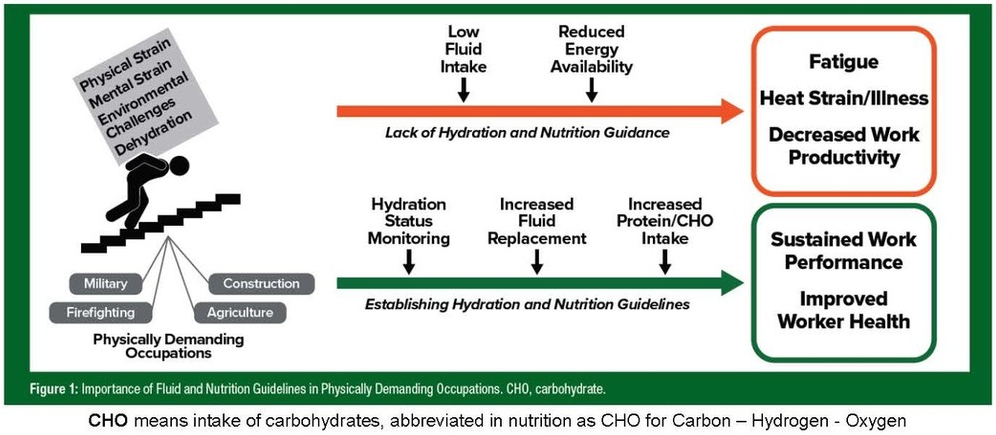

Figure 1: Importance of Fluid and Nutrition Guidelines in Physically Demanding Occupations. CHO, carbohydrate.

CHO means intake of carbohydrates, abbreviated in nutrition as CHO for Carbon – Hydrogen - Oxygen

In general, ***hypohydration*** (i.e., a sustained decrease in body water) may lead to an increased risk of heat-related illness, decreased hypovolemia and hemorrhagic injury tolerance, reduced cognitive function and alertness and reduced physical work capacity and productivity.

Weekly Safety Share

SPCC Plans: Minimizing Risk / Maximizing Benefits

Safety & Health Share

SPCC Plans:

Minimizing Risk / Maximizing Benefits

Oil spills have always been a risk for industrial operations. Thankfully, large-scale, catastrophic oil spills such as the 2010 Deepwater Horizon disaster, conjuring up images of devastated ecosystems and oil-soaked wildlife, are rare occurrences.

Smaller spills, though less catastrophic, are much more common and still cumulatively inflict significant environmental damage.

According to the Environmental Protection Agency (EPA), **a one-gallon oil spill can contaminate one million gallons of water.**

The federal **Spill Prevention, Control, and Countermeasure (SPCC)** regulations provide a framework for oil storage facilities to prevent oil from reaching navigable waters and adjoining shorelines, and to contain discharges of oil.

Applicability

SPCC regulations apply to facilities that:

- *Are non-transportation-related;*
- *Are engaged in drilling, producing, gathering, storing, processing, refining, transferring, distributing, using or consuming oil;*
- *May be reasonably be expected to discharge oil in quantities that may be harmful into navigable waters or adjoining shorelines; and*
- *Have total aggregate capacity of aboveground oil storage containers is greater than 1,320 gallons of oil (Not counting containers less than 55 gallons, permanently closed containers, motive power containers, or storage containers used exclusively for wastewater treatment); or*
- *Have total aggregate capacity of completely buried storage tanks greater than 42,000 gallons of oil.*

Make a plan

If your facility meets these criteria, an SPCC plan is needed. This plan describes oil handling operations, spill prevention practices, discharge or drainage controls, and the personnel, equipment and resources at the facility used to prevent oil spills from reaching navigable waters or adjoining shorelines. It's crucial to keep the SPCC plan updated and readily available at the facility.

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