Worksite: _____ Instructor: _____ Date/Time: _____

Topic C838: Beat the Heat (B)

Introduction: To work safely and effectively during hot workdays, precautions must be taken. Over-exposure to high temperature and humidity levels during prolonged exertion may result in heat disorders such as heat cramps, heat exhaustion, or heat stroke. Hyperthermia is the medical term used to describe the over-heating of the human body's core temperature. Common sense and thoughtful scheduling is the best way to prevent heat related illnesses, but the situation may call for other measures to protect workers from heat-related illness.

There are several risk factors that determine the likelihood that workers will suffer heat-related illness.

Environmental factors: which determine the heat at the work site, are the biggest threat. OSHA recommends employers follow the "heat index" to anticipate the types of controls necessary to protect workers from heat illness. The heat index does not take into account air movement, but a breeze can help the body keep cool (unless it is too hot, then it can actually be harmful). Additionally, equipment and processes at the job site such as hot machinery or molten metal can contribute significantly to heat exposure.

A co-worker can help early symptoms and encourage the victim to seek rest, shade and fluids to fend off heat-related illness.

Work-specific factors are determined by the work being done. Some jobs demand more exertion and can elevate a worker's body temperature significantly. Long stretches of heavy physical effort without rest expose workers to heat-related illness. Further, work demanding special clothing or personal protective equipment prevents body heat dissipation and contributes to elevated body temperature.

Personnel-Specific Factors include traits like age, weight and fitness. Further, medications reduce the body's ability to regulate its own temperature, and caffeine, alcohol and other drugs may impair the body's natural cooling functions. Acclimatization describes the body's ability to adapt to high-heat environments over time. It takes about 6 to 7 days for the human body to become acclimated to high heat. New workers and workers coming back from a vacation need more rests and more water, or should be scheduled for less demanding work.

Prevention measures in high-heat and high-humidity environments can prevent workers from succumbing to heat.

Work-rest cycles must permit workers to leave heat or high-exertion tasks (especially during the hottest portions of the day) to rest or perform work that is less demanding on the body's ability to cool down. When work is done in high-heat/high-humidity environments, a cool rest area should be provided. Rest is instrumental to allow the body to regulate its temperature and prevent heat-related illness. Short work-rest cycles are preferable to long rest periods and long periods of exertion.

Engineering solutions for heat hazards at a work site include providing air conditioning, ventilation and insulation against heat. Environmental factors that contribute to the risk of heat-related illness cannot always be controlled, but should be when possible.

Employers must ensure workers have access to sufficient fluids to replace those lost during work in a high-heat/high-humidity environment. Thirst isn't always a reliable gauge for when a worker needs to drink. Instead, a steady intake of 5 to 7 ounces of fluid every 15 to 20 minutes is advised. While sports drinks replenish some electrolytes lost to sweat, cool water is best for most work situations.

Clothing has a significant impact on preventing heat-related illness. When air temperatures are lower than body temperature, clothing inhibits heat dissipation and keeps the body from cooling, whereas in high-temperature, low-humidity environments, clothing can help protect a worker. Personal protective equipment (gloves, suits, etc.) for thermally hazardous jobs can also provide needed protection.

A co-worker can identify early symptoms and encourage the victim to seek rest, shade and fluids to fend off heat-related illness.

Conclusion: While there are a range of factors that contribute to a worker's risk of heat-related illness, providing workers with rest, shade and fluids can protect them from those hazards. Work in hot and humid environments can be done safely as long as there is an awareness of the hazards faced and appropriate precautions are being taken to protect workers.

Employee Attendance: (*Names or signatures of personnel who are attending this meeting*)

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These guidelines do not supersede local, state, or federal regulations and must not be construed as a substitute for, or legal interpretation of, any OSHA regulations.