Workplace Safety & Prevention Services®

INFORMATION

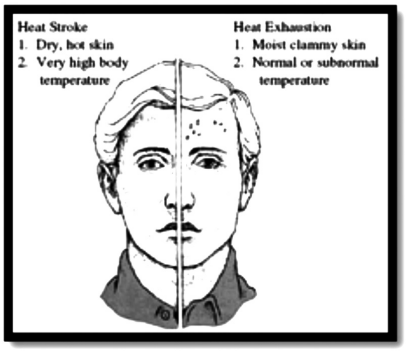
AGRICULTURAL SAFETY TOPICS
HEAT STRESS

Objective:

To be able to identify symptoms of heat stroke and exhaustion and recognize emergency procedures for both.

Background:

Heat stress is a buildup of body heat generated either internally by muscle use or externally by the environment. Heat exhaustion and heat stroke result when the body is overwhelmed by heat. As the heat increases, core body temperature rises and the heart rate increases. As the body temperature increases, it tries to cool itself through the evaporation of sweat. As the body temperature rises above 38 degrees C, sweating can become compromised, based on many factors such as: air temperature outside the body; relative humidity; type of clothing worn; personal factors such as age/gender/medications/hydration levels; and acclimatisation. During hot weather, heat illness may be an underlying cause of other types of injuries such as heart attacks, falls and equipment accidents.



The most serious heat related illness is heat stroke. The symptoms are confusion, irrational behavior, convulsions, coma, and death. In some cases, the side effects of heat stroke are heat sensitivity and varying degrees of brain and kidney damage.

Preventing heat stress will:

- Protect Health – Heat illness is preventable and treatable before it is life threatening.
- Improve Safety – Any heat stress can impair functioning.
- Increase Productivity – People work slower and less efficiently when they are suffering from heat stress.

Employers, supervisors and workers all have an essential role to play in preventing heat stress. Each member of the team should use good judgment to prevent heat related illness. A heat stress control program should protect all workers at the operation, from those who can work comfortably in heat to those in poor physical shape.

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AGRICULTURAL SAFETY TOPICS – HEAT STRESS

Key elements for controlling heat stress are:

- Drink one glass of cool water every 15 to 30 minutes worked, depending on the heat and humidity. This is the best way to hydrate the body. Heavy and prolonged sweating also causes loss of electrolyte which need to be replaced based on the individual needs
- Read medication labels to know how this may cause the body to react to the sun and heat.
- Avoid caffeinated drinks, alcohol and drugs as they may make the body lose water and increase the risk of health effects on the body.
- Build up tolerance, referred to as acclimatisation, for working in the heat. Heat tolerance is normally built up over a one to two week time period. If a worker is away from work for a week, the person needs to be acclimatised again.
- Take breaks in a cooler area to cool down the body. The length of breaks depends on the physical demands of the job and outdoor conditions.
- Adapt work and pace to the weather.
- Provide heat stress training to workers and supervisors.
- Manage work activities and match them to employees' physical condition.
- Use special protective gear, such as cooling garments and cooling vests to reduce the heat stress on the body.
- Know how to recognize heat stress symptoms and how to offer first aid treatments.

Heat stroke first aid:

- Move the victim to a cool place. Remove heavy clothing; light clothing can be left in place.
- Immediately cool the victim by any available means. Such as placing ice packs at areas with abundant blood supply (neck, armpits, and groin). Wet towels or sheets are also effective.
- The cloths should be kept wet with cool water.
- To prevent hypothermia continue cooling the victim until their temperature drops to 102°F (39°C).
- Keep the victim's head and shoulders slightly elevated.
- Seek medical attention immediately. All heat stroke victims need hospitalization.
- Care for seizures if they occur.
- You do not want to provide any medication whatsoever unless advised by medical staff.

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Heat exhaustion first aid:

- Move the victim to a cool place.
- Keep the victim lying down with legs straight and elevated 8-12 inches (20-30cm).
- Cool the victim by applying cold packs or wet towels or cloths. Fan the victim.
- Give the victim cold water if he or she is fully conscious.
- If no improvement is noted within 30 minutes, seek medical attention.

When possible, schedule heavy tasks and work requiring protective gear for cooler, morning or evening hours. Prolonged, extreme hot temperatures mandate the postponement of nonessential tasks.

Most protective garments limit sweat evaporation (but not sweat production) and chemical-resistant suits can cause rapid dehydration if sweat is not replaced. When wearing PPE, one way to slow the buildup of heat is to use special cooling garments.

Review the Following Points:

- Heat stress is serious and should be handled as such.
- As strain from heat increases, body temperature and heart rate can rise rapidly.
- Exposure to heat can be serious to children and adults.
- Have plenty of liquids available and administer first aid as needed.
- Never ignore anyone's signs or symptoms of heat related disorders.

Based upon: Ohio State University Extension. *Heat Stress*. Retrieved from website http://ohioline.osu.edu/atts/modules.html

Revised: November 2014