JUNE – Study Guide

Heat Related Illnesses

With the summer fast approaching, one concern that always effects the Ready Mix worker during high heat periods are heat-related illnesses. Working in a hot, humid environment can be difficult or even fatal if you ignore the signs and symptoms of heat-related disorders. Heat can create a number of safety problems and illnesses due to additional stress on the body. Heat-related illnesses include:

- Heat Rash
- Heat Syncope
- Heat Cramps
- Heat Exhaustion
- Heat Stroke (which can be fatal if not treated properly)

Heat stress is the body’s response to these factors:

- Environmental heat source
- Amount of exertion required to perform a task
- Amount of time spent in hot or humid conditions
- Type of clothing worn

Outdoor operations conducted in hot weather – such as construction, welding, landscaping and yard work – can cause heat stress among all participants. Age, weight, degree of physical fitness, metabolism, use of alcohol or drugs, and a variety of medical conditions such as hypertension can affect a person’s sensitivity to heat. It is important to remember that it takes time to get used to working in hot or humid conditions. Acclimatization to heat involves a series of changes that occur in an individual during the first week of exposure to hot environmental conditions. Full acclimatization can take up to a week. The ability to maintain full acclimatization can be reduced by several days’ absence from work.

Signs and Symptoms of Heat-Related Illness

**Heat Rash** – a benign skin irritation (prickly heat) caused by excessive sweating during hot humid weather. A result of continuously wet unevaporated sweat; generally localized to areas covered with clothing.

**Heat Syncope** – a fainting (syncope) episode or dizziness that usually occurs with prolonged standing or sudden rising from a sitting or lying position. Contributing factors include dehydration and lack of acclimatization.

**Heat Cramps** – these usually affect workers who sweat a lot during strenuous activity. The sweating deletes the body’s electrolyte and moisture levels causing painful cramps in the arms, legs, and abdomen. Heat cramps may also be a symptom of heat exhaustion. Treat with movement to a cool area and provide with cool water or a commercial sports drink. Usually rest and fluids are needed to recover. Lightly stretch and massage the cramping muscles. Do not give salt tablets or salt water; this can make conditions worse.
**Heat Exhaustion** – the body’s response to excessive loss of water and electrolytes due to excessive sweating and inadequate fluid replacement. The individual will exhibit signs of profuse sweating, pale skin, elevated temperature, dizziness, nausea, hyperventilation, and loss of coordination. They can also develop heat cramps or become faint. Core temperature can increase to over 104 degrees Fahrenheit. Immediate treatment would include moving to a cool/shady place, and sip small amounts of fluid while loosening or removing excess clothing and applying cool, wet, cloths.

**Heat Stroke** – is the most serious heat-related disorder. It occurs when the body becomes unable to control its temperature: the body’s temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down. Symptoms are also characterized by flushed hot skin, sudden collapse, shallow rapid breathing, weak rapid pulse, and possibly seizures. When heat stroke occurs the body temperature can rise to 106 degrees Fahrenheit or higher within 10 to 15 minutes. **Heat stroke is a medical emergency and can cause death or permanent disability if emergency treatment is not received.** If the worker is not alert or seems confused call 9-1-1 immediately and notify your supervisor. On site treatment would be to remove outer clothing and sponge with cool water (*Do not immerse in water, this could send the person into shock*). If the person is conscious give them cool water to sip. Refusing water, vomiting or diarrhea and changes in consciousness mean that the person’s condition is getting worse. Someone must stay with the worker until help arrives.

**Tips for preventing heat-related illness**

- Know the signs and symptoms of heat illness; monitor yourself; use a buddy system.
- Drink plenty of fluids. Drink often and BEFORE you are thirsty. Drink water every 15 minutes
- Avoid beverages containing alcohol or caffeine.
- Wear lightweight, light-colored, loose-fitting clothes.
- Frequently apply sunscreen with an SPF of 15 or more.