

## “Preventing Heat Stress”

Hot conditions put your body under a lot of stress. Physical activity stresses the body even more. When heat is combined with physical activity, loss of fluids, fatigue, and other conditions can lead to a number of heat-related illnesses and injuries. Death is even possible.

Heat stress is commonly associated with warm weather. It's true that warm weather increases the number of heat-stress injuries and illnesses. Warm weather isn't the only cause of heat stress, though. Heat stress can occur any time the surrounding temperature is elevated. Even if the weather is cool, you may work in warm areas, indoors or out. Be alert for conditions which could cause heat stress and take precautions to prevent it. Six main factors are involved in causing heat stress:

- temperature
- humidity
- movement of air
- radiant temperature of the surroundings
- clothing
- physical activity

Adjusting to these factors and/or controlling them reduce the chance of heat stress.

Your body can adjust to working in a warm environment through a process known as “acclimatization.” Acclimatization processes involve gradually increasing the amount of time you spend working in a hot environment. This gradual increase allows your body to properly adjust to the heat.

Keep in mind, though, even if you're already acclimatized, conditions can change which stress your body even more. Bright sunshine, high humidity, and sources of heat in the workplace can affect your body's ability to cool itself. If conditions change, make sure you re-acclimate yourself to the new conditions. If you're away from work for a few days or if you experience a brief period of cooler temperatures while working, you will need to re-acclimate yourself before you try to work the full shift in the hot conditions.

The major heat stress injuries and illnesses are described below:

**Heat Rash** is caused by a hot, humid environment and plugged sweat glands. It is a bumpy red rash which itches severely. It is not life-threatening but is very annoying. Dry clothes that help sweat evaporate will reduce the chance of heat rash. Washing regularly and keeping the skin clean and dry will help prevent heat rash.

**Heat Cramps** are painful muscle cramps caused by a loss of body salt through excessive sweating. To help prevent heat cramps, drink plenty of non-alcoholic, caffeine-free fluids while working in a hot environment. Anyone suffering from heat cramps should be watched carefully for signs of more serious heat stress. If the cramps persist or other symptoms develop, seek medical attention immediately.

**Heat Syncope** (pronounced “sin-co-pay”) is sudden fainting caused by a reduced blood flow to the head. The victim's skin will be cool and moist and their pulse will be weak. Immediate medical attention is needed in the event of syncope.

**Heat Exhaustion** results from inadequate salt and water intake and is a sign the body's cooling system is not working properly. The victim will sweat heavily, their skin will be cool and moist, their pulse weak, and they will seem tired, confused, clumsy, irritable or upset, they may breathe rapidly – even pant – and their vision may be blurred. The victim may strongly argue that they are okay even with these obvious symptoms. If you suspect heat exhaustion, don't let the victim talk you out of seeking immediate medical attention. The heat exhaustion will affect their ability to exercise good judgment. Until medical help

arrives, try to cool the victim and offer sips of cool water as long as the victim is conscious. Immediate medical attention is required. Heat exhaustion can quickly lead to a heat stroke.

**Heat Stroke** is the deadliest of all heat stress conditions. It occurs when the body's cooling mechanism has shut down after extreme loss of salt and fluids. The body temperature will rise, the victim's skin is hot, red, dry, their pulse fast, and they may complain of headache or dizziness. They will probably be weak, confused, and upset. Later stages of heat stroke cause a loss of consciousness and may lead to convulsions. In the event of heat stroke, seek immediate medical attention. Until help arrives, try to cool the victim and offer sips of cool water if the victim is conscious.

The following are some tips found in the OSHA publication 3154, that if applied can assist in the protection of the people working in hot environments:

- **Learn the signs and symptoms of heat-induced illnesses and how to respond,**
- **Train your workforce about heat-induced illnesses,**
- **Perform the heaviest work during the coolest part of the day,**
- **Build up tolerance to the heat and the work activity slowly,**
- **Use the buddy system, with people working in pairs,**
- **Drink plenty of cool water, about a cup every 15 to 20 minutes,**
- **Wear light, loose-fitting, breathable clothing, such as cotton,**
- **Take frequent, short breaks in cool, shaded areas to allow the body to cool down,**
- **Avoid eating large meals before working in hot environments,**
- **Avoid alcohol or beverages with caffeine. These make the body lose water and increase the risk for heat illnesses.**

Preventing heat stress is a matter of controlling the factors that cause it. Use the precautions mentioned above and don't hesitate to seek assistance if you suspect heat stress. Your good health depends on it!

