Summertime—got water?

With the coming of summer once again, I thought it would be a good idea to provide a reminder about how to deal with the months ahead. With summer comes the heat and humidity, so being able to protect yourself is key. I am sharing the following information from the OSHA publication *Protecting Workers in Hot Environments*. This will help you to understand the way heat puts stress on your body and why it is important to have water handy when the sun is beating down on you.

Heat stress causes body reactions. Four environmental factors affect the amount of stress a worker faces in a hot work area: temperature, humidity, radiant heat and air velocity. Perhaps most important to the level of stress an individual faces are personal characteristics such as age, weight, fitness, medical condition and acclimatization to the heat. The body reacts to high external temperature by circulating blood to the skin, which increases skin temperature and allows the body to give off excess heat. However, if the muscles are being used for physical labor, less blood is available to flow to the skin and release the heat.

Sweating is another means the body uses to maintain a stable internal body temperature in the face of heat. Sweating, however, is effective only if the humidity level is low enough to permit evaporation and if the fluids and salt lost are adequately replaced. There are many steps a person might choose to take to reduce the risk of heat stress, such as moving to a cooler place, reducing the work pace or load, or removing or loosening some clothing.

But if the body cannot dispose of excess heat, it will store it. When this happens, the body's core temperature rises and the heart rate increases. As the body continues to store heat, the individual begins to have difficulty focusing on a task, may become irritable or sick and often loses the desire to drink. The next stage is most often fainting. Death is possible if the person is not removed from the heat stress.

Heat stroke, the most serious health problem for a worker in hot environments, is caused by the failure of the body's internal mechanism to regulate its core temperature. Sweating stops and the body can no longer rid itself of excess heat. Signs include mental confusion, delirium, loss of consciousness, convulsions or coma; a body temperature of 106 degrees or higher; and hot dry skin which may be red, mottled or bluish. Victims of heat stroke will die unless treated promptly. While awaiting medical help, the victim must be removed to a cool area and his or her clothing should be soaked with cool water. He or she should be fanned vigorously to increase cooling. Prompt first aid can prevent permanent injury to the brain and vital organs.

Heat exhaustion results from loss of fluid through sweating when a worker has failed to drink enough fluids or consume enough salt, or both. The worker with heat exhaustion still sweats but experiences extreme weakness or fatigue, giddiness, nausea or headache. The skin is clammy and moist, the complexion pale or flushed, and the body temperature normal or slightly higher. Treatment is usually simple: The victim should rest in a cool place and drink an electrolyte solution. Severe cases involving victims who vomit or lose consciousness may require longer treatment under medical supervision.

Heat cramps, or painful spasms of the muscles, are caused when workers drink large quantities of water but fail to replace their body's salt loss. Tired muscles—those used for performing the work—are usually the ones most susceptible to cramps. Cramps may occur during or after working hours and may be relieved by taking liquids by mouth or saline solutions intravenously for quicker relief.

Fainting (heat syncope) may be a problem for the worker unaccustomed to a hot environment who simply stands still in the heat. Victims usually recover quickly after a brief period of lying down. Moving around, rather than standing still, will usually reduce the possibility of fainting.

***Working in Hot Environments*, a 15-page booklet, is available** for free from the National Institute for Occupational Safety and Health publication office by calling 800-35-NIOSH. A link to the booklet can also be found on its website at cdc.gov/niosh/hotenvt.html. Learn to recognize the symptoms of heat disorders, work safely at all times and have a safe summer. ✉