Avoiding Heat Stress

WHAT'S AT STAKE?

Any worker exposed to hot and humid conditions is at risk of heat illness, especially those doing heavy work tasks or using bulky protective clothing and equipment. Some workers might be at greater risk than others if they have not built up a tolerance to hot conditions, including new workers, temporary workers, or those returning to work after a week or more off. All workers are at risk during a heat wave.

WHAT'S THE DANGER?

Workers at risk of heat stress include outdoor workers and workers in hot environments such as firefighters, bakery workers, farmers, construction workers, miners, boiler room workers, factory workers, and others. Workers at greater risk of heat stress include those who are 65 years of age or older, are overweight, have heart disease or high blood pressure, or take medications that may be affected by extreme heat.

The main heat related illnesses are heat rash, heat stroke, heat exhaustion, and heat cramps.

Heat Rash. Heat rash is generally misunderstood to be an affliction for babies, but heat rash can affect adults, too, especially during hot, humid weather. Heat rash develops when blocked pores, or sweat ducts, trap perspiration under your skin.

Symptoms. Adults usually develop heat rash in skin folds where clothing causes friction. Symptoms include superficial blisters and can even present as deep, red lumps. Some forms of heat rash can feel extremely itchy.

Heat Cramps. Heat cramps are painful, brief muscle cramps where the muscles may spasm or jerk involuntarily. These cramps can begin during the activity in the heat, or may start several hours later. Muscles that are most susceptible to heat cramps are those that are usually fatigued by heavy work such as calves, thighs and shoulders.

The exact cause of heat cramps is unknown, but medical professionals are able to boil it down to a chemical imbalance in the muscles—usually related to electrolytes. Electrolytes include various essential minerals, such as sodium, potassium, calcium and magnesium. They are involved in the chemical reactions of your muscles, and an imbalance can cause issues.

Symptoms. Someone who is experiencing heat cramps will feel muscle spasms that are painful, involuntary, brief, intermittent and self-limited (meaning, they go away on their own).

Heat Exhaustion. Heat exhaustion is a result of your body overheating and can cause heavy sweating, rapid pulse, dizziness and low blood pressure upon standing. Causes of heat exhaustion include exposure to high temperatures, particularly when combined with high humidity and vigorous physical activity.

Symptoms. Without prompt treatment, heat exhaustion can quickly lead to heat stroke, a life-threatening condition, so it is important to know the signs of someone who is likely suffering from heat exhaustion. Signs and symptoms may develop suddenly or over time and include cool, moist skin with goose bumps in the heat, heavy sweating, faintness, dizziness, fatigue, weak and rapid pulse, low blood pressure upon standing, headache, nausea and muscle cramps.

Heat Stroke. Heat stroke is the most serious form of heat injury and can occur if your body temperature rises to 104 Fahrenheit or higher. Heat stroke requires emergency treatment, and if left untreated, can quickly damage the brain, heart, kidneys and muscles. Damage to internal organs worsens the longer treatment is delayed, increasing your risk of serious complications or death.

While anyone can develop heat stroke, there are several factors that can increase the risk of illness such as age, exertion in hot weather, a lack of cool air or air conditioning, certain medications and certain health conditions.

Symptoms. Heat stroke symptoms include high body temperature, altered mental state or behavior, alteration in sweating, nausea and vomiting, flushed skin, rapid breathing, racing heart rate and headache.

Causes of Heat-Related illnesses

Dehydration – to keep healthy, our body temperature needs to stay around 37°C. The body cools itself by sweating, which normally accounts for 70 to 80 per cent of the body's heat loss. If a person becomes dehydrated, they don't sweat as much and their body temperature keeps rising. Dehydration may happen after strenuous exercise (especially in hot weather), severe diarrhea or vomiting, drinking too much alcohol, taking certain medications (for example, diuretics) and not drinking enough water.

Lack of airflow – working in hot, poorly ventilated or confined areas.

Sun exposure – especially on hot days, between 11am and 3pm.

Hot and crowded conditions – people attending large events (concerts, dance parties or sporting events) in hot or crowded conditions may also experience heat stress that can result in illness.

Bushfires – exposure to radiant heat from bushfires can cause rapid dehydration and heat-related illness. Bushfires usually occur when the temperature is high, which adds to the risk.

Some drugs, such as ecstasy and speed, also raise the body's temperature, which can lead to heat stress.

HOW TO PROTECT YOURSELF

TREATMENT

Heat Rash

- Heat rash will usually clear on its own by cooling the skin and avoiding exposure to the heat that caused it. If symptoms such as increased pain, swelling, redness, or warmth extend for longer than a few days reach out to a doctor for specialized treatment.

Heat Cramps

- To treat heat cramps, begin with rest and a sports drink that includes electrolytes and salt or drink cool water. You can make your own salt solution by mixing a quarter to a half teaspoon of salt into a quart of water.

Usually, heat cramps will dissipate on their own, but if you begin to see conditions worsen and the patient becomes dizzy, nauseous, experiences shortness of breath and a fast heartbeat, you should see a doctor. Heat cramps often accompany a more serious heat-related illness: heat exhaustion.

Heat Exhaustion

- If you see someone who might be experiencing heat exhaustion, instruct them to halt all activity and rest, move to a cooler place and drink cool water or a sports drink.

A doctor should be contacted if signs and symptoms worsen or if they don't improve within one hour. A patient will need immediate cooling and urgent medical attention if their core body temperature reaches 104 Fahrenheit or higher. Those who exhibit confusion, agitation, loses consciousness or is unable to drink must also be taken to see a medical professional as soon as possible.

Heat Stroke

- Someone who is suffering from a heat stroke must take immediate action to cool down their body while waiting for emergency treatment. To do this, move to shade or indoors, remove excess clothing and cool with whatever means available (put in a cool tub of water or a cool shower, spray with a garden hose, sponge with cool water, fan while misting with cool water, or place ice packs or cold, wet towels on the person's head, neck, armpits and groin).

Employer Responsibility

Prevention of heat stress in workers is important. Employers should provide training to workers so they understand what heat stress is, how it affects their health and safety, and how it can be prevented.

Heat can cause more than just discomfort. Exposure to high heat and high humidity can be life threatening. Employers should make sure workers know the signs, symptoms and appropriate first-aid procedures for serious heat illnesses.

Preventing Heat Illness: What employers should do?

Provide adequate amount of drinking water. – As much as one quart per worker per hour. Provide **EASY** access to this water!! Providing liquids like Gatorade, with electrolytes in it, is also important to replace what is lost through sweat.

Provide regular rest breaks or rest periods. Rest breaks should be taken in a cool area. Employers should provide rest breaks in accordance with how hot the work environment is, and how heavy the work load. Workers in hotter work environments and with heavier workloads should be provided with more frequent rest breaks.

Increase the air circulation. Use air conditioning, fans and general ventilation to cool down the work area and cool off workers.

Alert workers to the early signs of heat-related illness. Allow workers who experience these early signs to take a break. Heat-related illnesses can come on very rapidly and can be fatal.

New, or acclimatized workers should not be allowed to work full-time, right away, in a high heat area. It takes about one week for the body to adjust to working in the

heat.

OSHA has the following recommendations to prevent the ill – effects of heat stress.

- Protect new workers during the first two weeks on the job. Make sure they take plenty of rest breaks and drink enough fluids.
- Never leave workers alone when they complain of heat-related symptoms. Their conditions can worsen quickly! Take them to a cool location and provide first aid. Even a brief delay in first aid can make the difference between life and death.
- Temperatures do not have to be extremely hot to cause heat stroke in workers. Remember, total heat stress is a combination of environmental heat and workload. Air temperatures in the 80s (°F) are high enough to result in a Heat Index value of 90°F. They are also high enough to kill some workers.
- Even experienced workers are vulnerable to heat-related illness when the weather becomes warmer. Throughout the first week of warmer conditions, treat all workers as if they need to adapt to working in the heat. Take extra precautions to protect them from heat-related illnesses.
- Make sure workers drink enough fluids during warm or hot weather.
- Heat-related illness can occur indoors. The risk is not limited to outdoor workers.
- Some types of work clothing prevent the release of heat from the body. Environmental heat measurements underestimate the risk of heat-related illness in these situations.
- Workers are at risk of heat-related illness when they are reassigned to warmer job tasks.

Overview – Specific Steps for Employers to reduce Heat Hazards

- Let workers drink as much water as they want whenever they want while working in hot conditions;
- Schedule short shifts and frequent breaks to limit how long workers exert themselves in the heat; and
- Develop a heat stress program that includes specific procedures to be followed for heat-related emergency situations.
- Conduct heat stress assessments to determine workers’ risk of hazardous exposure.
- Implement engineering and administrative controls.

FINAL WORD

Every minute’s delay in cooling a person with heatstroke increases the likelihood of permanent injury or death. Apply first aid and seek medical assistance immediately if you, or someone you are with, shows any sign of heat exhaustion or heatstroke.