

HBACA Safety Committee April 2024

Tool Box Talk #2

Exposure to High Temperatures

When it's hot your body pumps a higher volume of blood to your skin causing you to sweat. As the sweat evaporates off the skin it helps cool you. This works best when the air is cooler than your body temperature. If your body is struggling to cool off your core temperature may rise and your heart will have to work harder as it pumps blood to meet the additional demands of stimulating a sweat response. When your body can no longer keep up with these demands you are at risk for a heat illness.

Heat exposure causes the following illnesses:

Heat edema is swelling which generally occurs among people who are not acclimatized to working in hot conditions. Swelling is often most noticeable in the ankles. Recovery occurs after a day or two in a cool environment.

Heat rashes are tiny red spots on the skin which cause a prickling sensation during heat exposure. The spots are the result of inflammation caused when the ducts of sweat glands become plugged.

Heat cramps are sharp pains in the muscles that may occur alone or be combined with one of the other heat stress disorders. The cause is salt imbalance resulting from the failure to replace salt lost with sweat. Cramps most often occur when people drink large amounts of water without sufficient salt (electrolyte) replacement.

Heat exhaustion comes in two ways, water depletion and salt depletion. Signs and symptoms of heat exhaustion include: heavy sweating, weakness, dizziness, visual disturbances, intense thirst, nausea, headache, vomiting, diarrhea, muscle cramps, breathlessness, palpitations, tingling and numbness of the hands and feet. Recovery occurs after resting in a cool area and consuming cool drinks (e.g., water, clear juice, or a sports drink).

Heat syncope is heat-induced dizziness and fainting induced by temporarily insufficient flow of blood to the brain while a person is standing. It occurs mostly among unacclimatized people. It is caused by the loss of body fluids through sweating, and by lowered blood pressure due to pooling of blood in the legs. Recovery is rapid after rest in a cool area.

Heat stroke is the most serious type of heat illness. Signs of heat stroke include body temperature often greater than 105°F, and complete or partial loss of consciousness. Sweating is not a good sign of heat stress as there are two types of heat stroke - "classical" where there is little or no sweating (usually occurs in children, persons who are chronically ill, and the elderly), and "exertional" where body temperature rises because of strenuous exercise or work and sweating is usually present.

Heat stroke requires immediate first aid and medical attention. Delayed treatment may result in death.



What are symptoms and first aid steps for heat exhaustion?

Symptoms of heat exhaustion may start suddenly and include:

- Nausea or irritability.
- Dizziness.
- Muscle cramps or weakness.
- Feeling faint.
- Headache.
- Fatigue.
- Thirst.
- Heavy sweating.
- High body temperature.
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First aid for heat exhaustion includes:



- Get medical aid. Stay with the person until help arrives.
- Move to a cooler, shaded location.
- Remove as many clothes as possible (including socks and shoes).
- Apply cool, wet cloth or ice to head, face or neck. Spray with cool water.
- Encourage the person to drink water, clear juice, or a sports drink.

What are the symptoms and first aid steps for heat stroke?

Heat exhaustion may quickly develop into heat stroke. Symptoms of heat stroke include:

- Hot, dry skin or profuse sweating.
- Confusion.
- Loss of consciousness.
- Seizures.
- Very high body temperature.

First aid for heat stroke includes:

- **Call 911 immediately. Heat stroke is a medical emergency.**
- Stay with the person until help arrives.
- Move to a cooler, shaded location.
- Remove as many clothes as possible (including socks and shoes).
- Wet the person's skin and clothing with cool water.
- Apply cold, wet cloth or ice to head, face, neck, armpits and groin.
- Do not try to force the person to drink liquids.



Know the signs of heat-related injuries in workers on the construction site. The attitude of being tough and pushing through the pain could have lethal consequences. Have a plan and supplies in place for dealing with heat stress on your construction site.