Heat Stress

What is Heat Stress?

Heat stress is a condition that occurs when an individual is exposed to extreme heat and the body is unable to cool itself by sweating. The level of heat stress can vary ranging from heat rash and heat cramps to more severe conditions such as heat exhaustion or heatstroke.

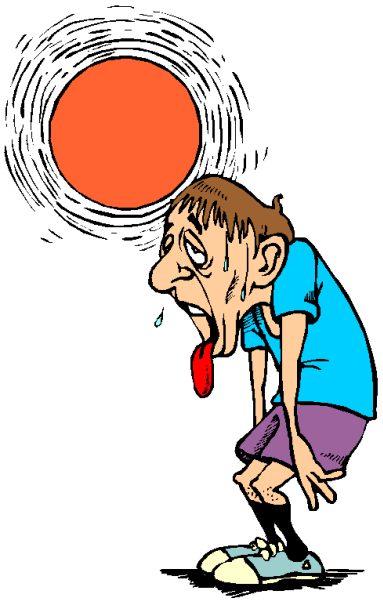
HOW DOES HEAT STRESS OCCUR?

Heat stress occurs when the body becomes dehydrated and is unable to cool itself enough to maintain a healthy temperature.

When an individual is in a hot environment, they body must get rid of excess heat to maintain a stable internal temperature by circulating blood to the skin and through sweating.

When the temperature is close to or warmer than normal body temperature, cooling of the body becomes more difficult. Blood circulated to the skin cannot lose its heat. Sweating then becomes the main way the body cools off. But sweating is effective only if the humidity level is low enough to allow evaporation and if the fluids and salts that are lost are adequately replaced.

If the body cannot get rid of excess heat, it will store it. When this happens, the body's core temperature rises and the heart rate increases. This can result in heat-induced illnesses as well as an increased risk for injuries due to fogged up safety glasses, dizziness and falling.



FACTORS THAT MAY CAUSE HEAT RELATED ILLNESS

- High temperature and humidity
- Low fluid consumption
- Direct sun exposure (with no shade) or extreme heat
- Limited air movement (no breeze or wind)
- Physical exertion
- Use of bulky protective clothing and equipment
- Poor physical condition or ongoing health problems
- Some medications
- Lack of previous exposure to hot workplaces
- Previous heat-related illness

WHO IS AT INCREASED RISK FOR HEAT STRESS?

If you or someone you know fit into one of these categories, they are at a higher risk to get heat stress:

- Workers exposed to hot indoor environments or hot and humid conditions outdoors
- Elderly people (65 years or older)
- Infants and children
- Pregnant and nursing mothers
- People with chronic medical conditions (such as heart conditions, high blood pressure, kidney disease or lung disease)
- Specific medications (check with your pharmacist)

FACT: Body temperature is the body's ability to generate and get rid of heat. Normal body temperature varies through the day – it's lower in the morning and higher in the late afternoon and evening. Although most people consider 98.6 F (37 C) normal, your body temperature can vary by a degree or more – from about 97 F (36.1 C) to 99 F (37.2 C) – and still be considered normal.

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TYPES OF HEAT STRESS

HEAT RASH

Heat rash is a skin irritation caused by excessive sweating during hot, humid weather. It develops when your sweat ducts (pores) become blocked and perspiration is trapped under your skin.

Symptoms include: rash (like a red cluster of pimples or small blisters or red lumps or patchiness). It is more likely to occur on the neck and upper chest, in the groin, under the breasts and in elbow creases. Some forms of heat rash can be intensely itchy or cause a prickly feeling.

Heat rash usually goes away on its own. The best way to relieve symptoms is to cool your skin and to keep the affected area dry.

HEAT CRAMPS

Heat cramps are painful, involuntary muscle spasms usually affecting the arms, legs or stomach.

Some signs and symptoms of heat cramps usually include excess sweating, fatigue, thirst and cramps.

If you have a heat cramp, rest briefly and cool down. Drink clear juice or an electrolyte containing sports drink and practice gentle, range of motion stretching and gentle massage to the affected muscle group.

HEAT EXHAUSTION

Heat exhaustion is a result of the combination of excessive heat and dehydration. It's the body's response to an excessive loss of the water and salt, usually through excessive sweating. It can develop suddenly or over time.

Symptoms of heat exhaustion include: headache, nausea, dizziness or weakness, weak rapid pulse, confusion, thirst, heavy sweating, cool moist skin with goose bumps when in the heat.

Often with heat exhaustion you can treat the symptoms yourself by following the same as heat cramps such as drinking cool beverages, cooling yourself down in the shade or taking a cool shower. If your symptoms persist, seek medical attention immediately. Without prompt treatment, heat exhaustion can lead to heat stroke, a life-threatening condition.

HEATSTROKE

Heat stroke is the most serious heat related health problem. Heat stroke occurs when the body's temperature regulating system fails and body temperature rises to critical levels.

The signs of heat stroke are: high body temperature (104 F (40 C) or higher), lack of sweating, nausea and vomiting (or feel sick to your stomach), flushed skin (the skin may turn red as the body temperature increases), rapid and shallow breathing, racing heart beat (because your heart is working harder to try to cool your body), headache, confusion (including hallucinations, difficulty speaking or understanding what others are saying), muscle cramps or weakness (muscles may feel tender and then go limp or rigid) and even unconsciousness and seizures.

THIS IS A MEDICAL EMERGENCY. In a period of hours, untreated heatstroke can cause damage to the brain, heart, kidneys and muscles.

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TREATMENT

In general, if you suspect someone has symptoms of heat exhaustion:

- Get the individual out of the sun and into a shady or air-conditioned location,
- Lay the person down and elevate their legs and feet slightly,
- Loosen or remove any excess clothing,
- Have the individual drink cool water or other nonalcoholic beverage without caffeine (Gatorade or Pedialyte are best if available),
- Cool the individual by spraying or sponging with cool water and fanning,
- Apply cold compresses (to the neck, armpits and groin),
- Monitor them carefully. Heat exhaustion can quickly become heatstroke.

CALL 911 or emergency medical services if the person's condition deteriorates, especially if fainting, confusion, seizures or if a fever of 104 F (40 C) or greater occurs with other symptoms.

- While waiting for medical assistance, if not already done, help the person move to a shaded or cool location and remove any excess clothing. It is important to cool down the individual by placing cool cloths to the skin (ice packs to the neck, armpits and groin) and fanning the individual to encourage evaporation.

PREVENTION

Heat related illnesses can be prevented. Important ways to reduce heat exposure and the risk of heat related illness include:

- Pay attention to weather forecasts and be prepared.
- Try to schedule heavy work during the coolest part of the day (if possible).
- Wear light colored, loose-fitting, breathable clothing such as cotton. Avoid non-breathing synthetic clothing.
- Be aware that protective clothing or personal protective equipment may increase the risk of heat stress.
- Stay hydrated – drink plenty of fluids in frequent, small amounts, before, during and after work. Increase your fluid intake regardless of your activity level.
- Take frequent breaks to hydrate yourself.
- Protect yourself from the sun (cover exposed skin, use sunscreen, wear a hat, seek shade and wear sunglasses).
- Eat regular, light meals. Get plenty of electrolytes like potassium, magnesium, sodium and calcium. Fruits and vegetables and their juices are great sources.
- Avoid alcohol and drinks with large amounts of caffeine or sugar.
- Know the signs and symptoms of heat related illnesses and monitor your family, friends, co-worker and yourself. Report heat symptoms early.