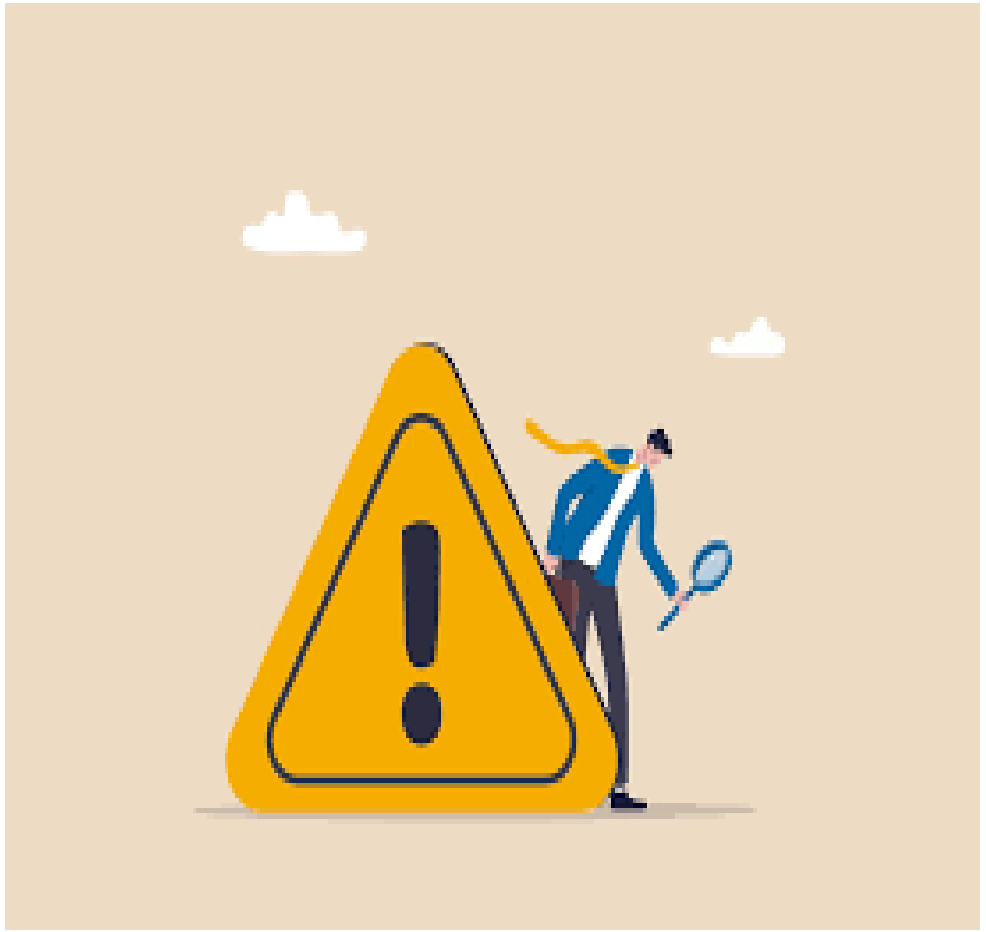
NPCA

National Precast Concrete Association

precast.org

Hydration & Heat Exposure



The Scary Truth

US Heat Deaths in 2022 already higher than 30 Year Average.

OSHA investigates 15-20 Heat Related Deaths per year and 1000+ Heat Related Injuries. Action must be taken to mitigate these preventable tragedies.

OSHA – National Emphasis Program – Outdoor and Indoor Heat Hazards

The NEP creates, for the first time, a nationwide enforcement mechanism for OSHA to proactively inspect workplaces for heat-related hazards in general industry, maritime, construction, or agriculture operation alleging hazardous exposures to heat (outdoors and/or indoors). This means that OSHA can now launch heat-related inspections on high-risk worksites before workers suffer preventable injuries, illnesses, or fatalities.

****Please note, each state may have modified regulations and local policy should be reviewed via state publicized resources****

OSHA.GOV/HEAT

Creation of Heat Illness Prevention Plan

Employers should create a written plan to prevent heat-related illness. Use the tools on this web site (https://www.osha.gov/heat-exposure/planning) to help. Important elements to consider when creating the heat plan are:

•Who will provide oversight on a daily basis? **Supervisors and Identified personal should be trained on Heat Related Illness, Identification of dangerous conditions, Identification of signs and symptoms and First Aid and Prevention.**
•How will new workers gradually develop heat tolerance?
•Temporary workers may be more susceptible to heat and require closer supervision.
•Workers returning from extended leave (typically defined as more than two weeks) may also be at increased risk.
•How will the employer ensure that first aid is adequate and the protocol for summoning medical assistance in situations beyond first-aid is effective?
•What engineering controls and work practices will be used to reduce heat stress?
•How will heat stress be measured?
•How to respond when the National Weather Service issues a heat advisory or heat warning?
•How will we determine if the total heat stress is hazardous?

Day-to-Day Supervision

Heat conditions can change rapidly and management commitment to adjusting heat stress controls is critical to prevent heat illness. An individual at the worksite should be responsible for monitoring conditions and implementing the employer's heat plan ***throughout the workday***. This individual can be a foreman, jobsite supervisor, plant manager, safety director, or anyone else with the proper training. Proper training includes knowing how to:

•identify and control heat hazards;
•recognize early symptoms of heat stress;
•administer first aid for heat-related illnesses; and
•activate emergency medical services quickly when needed.

OSHA – NIOSH – Free Heat Safety Tool - APP

OSHA-NIOSH Heat Safety Tool 12+

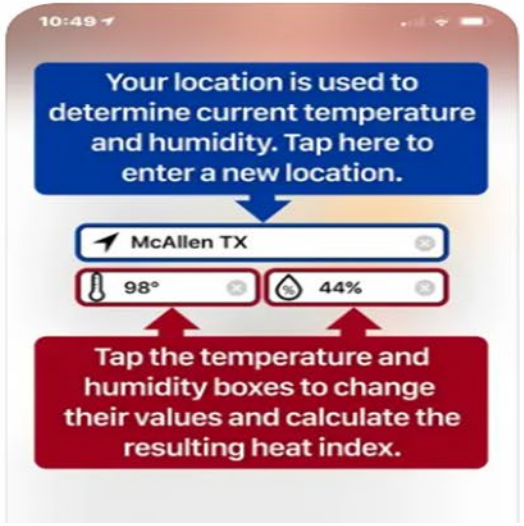
Centers For Disease Control and Prevention

#200 in Weather

★★★☆☆ 2.8 • 112 Ratings

Free

iPhone Screenshots



Heat Related Illness and First Aid

Heat-Related Illness	Symptoms and Signs
Heat stroke	•Confusion •Slurred speech •Unconsciousness •Seizures •Heavy sweating or hot, dry skin •Very high body temperature •Rapid heart rate
Heat exhaustion	•Fatigue •Irritability •Thirst •Nausea or vomiting •Dizziness or lightheadedness •Heavy sweating •Elevated body temperature or fast heart rate
Heat cramps	•Muscle spasms or pain •Usually in legs, arms, or trunk
Heat syncope	•Fainting •Dizziness
Heat rash	•Clusters of red bumps on skin •Often appears on neck, upper chest, and skin folds
Rhabdomyolysis (muscle breakdown)	•Muscle pain •Dark urine or reduced urine output •Weakness

OSHA's Medical Services and First Aid standard and the Medical Service and First Aid in Construction require the ready availability of first aid personnel and equipment. First aid for heat-related illness involves the following principles:

•Take the affected worker to a cooler area (e.g., shade or air conditioning)

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•Cool the worker immediately. Use active cooling techniques such as:

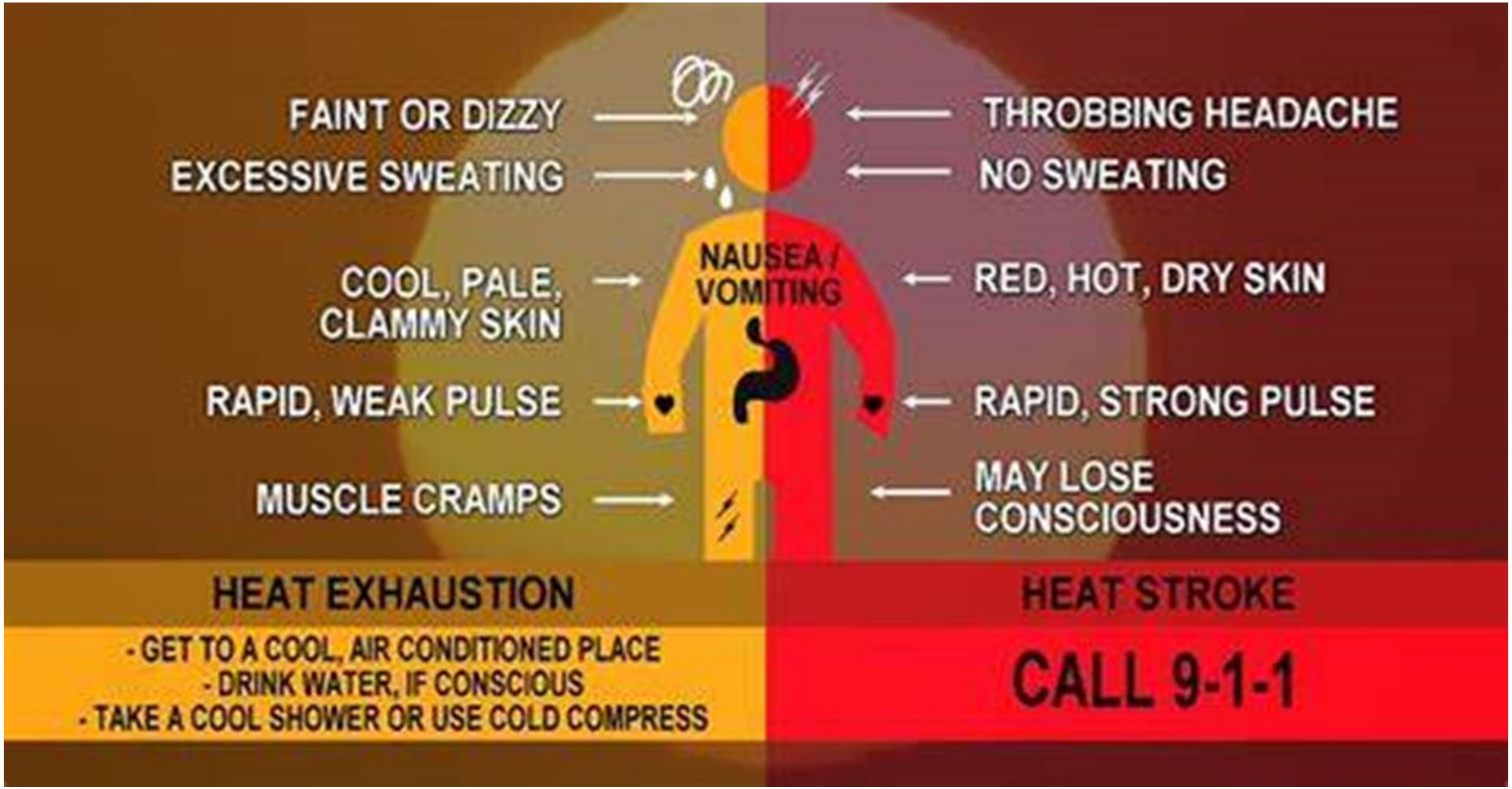
- •Immerse the worker in cold water or an ice bath. Create the ice bath by placing all of the available ice into a large container with water, standard practice in sports. **This is the best method to cool workers rapidly in an emergency**.
- •Remove outer layers of clothing, especially heavy protective clothing.
- •Place ice or cold wet towels on the head, neck, trunk, armpits, and groin.
- •Use fans to circulate air around the worker.

•Never leave a worker with heat-related illness alone. The illness can rapidly become worse. Stay with the worker.

•When in doubt, call 911!

Confusion, slurred speech, or unconsciousness are signs of heat stroke.

When these types of symptoms are present, call 911 immediately and cool the worker with ice or cold water until help arrives.


FAINT OR DIZZY
EXCESSIVE SWEATING
COOL, PALE, CLAMMY SKIN
RAPID, WEAK PULSE
MUSCLE CRAMPS
NAUSEA / VOMITING
THROBBING HEADACHE
NO SWEATING
RED, HOT, DRY SKIN
RAPID, STRONG PULSE
MAY LOSE CONSCIOUSNESS
HEAT EXHAUSTION
- GET TO A COOL, AIR CONDITIONED PLACE
- DRINK WATER, IF CONSCIOUS
- TAKE A COOL SHOWER OR USE COLD COMPRESS
HEAT STROKE
CALL 9-1-1

Prevention

Protect New Workers

Almost half of heat-related deaths occur on a worker's very first day on the job (Arbury 2014).
•Over 70 percent of heat-related deaths occur during a worker's first week (Tustin 2018).
These tragedies can be avoided if employers take actions to protect new workers.
Throughout this section, the term "workers who are new to working in warm environments" includes the following groups:

1. New, temporary, or existing employees who start new work activities:
    a. in warm or hot environments
    b. while wearing additional clothing (e.g., chemical protective clothing)
    c. with increased physical activity
2. Workers returning to work environments with potential exposure to heat hazards after an absence of one week or more for example returning from any kind of extended leave.
3. Workers who continue working through seasonal changes when temperatures first begin to increase in the spring or early summer.
4. Workers who work on days when the weather is significantly warmer than on previous days (i.e., heat wave).

Factors regarding acclimatization

Individuals react different to HEAT based on a multitude of reason.

Age, acclimatization, physical condition.....etc.

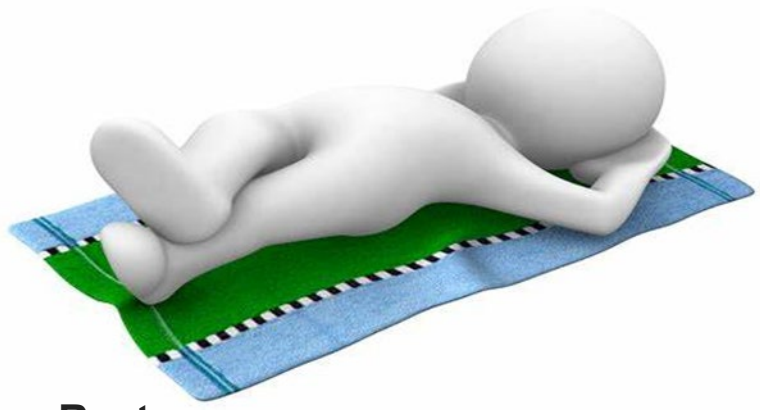
Close supervision and individual awareness is required.

Effective WBGT (°C)	Unacclimatized workers	Acclimatized workers
Below 70°F (21°C)	Low risk of heat-related illness	Low risk of heat-related illness
70 to 77°F(21 to 25°C)	Strenuous work possibly unsafe	Low risk of heat-related illness
Above 77°F (25°C)	High risk of heat-related illness with strenuous work	Strenuous work possibly unsafe

Water

Employers should provide cool water for workers to drink. Proper hydration is essential to prevent heat-related illness. For those working two hours or more, also provide access to additional fluids that contain electrolytes.

For short jobs, cool potable water is sufficient. Workers should be encouraged to drink at least one cup (8 ounces) of water every 20 minutes while working in the heat not just if they are thirsty.



Rest

When heat stress is high, employers should require workers to take breaks. The length and frequency of rest breaks should increase as heat stress rises. Breaks should last long enough for workers to recover from the heat. How long is long enough? That depends on several factors including environmental heat (WBGT) and the worker's physical activity level, as well as the individual worker's personal risk factors. The location of the breaks also matters. If workers rest in a cooler location, they will be ready to resume work more quickly. Breaks should last longer if there is no cool location for workers to rest.

Shade

Workers should be given a cool location where they can take their breaks and recover from the heat. Outdoors, this might mean a shady area, an air-conditioned vehicle, a nearby building or tent, or an area with fans and misting devices.

Indoors, workers should be allowed to rest in a cool or air-conditioned area away from heat sources such as ovens and furnaces.

For further information please review OSHA's website at www.osha.gov/heat. There are a multitude of tools at your disposal:

- Heat Illness Prevention Plan Template
- Heat Awareness Calculators
- Heat Index Charts
- ETC