

# MIOSHA Fact Sheet



## Heat Stress

### Before Heat Exposure

Employers should create a Heat Illness Prevention Plan to protect workers from developing heat-related illnesses. The plan should include planning for acclimation, breaks, water, rest, shade, monitoring, training, and planning for heat emergencies. A sample plan can be found on the MIOSHA website: [www.michigan.gov/leo/bureaus-agencies/miosha/topics/heat](http://www.michigan.gov/leo/bureaus-agencies/miosha/topics/heat).

Nearly 75% of heat fatalities occur in the first few days of working in warm or hot environments because the body needs to acclimate or build up a tolerance to heat gradually over time. When selecting workers for high heat jobs, remember that young people in generally good health, who are physically fit and have been exercising regularly in the heat, for at least the previous week or so, will be in the least discomfort and danger. People who are not in good physical condition, and who have not acclimated to the heat, as well as infants and the aged, will be in the greatest danger and discomfort during heat stress.

Instruct everyone who is to be heat exposed and those responsible for the activities, how to prevent heat-related illness as well as how to recognize the early warning signs and symptoms of heat stress. Also train workers to reduce discomfort and the dangers of early stages of heat exposure.

### During Heat Exposure

#### Do:

1. Allow new or returning workers to gradually increase workloads and take more frequent breaks as they acclimate, or build tolerance, for working in the heat.
  - For new workers, the schedule should be no more than a 20% heat exposure on day one and an increase of no more than 20% on each additional day.
  - For workers who have previous experience with the job, the acclimation regimen should be no more than a 50% heat exposure on day one, 60% on day two, 80% on day three, and 100% on day four.
2. If working or exercising **OUTDOORS**, wear loose fitting, light colored, porous clothing which allows free air circulation over the body. Wear a well-ventilated broad brimmed hat.
3. If working or exercising **INDOORS**, wear as little clothing as possible. Use fans to circulate the air quickly, open windows and doors to reduce humidity and to provide air circulation and room ventilation.
4. Work or exercise in the early morning and evening hours in whatever shade is available. Work moderately over long periods, rather than intensely for short periods.
5. Drink cool, electrolyte replacement fluids in moderate amounts frequently before, during and after the heat stress.
6. Check body feelings often, and immediately discontinue exercise and get out of the heat if you feel dizzy, faint or nauseated, unreasonably irritable or panicky, sweat so heavily that it falls in drops rapidly from your face or body, or if you become aware of a rapid, pounding heartbeat.

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7. Monitor those around you frequently for the early signs and symptoms of heat stress. Get anyone who is showing signs of heat illness to a shaded, cool, and well-ventilated area.
8. Consider Personal Protection Equipment (PPE) use. Wearing certain types of PPE can increase core body temperature and should be monitored. Additionally, personal cooling systems (e.g., water-cooled garments and air-cooled garments) can greatly reduce core body temperature.
9. During breaks, remove PPE and loosen or remove clothing. Also, while rehydrating, use cold packs, wet towels, wearable personal cooling systems, and other cooling methods to reduce body core temperature and allow for a more rapid recovery.

**Do Not:**

1. DO NOT exercise or work for more than brief periods; either in direct sunlight or outdoors between the hours of 11:00 a.m. to 4:00 p.m., unless necessary.
2. DO NOT drink just plain water in **large** volumes before or after intense or prolonged bouts of exercise, or if you have been sweating heavily.
3. DO NOT depend on salt tablets to replace the body electrolytes you have lost during sweating.
4. DO NOT persist in exercising or being exposed to heat if you develop any of the early warning signs of heat stress.
5. DO NOT drink alcoholic or high sugar beverages before, during, or immediately after heat stress.
6. DO NOT drive or operate machinery if you have any of the signs and symptoms of heat stress.

**After a Heat Exposure**

- Remove or loosen clothing and either rest in a cool, well-ventilated area, or shower with tepid or cool (not cold) water.
- Drink SMALL amounts of electrolyte replacement fluids frequently during the next hour or so.
- Seek medical help if you feel dizzy, faint or nauseated after you have cooled down, or if you develop muscle cramps within 24 hours of being heat exposed.

## Emergency Measures

When a person shows signs of heat stress, take them to a well-ventilated and shaded area. Help them to either remove or loosen their clothing and fan the body surface. DO NOT force the person to drink liquids. Most likely recovery will occur spontaneously and quickly if the skin is moist and cool.

If a person becomes unconscious or faints, SEEK EMERGENCY MEDICAL HELP IMMEDIATELY. If their skin is hot and dry, flood the skin and clothing surfaces with cool (not cold) water and fan the body surface vigorously. No one who collapses during a heat exposure should be allowed to become heat exposed again for at least 24 hours, unless approved by a physician.

These guidelines are provided as an informational service. Although there are no specific rules which address occupational heat stress in Michigan, these suggestions are strongly advised to minimize the adverse effects of heat on workers. Additional information can be obtained by contacting the Michigan Department of Labor and Economic Opportunity, Consultation Education and Training Division, (517) 284-7720.