



District Health Department #10



REPORT TO THE BOARDS OF HEALTH

Jennifer Morse, M.D., Medical Director

Mid-Michigan District Health Department, Wednesday, July 27, 2016
Central Michigan District Health Department, Wednesday, July 27, 2016
District Health Department 10, Friday, July 29, 2016

Dangers of Summer Heat: Excessive Heat Events

Conditions of extreme heat are defined as summertime temperatures that are substantially hotter and/or more humid than average for the location at that time of year. Humid or muggy conditions, which add to the discomfort of high temperatures, occur when a "dome" of high pressure traps hazy, damp air near the ground.

Extreme heat caused a reported 7,415 heat-related deaths in the United States from 1999 to 2010. In Michigan, from 1999-2014 there were 75 reported heat-related deaths. These are considered conservative estimates, as they rely on death certificate information which can be misleading. Extreme heat kills more people than hurricanes, floods, tornadoes and lightning combined, according to the National Weather Service. Several factors affect the body's ability to cool itself during extremely hot weather. When the humidity is high, sweat will not evaporate as quickly, preventing the body from releasing heat quickly. Other conditions related to risk include age, obesity, fever, dehydration, heart disease, mental illness, poor circulation, sunburn, and prescription drug and alcohol use.

Heat-related deaths are considered preventable. People should be aware of who is at greatest risk, however, even young and healthy individuals can succumb to heat if they participate in strenuous physical activities during hot weather. Air-conditioning is the number one protective factor against heat-related illness and death. If a home is not air-conditioned, people can reduce their risk for heat-related illness by spending time in public facilities that are air-conditioned.

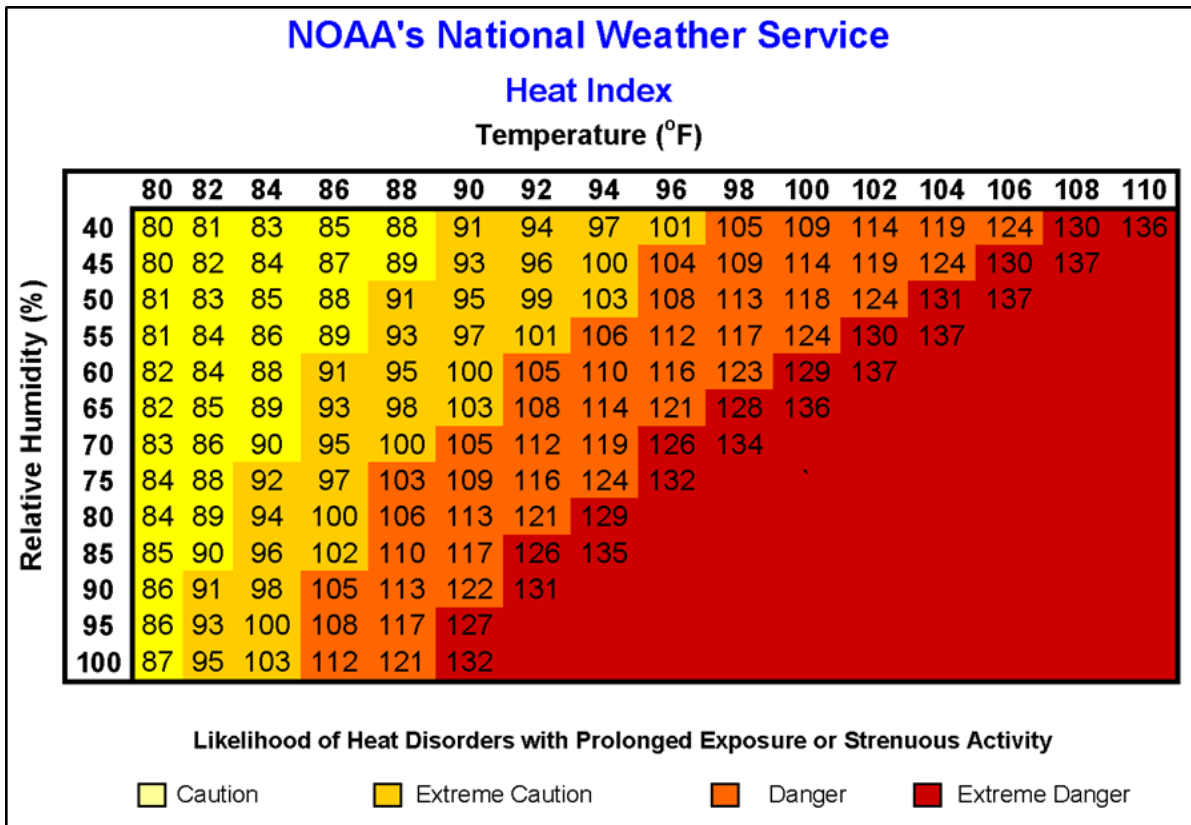
To protect your health when temperatures are extremely high, remember to keep cool and use common sense. The following tips are important:

- Drink Plenty of Fluids; Stay Cool Indoors
- Wear Appropriate Clothing and Sunscreen
- Schedule Outdoor Activities in Morning and Evening if Possible
- Pace Yourself if You Must Be Active
- Use a Buddy System When Working in the Heat
- Monitor Those at High Risk
- Do Not Leave Children or Pets in Cars
- Watch for Signs of Health Illness (listed below)

Medical conditions directly attributable to excessive heat exposure

Medical Condition	Symptoms	Responses
Heat cramps	Painful muscle cramps and spasms, usually in muscles of legs and abdomen. Heavy sweating.	Apply firm pressure on cramping muscles or gently massage to relieve spasm. Give sips of water; if nausea occurs, discontinue water intake. Consult with a clinician or physician if individual has fluid restrictions (e.g., heart failure, dialysis patients).
Heat exhaustion	Heavy sweating, weakness, cool skin, pale, and clammy. Weak pulse. Normal temperature possible. Possible muscle cramps, dizziness, fainting, nausea, and vomiting.	Move individual out of sun, lay him or her down, and loosen clothing. Apply cool, wet cloths. Fan or move individual to air-conditioned room. Give sips of water; if nausea/vomiting occurs, discontinue water intake. If vomiting continues, seek immediate medical attention. Consult with a clinician or physician if individual has fluid restrictions (e.g., heart failure, dialysis patients).
Heat stroke (sunstroke)	Altered mental state. Possible throbbing headache, confusion, nausea, and dizziness. High body temperature (106°F or higher). Rapid and strong pulse. Possible unconsciousness. Skin may be hot and dry, or individual may be sweating. Sweating likely especially if individual was previously involved in vigorous activity.	Heat stroke is a severe medical emergency. Summon emergency medical assistance or get the individual to a hospital immediately. Delay can be fatal. Move individual to a cooler, preferably air-conditioned, environment. Reduce body temperature with a water mister and fan or sponging. Use air-conditioners. Use fans if heat index temperatures are below the high 90s. Use extreme caution. Remove clothing. If temperature rises again, repeat process. Do not give fluids.

Sources: CDC, 2004a; Kunihiro and Foster, 2004; NWS, 2004.



From National Weather Service; http://www.nws.noaa.gov/os/heat/heat_index.shtml

Suggested Recommendations of the Boards of Health

1. Remember that hot weather can be deadly. Plan outdoor activities around the forecast. For more tips, see:
 - a. the CDC (<http://emergency.cdc.gov/disasters/extremeheat/index.asp>)
 - b. Michigan Prepares (http://www.michigan.gov/michiganprepares/0,4621,7-232-65025_65033---.00.html)
 - c. The National Weather Service (<http://www.nws.noaa.gov/om/heat/index.shtml>)
2. Public Officials: refer to the Excessive Health Events Guidebook (<https://www.epa.gov/heat-islands/excessive-heat-events-guidebook>) for more information to prepare your community for excessive heat events.

References

- National Weather Service; http://www.nws.noaa.gov/os/heat/heat_index.shtml
- Center for Disease Control and Prevention, <http://emergency.cdc.gov/disasters/extremeheat/index.asp>
- Environmental Protection Agency. Excessive Health Events Guidebook, <https://www.epa.gov/heat-islands/excessive-heat-events-guidebook>
- Michigan Data: Heat Related Deaths 1999-2014. Personal email from Fatema Mamou, MPH, Region 6 Epidemiologist, MDHHS.