

Heat and Heat Safety



Photo Courtesy NOAA

One of the most deadly weather phenomena to hit our region each summer is heat. Many people do not realize how deadly heat can be. In contrast to the visible, destructive, and violent nature of thunderstorms, tornadoes, and floods, heat is a silent killer. Heat kills by taxing the human body beyond its abilities.

In a normal year, about 175 Americans succumb to the demands of summer heat. In fact, in a 40-year period from 1936-1975 nearly 20,000 people were killed in the United States by the effects of heat and solar radiation. In a 1995 heat wave, more than 700 deaths in Chicago, IL were attributed to the heat. And these are the direct casualties. No one can know how many more deaths are advanced by heat-wave weather.

Cities pose special hazards when it comes to heat. The stagnant atmosphere traps pollutants in urban areas, which adds to the stresses of hot weather. In addition, concrete, asphalt and other industrial materials common in cities trap heat during the day, and keep the air temperature warmer at night.

WHAT TO LISTEN FOR:

Heat Advisory:

Heat Index values are expected to reach or exceed 105 degrees or an absolute maximum temperature of 100 degrees is expected in the next 24 hours.

Excessive Heat Watch:

Conditions are favorable for temperatures to reach excessive heat criteria in the next 12 to 48 hours.

Excessive Heat Warning:

Heat Index values are expected to reach or exceed 110 degrees, and not fall below 75 degrees, for at least a 48 hour period beginning in the next 24 hours.



Photo Courtesy of EPA

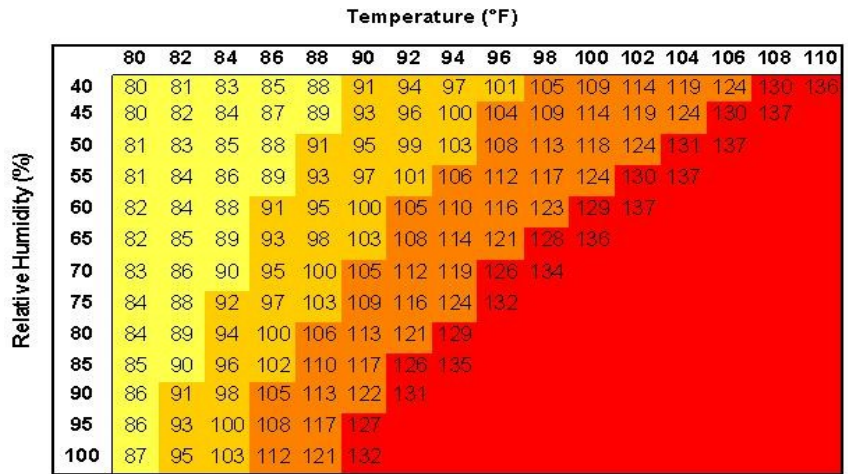


Building a Weather-Ready Nation



HEAT INDEX

The Heat Index (HI) is also sometimes referred to as the “apparent temperature” and is a measure of how hot it feels outside. The HI includes the influence of relative humidity and, in general, as the relative humidity increases, the apparent temperature also increases. To figure out the HI you can look at the Heat Index Chart (top right) and find the intersection of the air temperature and relative humidity. The shaded zones on the chart correspond to increased probabilities of developing heat related disorders (bottom right). It is important to note that the HI values were devised for shady, light wind conditions, and therefore, exposure to full sunshine can increase HI values up to 15°F.



Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

■ Caution
 ■ Extreme Caution
 ■ Danger
 ■ Extreme Danger

Heat Index	Possible heat disorders for people in high risk groups
80°-90°	Fatigue possible with prolonged exposure and/or physical activity.
90°-105°	Heatstroke, heat cramps and heat exhaustion possible with prolonged exposure and/or physical activity.
105°-130°	Heatstroke, heat cramps and heat exhaustion possible with prolonged exposure and/or physical activity.
130° or higher	Heatstroke highly likely with continued exposure.

HOW HEAT AFFECTS THE BODY



Human bodies dissipate heat by varying the rate and depth of blood circulation, and by losing water through the skin and sweat glands when blood is heated above 98.6°F. The heart begins to pump more blood and the blood is circulated closer to the skin’s surface so excess heat drains off into

the atmosphere. At the same time, water diffuses through the skin as perspiration. The skin handles about 90% of the body’s heat dissipating function. Sweating, by itself, does nothing to cool the body, unless the water is removed by evaporation but high relative humidity retards evaporation.



HEAT RELATED EMERGENCIES

Heat disorders generally have to do with a reduction or collapse of the body's ability to shed heat by circulatory changes and sweating, or a chemical imbalance caused by too much sweating. If the temperature of the body's inner core begins to rise, then heat-related illness may develop. Ranging in severity, heat disorders share one common feature: the individual has overexposed or over-exercised for his or her age and physical condition in the existing thermal environment. Those most at risk for heat disorders include the elderly, young, sick or overweight. Heat disorders and first aid include:

Heat Cramps are often an early sign that the body is having trouble with the heat. Heat cramps are muscular pains and spasms that usually occur in the legs or abdomen caused by exposure to high heat and humidity and loss of fluids and electrolytes.

First Aid: Get the person to a cooler place and have him or her rest in a comfortable position. Lightly stretch the affected muscle and replenish fluids with water. Do not give liquids with alcohol or caffeine to the individual as they can make the condition worse.

Heat Exhaustion typically involves the loss of body fluids through heavy sweating during strenuous exercise or physical labor in high heat and humidity. Symptoms include cool, moist, pale or flushed skin; heavy sweating; headache; nausea; dizziness; weakness; and exhaustion.

First Aid: Move the person to a cooler place. Remove or loosen tight clothing and apply cool, wet cloths or towels to the skin. Fan the person. If the person is conscious, give small amounts of cool water to drink. Make sure the person drinks slowly. Watch for changes in condition. If the person refuses water, vomits or begins to lose consciousness, call 911.

Heat Stroke (also called **sunstroke**) is a life-threatening condition in which a person's temperature control system stops working and the body is unable to cool itself. Signs of heat stroke include hot, red skin, which may be dry or moist; changes in consciousness; vomiting; and high body temperature.

First Aid: Heat stroke is life-threatening. Call 911 immediately. Carefully move the person to a cooler place. Quickly cool the person's body by giving care as you would for heat exhaustion. If needed, continue rapid cooling by applying ice or cold packs wrapped in a cloth to the wrists, ankles, groin, neck or armpits.



EXTREME HEAT SAFETY

What You Can Do!

HOW TO PREPARE:

- ☼ Listen to local weather forecast and stay aware of upcoming temperature changes.
- ☼ Know those in your neighborhood who are elderly, young, sick or overweight. They are more likely to become victims of excessive heat and may need help.
- ☼ If you do not have air conditioning, choose places you could go to for relief from the heat during the warmest part of the day (schools, libraries, theaters, malls etc).
- ☼ Ensure that your animals' needs for water and shade are met.

WHAT TO DO DURING A HEAT WAVE:

- ☼ Listen to a NOAA Weather Radio or news outlets for critical updates from the National Weather Service.
- ☼ Never leave children or pets alone in enclosed vehicles! **“Beat the Heat, Check the Back Seat!”**
- ☼ Stay hydrated by drinking plenty of fluids even if you do not feel thirsty. Avoid drinks with caffeine or alcohol.
- ☼ Eat small meals and eat more often. Some foods can increase metabolic heat production and increase water loss.
- ☼ Avoid extreme temperature changes.
- ☼ Wear loose-fitting, lightweight, light-colored clothing. Light-colored clothing reflects sunlight and can help your body maintain normal temperatures.
- ☼ Slow down, stay in the coolest place available (not necessarily indoors) and avoid strenuous exercise during the hottest part of the day.
- ☼ Strenuous and outdoor activities should be reduced, eliminated, or rescheduled to the coolest time of the day.
- ☼ Take frequent breaks if you must work outdoors.
- ☼ Check on family, friends and neighbors who do not have air conditions, who spend much of their time alone or who are more likely to be affected by heat.
- ☼ Check on your animals frequently to ensure they are not suffering from the heat.



Photo Courtesy of FEMA



Building a Weather-Ready Nation