Who is Most Vulnerable During a Heat Wave?

The elderly population segment is the most vulnerable to the dangers of heat. Of the 522 deaths that occurred in Chicago during the July 12-16, 1995 heat wave, 371 (73 percent) were age 65 or older. The elderly suffer due to the diminished ability to perspire. Since the function of perspiration is to provide evaporation, which in turn provides cooling, the elderly have a reduced capacity to release heat from the body.

In addition to the elderly, infants, young children, and people with chronic health problems (especially pre-existing heart disease) or disabilities are more vulnerable to the effects of heat waves. People who are not acclimated to hot weather, overexert themselves, are obese, or use alcohol or drugs (including drugs such as antipsychotics, tranquilizers, antidepressants, certain types of sleeping pills, and drugs for Parkinson's disease) are at great risk. (Source- Centers for Disease Control and Prevention-Morbidity and Mortality Weekly Report)

Measuring the Combined Effects of Heat and Humidity

The National Weather Service uses the Heat Index (HI) to compute the "apparent temperature," which is a measure of how hot it feels to people at a certain combination of temperature and humidity. The heat index values used in forecasts, advisories, and warnings assume an average size adult, with light clothing, in the shade, with a 5 mile per hour wind. Being in full sun, or in an area with little air movement, can increase the apparent temperature, and thus increase the risk for adverse effects from the heat and humidity. Winds greater than 5 miles per hour usually enhance evaporative cooling and decrease the apparent temperature and the health threat from the heat. As noted, the impacts of heat are cumulative over time. The greatest number of heat-induced illnesses and fatalities usually peak two days after the maximum heat index values occurred.

Heat Index

The Heat Index (Apparent Temperature) can be found by taking the temperature (number on the left) and relative humidity value (number at the top) and matching them on this table. For example, a temperature of 90 degrees Fahrenheit and a relative humidity of 45 percent gives you a heat index of 93 degrees.