



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.

		Relative Humidity (%)													
		40	45	50	55	60	65	70	75	80	85	90	95	100	
Air Temperature	°F	110	136												
	108	130	137												
	106	124	130	137											
	104	119	124	131	137										
	102	114	119	124	130	137									
	100	109	114	118	124	129	136								
	98	105	109	113	117	123	128	134							
	96	101	104	108	112	116	121	126	132						
	94	97	100	103	106	110	114	119	124	129	135				
	92	94	96	99	101	105	108	112	116	121	126	131			
	90	91	93	95	97	100	103	106	109	113	117	122	127	132	
	88	88	89	91	93	95	98	100	103	106	110	113	117	121	
	86	85	87	88	89	91	93	95	97	100	102	105	108	112	
	84	83	84	85	86	88	89	90	92	94	96	98	100	103	
	82	81	82	83	84	84	85	86	88	89	90	91	93	95	
	80	80	80	81	81	82	82	83	84	84	85	86	86	87	

With Prolonged Exposure and/or Physical Activity

Extreme Danger
Heat stroke or sunstroke highly likely
Danger
Sunstroke, muscle cramps, and/or heat exhaustion likely
Extreme Caution
Sunstroke, muscle cramps, and/or heat exhaustion possible
Caution
Fatigue possible