

HEAT STRESS

The effects of heat stress range from simple discomfort to dehydration, heat exhaustion and life-threatening heat stroke. Too much heat can cause fatigue, hurt job performance and increase the chance of injury. Heat stress also makes it difficult to concentrate on the job, which can be hazardous.

Dehydration

Symptoms of dehydration may include headaches, decreased blood pressure and dizziness/fainting. Typically, thirst does not occur in the early stages of dehydration. Therefore, in hot, humid weather, it is important to consume water, even if you're not thirsty.

- To counter dehydration, it is necessary to replenish water and electrolytes. Otherwise, cramps and more serious conditions can develop.

Heat Cramps

Heat cramps are muscle spasms, usually in the hamstring or calf muscles but also in the arms and abdomen. Often, they occur at break time when work stops. These contractions are forceful and painful.

- They usually improve with rest, rehydration and a cool environment.

Heat Exhaustion

Heat exhaustion is a result of excessive heat and dehydration. The signs are paleness, dizziness, nausea, vomiting, fainting and increased body temperature (101-102 degrees F).

- Rest and water will help in mild heat exhaustion. Severe exhaustion may require intravenous fluids, especially if vomiting keeps victims from drinking enough to rehydrate themselves.

Heat Stroke

A person suffering from heat stroke will stop sweating, and body temperature will reach 102 degrees or more. The skin will be hot and dry. Confusion and loss of consciousness may occur.

- Heat stroke is life threatening. Urgent treatment by a doctor is needed. While waiting for medical help to arrive, cool the patient as quickly as possible. Soaking the person's clothes with cold water and increasing air movement by fanning can do this. If the person is conscious, give sips of cool water (not ice cold) to drink.

Protect Yourself

- Replenish fluids throughout the day, at least eight ounces of water per hour.
- Take rest breaks in a cool, shady spot and use fans when possible.
- Wear light-colored clothing made of cotton.

- A new job in a warm area requires time to adjust. Be extra careful the first couple of weeks.
- Working with heavy, personal protective equipment (PPE) requires more frequent rest breaks.

HOW TO COOL SOMEONE OFF

Even when a person drinks plenty of fluids, the heat can still overcome a person. A victim of heat illness needs help right away. The important thing is to cool him or her immediately. To cool the victim, you can use several approaches depending upon the circumstances:

- Move the person into the shade, into a cool room, or to an air-conditioned building or car.
- Spray the victim with a hose, or pour a bucket of water over him or her (not in the face). Tell the person what you're going to do, and do not use these measures if the victim is confused.
- Wrap the victim in wet towels or sheets and then turn on a fan.
- Place cold compresses on the victim's neck, groin, and armpits.
- If medical help is not immediately available and you suspect heatstroke, immerse the victim in cold water (bath, lake, stream), but only if you can carefully monitor his level of alertness, breathing, and circulation.
- Once the person's temperature is down to 100 degrees F, you can ease up on your cooling efforts, but keep checking the victim's temperature every half-hour for the next 3 to 4 hours. There is a possibility it may rise again

Heat Index (Apparent Temperature) Chart

The **Heat Index** (HI) is the temperature the body feels when heat and humidity are combined. The chart below shows the HI that corresponds to the actual air temperature and relative humidity. (NOTE: This chart is based upon shady, light wind conditions. **Exposure to direct sunlight can increase the HI by up to 15°F.**) (Due to the nature of the heat index calculation, the values in the tables below have an error of +/- 1.3F.)

Heat Index	General Effect of Heat Index on People in Higher Risk Groups
80 to 89° - Caution	Fatigue possible with prolonged exposure and/or physical activity.
90 to 104° - Extreme Caution	Sunstroke, heat cramps and heat exhaustion possible with prolonged exposure and/or physical activity.
105 to 129° - Danger	Sunstroke, heat cramps or heat exhaustion likely, and heatstroke possible with prolonged exposure and/or physical activity.
130° or higher - Extreme Dangler	Heat/sunstroke highly likely with continued exposure.

		Relative Humidity (in percent)																					
		0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Air Temp (in F)	140	125																					
	135	120	128																				
	130	117	122	131																			
	125	111	116	123	131	141																	
	120	107	111	116	123	130	139	148															
	115	103	107	111	115	120	127	135	143	151													
	110	99	102	105	108	112	117	123	130	137	143	150											
	105	95	97	100	102	105	109	113	118	123	129	135	142	149									
	100	91	93	95	97	99	101	104	107	110	115	120	126	132	138	144							
	95	87	88	90	91	93	94	96	98	101	104	107	110	114	119	124	130	136					
	90	83	84	85	86	87	88	90	91	93	95	96	98	100	102	106	109	113	117	122			
	85	78	79	80	81	82	83	84	85	86	87	88	89	90	91	93	95	97	99	102	105	108	
	80	73	74	75	76	77	77	78	79	79	80	81	81	82	83	85	86	86	87	88	89	91	
75	69	69	70	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	80		
70	64	64	65	65	66	66	67	67	68	68	69	69	70	70	70	70	71	71	71	71	71	72	

		Dew Point (in F)																									
		60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
Air Temp (in F)	104	110	110	110	110	110	110	111	112	113	114	115	116	117	118	119	121	122	124	125	127	128	130	132	133	136	137
	102	108	108	108	108	108	108	109	110	110	111	112	113	114	116	117	118	119	121	122	124	126	127	129	131	133	136
	100	106	106	106	106	106	106	106	107	108	109	110	111	112	113	114	115	117	118	119	121	123	124	126	128	129	132
	98	103	103	103	103	103	103	104	105	105	106	107	108	109	110	111	113	114	115	117	118	120	121	123	125	127	129
	96	101	101	101	101	101	101	101	102	103	104	105	106	107	108	109	110	111	112	114	115	117	118	120	122	124	127
	94	98	98	98	98	98	98	99	100	100	101	102	103	104	105	106	107	108	109	111	112	114	115	117	119	122	124
	92	96	96	96	96	96	96	97	97	98	99	99	100	101	102	103	104	105	106	108	109	110	112	114	116	119	121
	90	94	94	94	94	94	94	94	95	95	96	97	98	98	99	100	101	102	103	105	106	107	109	110	113	116	117
	88	88	88	88	89	89	90	90	90	91	92	93	94	95	96	97	98	99	100	101	103	104	106	108	110	112	114
	86	86	86	87	87	87	88	88	89	89	90	91	91	92	93	94	95	96	97	98	100	101	102	104	106	108	110
84	84	84	85	85	85	86	86	87	87	88	88	89	90	90	91	92	93	94	95	96	97	98	100	101	103	-	
82	82	83	83	83	83	84	84	85	85	86	86	87	87	88	88	89	89	90	91	92	93	94	95	-	-	-	
80	80	81	81	81	82	82	82	82	83	83	83	83	84	84	85	85	85	86	86	87	87	-	-	-	-	-	