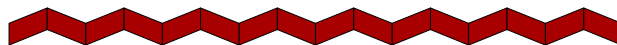




PREVENTION OF HEAT-RELATED ILLNESS



Safety & Security Fact Sheet

Physical Education teachers, coaches, and playground monitors should be aware of the conditions that may cause heat related illnesses, learn to recognize their signs and symptoms, and be prepared to take preventive action.

The combination of high air temperature, high humidity, and physical exertion can be deadly to anyone at work or play. The higher the humidity, the more dangerous the air temperature becomes as the humidity reduces the cooling effect of perspiration evaporating from the skin. Strenuous exercise compounds this effect as the loss of body fluids creates an imbalance of electrolytes, adversely affecting blood pressure and muscle activity.

THERE ARE FOUR TYPES OF HEAT RELATED ILLNESSES:

- ✓ Heat Syncope: Fainting or near fainting following dizziness, usually while running or a sudden change in position. Caused by a drop in blood pressure as the brain is deprived of oxygenated blood.
- ✓ Heat Cramps: Tightening or spasm of active muscles, without loss of consciousness. Caused by an electrolyte imbalance.
- ✓ Heat Exhaustion: Dizziness, fatigue, nausea, and vomiting may be accompanied by irrational behavior or belligerence and some muscle cramping. Loss of consciousness may occur.
- ✓ Heat Stroke (Sun Stroke): Acute medical emergency. Heat Stroke (Sun Stroke): Acute medical emergency. Central Nervous System (CNS) dysfunction characterized by disorientation, irrational behavior, decreased mental acuity, irritability, emotional instability, confusion, hysteria or apathy with body core temperature 104°F or greater. Symptoms may rapidly progress without immediate treatment to convulsions, coma, and possible death.

TREATMENT:

For all heat related illnesses, cease activity, move victim to a cooler, shaded area, loosen or remove clothing, cool body by applying cold wet towels and/or ice packs, monitor closely.

Heat syncope, heat cramps and heat exhaustion should resolve immediately with proper treatment. Activate the emergency medical system (EMS), dial 911, if symptoms do not resolve quickly.

For Heat stroke, identified by severe CNS dysfunction, and slow or no resolution of symptoms with treatment, activation of the EMS, dial 911, is critical.

PREVENTION:

- ✓ Follow guidelines for restricting activities based on the heat stress index. **See chart on reverse side.** Temperature and relative humidity can be determined through the use of a sling psychrometer or can be obtained from weather broadcasts.
- ✓ Athletes should exercise preconditioning, heat acclimatization, and water replacement regimens.
- ✓ Wear lightweight, light colored, loose clothing. Limit or discontinue use of protective equipment (helmets and shoulder pads), and modify practice to maintain safe conditions.
- ✓ Provide cold water in readily accessible, sanitary dispensers. Service in disposable paper cups is preferred.
- ✓ Learn to recognize those children who may be predisposed to heat illness-victims of chronic disease, obesity, previous history, etc. and watch them closely.

Hazy, hot, and humid weather creates another hazard as ground-level ozone builds up to unhealthful levels. The Metropolitan Washington Council of Governments issues a Code Red Alert on these days, warning that the unhealthful air quality can have an adverse effect on the general population, especially with prolonged outdoor activity, and is harmful to the very young, the elderly, and anyone with respiratory disease. Additional information on the Ozone Alert and the Air Quality Index is available at: www.mwcoq.org/dep/airqual.html and at www.deq.state.va.us/ozone/.

For more information call the Safety Section at 571-423-2010.



HUMITURE OR APPARENT TEMPERATURE CHART (After R.G. Steadman, 1979)

Relative Humidity (%) (Air Temperature – Degrees Fahrenheit)

	10	20	30	40	50	60	70	80	90	100	
130	131										
125	123	141									
120	116	130	148								
115	111	120	135	151							
110	105	112	123	137	150						
105	100	105	113	123	135	149					I
104	98	104	110	120	132	143					
102	97	101	108	117	125	139					
100	95	99	105	110	120	132	144				
98	93	97	101	106	110	125	132				
96	91	95	98	104	108	120	128				
94	89	93	95	100	105	111	122	128			
92	87	90	92	96	100	106	115	122			
90	85	88	90	92	96	100	106	114	122	130	II
88	82	86	87	89	93	95	100	106	115	125	
86	80	84	85	87	90	92	96	100	109	111	
84	78	81	83	85	86	89	91	95	99	105	
82	77	79	80	81	84	86	89	91	95	96	III
80	75	77	78	79	81	83	85	86	89	91	
78	72	75	77	78	79	80	81	83	85	86	IV
76	70	72	75	76	77	77	77	78	79	80	
74	68	70	73	74	75	75	75	76	77	79	
70	65	66	67	68	69	70	70	71	71	72	

To use this chart, read current temperature at the left and current humidity at top, then follow down the chart to find the heat index. For example, with a temperature of 96 degrees Fahrenheit and a relative humidity of 60%, the intersection of the two values on the chart will give a Heat Index of 120. An interactive heat index calculator is available at <http://weatherpost.com/longterm/calculator.htm>.

Danger Category	Humiture		
IV	80-90	=	Caution: Fatigue possible with prolonged exposure and physical activity. Athletics: Rest 15 minutes for every 45 minutes of work. Limit protective equipment; modify practice to maintain safe conditions. Consume minimum of 24 oz. per hour, fluid break every 15 minutes.
III	90-100	=	Extreme Caution: Sunstroke, heat cramps, or heat exhaustion possible with prolonged exposure and physical activity. Athletics: Rest 15 minutes for every 45 minutes of work. Light clothing, no protective equipment (helmets/shoulder pads), modify practice to maintain safe conditions. Consume minimum of 32 oz. per hour, fluid break every 15 minutes.
II	100-130	=	Danger: Sunstroke, heat cramps, or heat exhaustion likely. Heatstroke possible with prolonged exposure and physical activity. Athletics: No outside activity.
I	Above 130	=	Extreme Danger: Heatstroke or sunstroke imminent.