

## Extreme Weather Guidelines

The extreme weather guidelines exist to ensure the safety and well-being of all students and faculty/staff. These guidelines provide guidance to administrators as they make decisions regarding outside activities.

### Extreme Heat

Conditions of extreme heat are defined as summertime temperatures that are substantially hotter and/or more humid than average for location at that time of year. Humid or muggy conditions, which add to the discomfort of high temperatures, occur when a "dome" of high atmospheric pressure traps hazy, damp air near the ground. Extremely dry and hot conditions can provoke dust storms and low visibility. Droughts occur when a long period passes without substantial rainfall. A heat wave combined with a drought is a very dangerous situation.

*Below is a chart that illustrates how the heat index is calculated (taken from the NOAA information).*

#### AIR TEMPERATURE (degrees in Fahrenheit)

		70	75	80	85	90	95	100	105	110	115
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#### APPARENT TEMPERATURE/HEAT INDEX

R	0%	64	69	73	78	83	87	91	95	100	103
E											
L	10%	65	70	75	80	85	90	95	100	105	111
A											
T	20%	66	72	77	82	87	93	99	105	112	120
I											
V	30%	67	73	78	84	90	96	104	113	123	135
E											
	40%	68	74	79	86	93	101	110	123	137	151
H											
U	50%	69	75	81	88	96	107	120	135	150	
M											
I	60%	70	76	82	90	100	114	132	149		
D											
T	70%	70	77	85	93	106	124	144			
Y											
	80%	71	78	86	97	113	136				
	90%	71	79	88	102	122					
	100%	72	80	91	108						

The heat index calculator website is listed below.

<http://www.hpc.ncep.noaa.gov/html/heatindex.shtml>

If the Heat Index Is:	Risk Category
130 ° F	"Extreme Danger"
105-129 ° F	"Danger"
90-105 ° F	"Extreme Caution"
80-90 ° F	"Caution"

**Extreme Danger:** Heat stroke or sunstroke is likely.

**Danger:** Sunstroke, muscle cramps, and/or heat exhaustion likely. Heatstroke is possible with prolonged exposure and/or physical activity.

**Extreme Caution:** Sunstroke, muscle cramps, and/or heat exhaustion possible with prolonged exposure and/or physical activity.

**Caution:** Fatigue possible with prolonged exposure and/or physical activity.

## **Heat Stroke**

Heat stroke occurs when the body is unable to regulate its temperature. The body's temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down. Body temperature may rise to 106°F or higher within 10 to 15 minutes. Heat stroke can cause death or permanent disability if emergency treatment is not provided.

### **Recognizing Heat Stroke**

Warning signs of heat stroke vary but may include the following:

- An extremely high body temperature (above 103°F, orally)
- Red, hot, and dry skin (no sweating)
- Rapid, strong pulse
- Throbbing headache
- Dizziness
- Nausea
- Confusion
- Unconsciousness

### **What to Do**

If you see any of these signs, you may be dealing with a life-threatening emergency. Have someone call for immediate medical assistance while you begin cooling the victim. Do the following:

- Get the victim to a shady area.
- Cool the victim rapidly using whatever methods you can. For example, immerse the victim in a tub of cool water; place the person in a cool shower; spray the victim with cool water from a garden hose; sponge the person with cool water; or if the humidity is low, wrap the victim in a cool, wet sheet and fan him or her vigorously.
- Monitor body temperature, and continue cooling efforts until the body temperature drops to 101-102°F.
- If emergency medical personnel are delayed, call the hospital emergency room for further instructions.
- Do not give the victim fluids to drink.
- Get medical assistance as soon as possible.

Sometimes a victim's muscles will begin to twitch uncontrollably as a result of heat stroke. If this happens, keep the victim from injuring himself, but do not place any object in the mouth and do not give fluids. If there is vomiting, make sure the airway remains open by turning the victim on his or her side.



## **Heat Exhaustion**

Heat exhaustion is a milder form of heat-related illness that can develop after several days of exposure to high temperatures and inadequate or unbalanced replacement of fluids. It is the body's response to an excessive loss of the water and salt contained in sweat. Those most prone to heat exhaustion are elderly people, people with high blood pressure, and people working or exercising in a hot environment.

## **Recognizing Heat Exhaustion**

Warning signs of heat exhaustion include the following:

- Heavy sweating
- Paleness
- Muscle cramps
- Tiredness
- Weakness
- Dizziness
- Headache
- Nausea or vomiting
- Fainting

The skin may be cool and moist. The victim's pulse rate will be fast and weak, and breathing will be fast and shallow. If heat exhaustion is untreated, it may progress to heat stroke. Seek medical attention immediately if any of the following occurs:

- Symptoms are severe
- The victim has heart problems or high blood pressure

Otherwise, help the victim to cool off, and seek medical attention if symptoms worsen or last longer than 1 hour.

## **What to Do**

Cooling measures that may be effective include the following:

- Cool, nonalcoholic beverages
- Rest
- Cool shower, bath, or sponge bath
- An air-conditioned environment
- Lightweight clothing

## **Heat Cramps**

Heat cramps usually affect people who sweat a lot during strenuous activity. This sweating depletes the body's salt and moisture. The low salt level in the muscles may be the cause of heat cramps. Heat cramps may also be a symptom of heat exhaustion.

### **Recognizing Heat Cramps**

Heat cramps are muscle pains or spasms—usually in the abdomen, arms, or legs—that may occur in association with strenuous activity. If you have heart problems or are on a low-sodium diet, get medical attention for heat cramps.

### **What to Do**

If medical attention is not necessary, take these steps:

- Stop all activity, and sit quietly in a cool place.
- Drink clear juice or a sports beverage.
- Do not return to strenuous activity for a few hours after the cramps subside, because further exertion may lead to heat exhaustion or heat stroke.
- Seek medical attention for heat cramps if they do not subside in 1 hour.

## Extreme Cold

When exposed to cold temperatures, your body begins to lose heat faster than it can be produced. Prolonged exposure to cold will eventually use up your body's stored energy. The result is hypothermia, or abnormally low body temperature. Body temperature that is too low affects the brain, making the victim unable to think clearly or move well. This makes hypothermia particularly dangerous because a person may not know it is happening and won't be able to do anything about it.

Hypothermia is most likely at very cold temperatures, but it can occur even at cool temperatures (above 40°F) if a person becomes chilled from rain, sweat, or submersion in cold water.

Victims of hypothermia are often (1) elderly people with inadequate food, clothing, or heating; (2) babies sleeping in cold bedrooms; (3) people who remain outdoors for long periods—the homeless, hikers, hunters, etc.; and (4) people who drink alcohol or use illicit drugs.

## New Wind Chill Chart

Temperature (F)

Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-4
																		5
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-6
																		3
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-7
																		2
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-7
																		7
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-8
																		1
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-8
																		4
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-8
																		7
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-8
																		9
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-9
																		1
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-9
																		3
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-9
																		5
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-9
																		7
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-9
																		8

*Frostbite occurs in 15 minutes or less*

**The wind chill calculator website is listed below.**

[http://www.srh.noaa.gov/epz/?n=wxcalc\\_windchill](http://www.srh.noaa.gov/epz/?n=wxcalc_windchill)

## **Recognizing Hypothermia**

Warnings signs of hypothermia:

### **Adults:**

- shivering, exhaustion
- confusion, fumbling hands
- memory loss, slurred speech
- drowsiness

### **Infants:**

- bright red, cold skin
- very low energy

## **Frostbite**

Frostbite is an injury to the body that is caused by freezing. Frostbite causes a loss of feeling and color in affected areas. It most often affects the nose, ears, cheeks, chin, fingers, or toes. Frostbite can permanently damage the body, and severe cases can lead to amputation. The risk of frostbite is increased in people with reduced blood circulation and among people who are not dressed properly for extremely cold temperatures.

## **Recognizing Frostbite**

At the first signs of redness or pain in any skin area, get out of the cold or protect any exposed skin—frostbite may be beginning. Any of the following signs may indicate frostbite:

- a white or grayish-yellow skin area
- skin that feels unusually firm or waxy
- numbness

A victim is often unaware of frostbite until someone else points it out because the frozen tissues are numb.

### **Sources:**

Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA 30333, USA

NOAA/National Weather Service 5200 Auth Road Camp Springs, MD 20746