Managing Heat and Humidity

Required Use: These guidelines will be used by managers or their designees at all IHSA state series events when the air temperature is at least 80 degrees. State series tournament managers will make the decisions to suspend and resume activity in accordance with these guidelines using those devices or systems usually used at the state series venue/site.

1. Thirty minutes prior to the start of an activity, and again 60 minutes after the start of the activity, temperature and humidity readings will be taken at the site of the activity. Using a device that can automatically calculate heat index, like a digital sling psychrometer, is recommended. Record the readings in writing and maintain the information in files of the tournament manager and/or host school administration. Tournament managers may designate someone other than themselves to take these readings.
2. Factor the temperature and humidity in the Heat Index Calculator and Chart to determine the Heat Index. If a digital sling psychrometer is being used, the calculation is automatic.
3. If the Heat Index is:
    a. **Below 95 degrees**
        i. All sports
            1. Provide ample amounts of water. This means that water should always be available and athletes should be able to take in as much water as they desire.
            2. Optional water breaks every 30 minutes for 10 minutes in duration. Coordinate breaks with assigned contest officials.
            3. Ice-down towels for cooling.
            4. Watch/monitor athletes carefully for necessary action

    b. **Between 95-99 degrees**
        i. All sports
            1. Provide ample amounts of water. This means that water should always be available and athletes should be able to take in as much water as they desire.
            2. Recommended water breaks (example: every 30 or 40 minutes for 5-10 minutes in duration) Coordinate breaks with assigned contest officials.
            3. Ice-down towels for cooling.
            4. Watch/monitor athletes carefully for necessary action
        ii. Contact sports and activities with additional protective equipment (in addition to the above measures)
            1. Helmets and other possible equipment removed while not involved in contact.
        iii. Reduce time of outside activity. Consider postponing activity to later in the day.
        iv. Recheck air temperature and humidity every 30 minutes to monitor for increased Heat Index.

    c. **Between 100 (more than 99 degrees)-104 degrees**
        i. All sports
            1. Provide ample amounts of water. This means that water should always be available and athletes should be able to take in as much water as they desire.

2. Mandatory water breaks every 30 minutes for 10 minutes in duration. Coordinate breaks with assigned contest officials.
3. Ice-down towels for cooling.
4. Watch/monitor athletes carefully for necessary action
5. Alter uniform by removing items if possible.
6. Allow for changes to dry t-shirts and shorts.
7. Reduce time of outside activity as well as indoor activity if air conditioning is unavailable.
8. Consider postponing activity to later in the day or another day (with approval from IHSA Administration)

ii. Contact sports and activities with additional protective equipment (in addition to the above measures)
    1. Helmets and other possible equipment removed if not involved in contact or necessary for safety. If necessary for safety, suspend activity.

iii. Recheck air temperature and humidity every 30 minutes to monitor for increased Heat Index.

d. Above 104 degrees

i. All sports
    1. Stop all outside activity, and stop all inside activity if air conditioning is unavailable.

NOTE: When the air temperature is below 80 degrees, there is no combination of heat and humidity that will result in need to curtail activity or implement this policy. While most attention will be given to outdoor sports in the fall and spring, indoor venues/facilities (gymnasiums, wrestling rooms, and swimming/diving facilities) that are not air conditioned should not be neglected for the purposes of this policy. Additionally, sometimes conditions will vary for different aspects of the same competition. For example, one part of a cross-country course may be hotter or more humid than other parts. The best course of action for managers is to take the heat index at the place of the most severe conditions.

Heat Index Chart

Heat Index in °F (°C)

	Relative Humidity (%)												
Temp in °F/°C	40	45	50	55	60	65	70	75	80	85	90	95	100
110 (47)	136 (58)												
108 (43)	130 (54)	137 (58)											
106 (41)	124 (51)	130 (54)	137 (58)										
104 (40)	119 (48)	124 (51)	131 (55)	137 (58)									
102 (39)	114 (46)	119 (48)	124 (51)	130 (54)	137 (58)								
100 (38)	109 (43)	114 (46)	118 (48)	124 (51)	129 (54)	136 (58)							
98 (37)	105 (41)	109 (43)	113 (45)	117 (47)	123 (51)	128 (53)	134 (57)						
96 (36)	101 (38)	104 (40)	108 (42)	112 (44)	116 (47)	121 (49)	126 (52)	132 (56)					
94 (34)	97 (36)	100 (38)	103 (39)	106 (41)	110 (43)	114 (46)	119 (48)	124 (51)	129 (54)	135 (57)			
92 (33)	94 (34)	96 (36)	99 (37)	101 (38)	105 (41)	108 (42)	112 (44)	116 (47)	121 (49)	126 (52)	131 (55)		
90 (32)	91 (33)	93 (34)	95 (35)	97 (36)	100 (38)	103 (39)	106 (41)	109 (43)	113 (45)	117 (47)	122 (50)	127 (53)	132 (56)
88 (31)	88 (31)	89 (32)	91 (33)	93 (34)	95 (35)	98 (37)	100 (38)	103 (39)	106 (41)	110 (43)	113 (45)	117 (47)	121 (49)
86 (30)	85 (29)	87 (31)	88 (31)	89 (32)	91 (33)	93 (34)	95 (35)	97 (36)	100 (38)	102 (39)	105 (41)	108 (42)	112 (44)
84 (29)	83 (28)	84 (29)	85 (29)	86 (30)	88 (31)	89 (32)	90 (32)	92 (33)	94 (34)	96 (36)	98 (37)	100 (38)	103 (39)
82 (28)	81 (27)	82 (28)	83 (28)	84 (29)	84 (29)	85 (29)	86 (30)	88 (31)	89 (32)	90 (32)	91 (33)	93 (34)	95 (35)
80 (27)	80 (27)	80 (27)	81 (27)	81 (27)	82 (28)	82 (28)	83 (28)	84 (29)	84 (29)	85 (29)	86 (30)	86 (30)	87 (31)

Category	Heat Index	Possible heat disorders
Extreme Danger	130° F or higher (54° C or higher)	Heat stroke or sunstroke likely
Danger	105°-129° F (41°-54° C)	"Sunstroke, muscle cramps, and/or heat exhaustion likely. Heatstroke possible with prolonged" exposure and/or physical activity.
Extreme Caution	90°-105° F (32°-41° C)	"Sunstroke, muscle cramps, and/or heat exhaustion possible with prolonged exposure and/or" physical activity.
Caution	80°-90° F (27°-32° C)	Fatigue possible with prolonged exposure and/or physical activity.

• reproduced from NWS, Birmingham, AL

Cooling Methods Due to Heat Related Illness

Exertional heat stroke (EHS) is relatively uncommon among exercise associated medical conditions, but is a frequent cause of exercise related death. The majority of evidence shows that early institution of body cooling is the most effective method of decreasing mortality in EHS. The following contains recommendations regarding the methods of body cooling, including tubs, ice bags, iced towels (towels with water that have been frozen) water, fans, and shade. The recommendations are classified as essential (foundational to the implementation of treatment, should have resources and personnel directed towards implementation), and desirable (important in maximal implementation, should have resources and personnel directed towards implementation as budget and resources allow). The recommendations are only guidelines, are not intended as a standard of care, and should not be considered as such. These guidelines should only be considered in the care of athletes who can be expected to be at risk of EHS due to the sport or the environmental situation of the activity. Sports especially at risk include football with and without equipment, soccer, and long distance track. Other sports and activities, such as cycling, golf, baseball, tennis, track and field, and band, may also be at risk due to long duration exposure to extreme environmental conditions.

It is essential that member schools and school administrators/officials:

- Establish a written plan for emergency treatment of EHS, and conduct drills in the implementation of the plan.
- Know how to assess environmental conditions and determine when extreme conditions exist.
- Identify a specific spot at the athletic facility that has shade.
- Have immediate access to ice and bags to contain ice.
- Have access to water, and provide water breaks as outlined in the IHSA Managing Heat and Humidity Policy.
- Know the most effective sites for application of ice to the body.

It his highly desirable that member schools and school administrators/officials:

- Obtain and use, when environmental conditions are determined to be extreme, a tub or pool, filled with water and ice before activity begins, to be used in body immersion for maximal cooling, and have personnel trained in this technique.

It is desirable that member schools and school administrators/officials:

- Have a certified athletic trainer (ATC) on staff, as budget and resources allow, to develop and implement these guidelines.
- Have immediate access to water.
- Provide shade breaks.
- Provide fans when environmental conditions are determined to be extreme.
- Have close access to an air conditioned room.
- Have access to and use iced towels that can be rotated to appropriate areas of the body, including the axilla, groin, and back of the neck.

Resources

1. *Procedure for Avoiding Heat Injury/Illness through Analysis of Heat Index and Restructuring of Activities and Recommendations for Cooling Methods Due to Heat Related Illness*. Kentucky Medical Association/Kentucky High School Athletic Association. 2010.
2. Binkley HM et al. *NATA Position statement: Exertional heat illness*. J Ath Training 2002; 37: 329-343.
3. Casa DJ et al. *Survival strategy: Acute treatment of exertional heat stroke*. J Strength Conditioning Res 2006; 20: 462.
4. Armstrong LE et al. *ACSM position stand: Exertional heat illness during training and competition*. Med Sci Sports Exerc 2007; 41: 556-572.
5. *Model Policy for Managing Heat & Humidity*. Michigan High School Athletic Association. 2013.