

Mid-Suburban League Weather Policy

Excessive Heat

These guidelines represent minimum standards that Mid-Suburban League member schools should follow for athletic competitions and practices when the Wet Bulb Globe Temperature (WBGT) is above 80 degrees Fahrenheit. The IHSA officials and administration, in conjunction with the head athletic trainer, will make the decision to suspend and resume activity for practices and non-state series contests. State series tournament managers will make the decisions to suspend and resume activity in accordance with the IHSA guidelines using those devices or systems usually used at the state series venue/site.

When the weather forecast indicates elevated temperatures, the athletic trainer will take WBGT readings thirty minutes prior to the start of a game or thirty minutes prior to the start of the day's activities. Once the initial reading is taken, WBGT readings will be taken every 60 minutes until it has been determined the WBGT readings are below the yellow zone.

Minimum restrictions for athletic activity will be established thirty minutes prior to the start of activity. Readings will be recorded in writing and the records will be maintained within the athletics department. Use Table 1 (see below) with an on-site WBGT reading for appropriate exercise modifications during all indoor and outdoor athletic activities.

Table 1

A. ≤79.9 degrees F (GREEN ZONE)

- i. All sports
 - 1. 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. Watch/monitor athletes carefully for necessary action.

B. 80.0-84.5 degrees F (YELLOW ZONE)

- i. All sports
 - 1. 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. A cooling station (ice towels, shaded areas, etc.) will be made available.
 - 4. Watch/monitor athletes carefully for necessary action
- ii. Contact sports and activities with additional protective equipment (in addition to the above measures)
 - 1. Protective equipment is removed when not necessary for safety (helmets, shoulder pads, or catching gear).
- iii. Reduce time of inside and outside activity. Consider postponing activity to later in the day.
- iv. 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.

C. 84.6-87.5 degrees F (ORANGE ZONE)

- i. All sports
 - 1. Water should always be available and athletes should be able to take in as much water as they desire.
 - 2. Coaches and officials are encouraged to take a 10:00 break every 30:00 of training or competition.
 - 3. A cooling station (ice towels, shaded areas, etc.) will be made available for before, during, and after exercise/training/competition.
 - 4. Watch/monitor athletes carefully for necessary action

5. If practicing, maximum of 2 hours of training/practice including all breaks from original start time even if WBGT drops below 84.6.
 - ii. Contact sports and activities with additional protective equipment (in addition to the above measures)
 1. For Practices: Protective equipment is removed when not necessary for safety (helmets, shoulder pads, or catching gear). Football and lacrosse are permitted a maximum of helmet, shoulder pads, and protective gloves. If additional equipment is necessary for safety, suspend activity.
 2. For Contests: Helmets and other protective equipment removed if not involved in activity or necessary for safety. If necessary for safety, suspend activity.
 - iii. 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.
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D. 87.6-89.9 degrees F (RED ZONE)

- i. All sports
 1. Water should always be available and athletes should be able to take in as much water as they desire.
 2. Coaches and officials are encouraged to take a 10:00 break every 30:00 of training or competition.
 3. A cooling station (ice towels, shaded areas, etc.) will be made available for before, during, and after exercise/training/competition.
 4. Watch/monitor athletes carefully for necessary action
 5. If practicing, maximum of 1 hour of training/practice while temperature is in this range from the original start time even if the WBGT drops below 87.6
 - ii. Contact sports and activities with additional protective equipment (in addition to the above measures)
 1. For Practices: Protective equipment is removed when not necessary for safety (helmets, shoulder pads, or catching gear). Football and lacrosse are permitted a maximum of helmet, shoulder pads, and protective gloves. If additional equipment is necessary for safety, suspend activity.
 2. For Contests: Helmets and other protective equipment removed if not involved in activity or necessary for safety. If necessary for safety, suspend activity.
 - iii. Recheck air temperature and humidity every 30 minutes to monitor for increased heat conditions.
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E. ≥90 degrees F (BLACK ZONE)

- i. All sports
 1. No training/competition.
 2. Cancel and/or postpone activity to cooler time of the day.

NOTE: 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 or practice. For example, one part of a cross-country course may be hotter or more humid than other parts. The best course of action for certified athletic trainers and managers is to take a WBGT reading at the place of the most severe conditions.

Excessive Cold

Cold exposure can be uncomfortable, impair performance and even become life threatening. Conditions created by cold exposure include frostbite and hypothermia. Wind chill can make activity uncomfortable and can impair performance when muscle temperature declines. Frostbite is the freezing of superficial tissues, usually of the face, ears, fingers, and toes. Hypothermia, a significant drop in body temperature, occurs with rapid cooling, exhaustion and energy depletion. The resulting failure to the temperature-regulating mechanisms constitutes a medical emergency.

WBGT Temperature

Hypothermia frequently occurs at temperatures above freezing. A wet and windy 30-50 degree exposure may be as serious as a subzero exposure. For this reason, the Mid-Suburban League has developed a cold policy using the Wet Bulb Globe temperature not the ambient temperature. The WetBulb Globe Temperature (WBGT) is a measure of the temperature in direct sunlight, which takes into account: temperature, humidity, wind speed, sun angle and cloud cover (solar radiation). Wind Chill only takes into account two variables - temperature and wind speed, while the Apparent Temperature measures only temperature and humidity.

Clothing is one of the most important parts of keeping the athlete's body warm. Athletes should dress in layers and stay dry. Layers can be added or removed depending on temperature, activity and wind chill. Athletes should layer themselves with wicking fabric next to the body, followed by lightweight pile or wool layers for warmth. Athletes should use a wind block garment to avoid wind chill during workouts. Heat loss from the head and neck may be as much as 50% of total heat loss; therefore the head and neck should be covered during cold conditions. Other extremities should be covered at all times to protect from the wind chill.

Cold Exposure:

- Breathing of cold air can trigger asthma attack (bronchospasm)
- Coughing, chest tightness, burning sensation in throat and nasal passage
- Reduction of strength, power, endurance, and aerobic activity
- Core body temperature reduction, causing reduction of motor output

Cold Recognition:

- Shivering, a means for the body to generate heat
- Excessive shivering contributes to fatigue, loss of motor skills
- Numbness and pain in fingers, toes, ears, and exposed facial tissue
- Drop in core temperature; athlete exhibits sluggishness, slowed speech, disoriented

Precipitation

In addition to WBGT temperature, the cold policy also creates a differentiation between days with precipitation and dry days. Wind speed interacts with ambient temperature to significantly increase body cooling. When the body and clothing are wet (whether from sweat, rain, snow, or immersion), the cooling is even more pronounced due to evaporation of the water held close to the skin by the wet clothing.

Type of Activity

A third factor in the cold policy is the type of activity that is taking place. Activities are divided into two categories; Continuous Movement (CM) and Non-Continuous Movement (NCM). Continuous Movement activities are cross-country, football, lacrosse, soccer, and tennis. Non-Continuous Movement (NCM) activities are baseball, golf, softball, and track. Generally, while engaging in CM activities, because of the nature of the activity, more body heat is created. In NCM activities, the amount of movement is decreased therefore less body heat is created.

WBGT Temperature	Practice Limitations	Game Limitations
40 Degrees to 30 Degrees without precipitation	No Restrictions	All Games as scheduled
40 Degrees to 30 Degrees with precipitation	Practices limited to 2 hours	All Games as scheduled if precipitation is not a field factor
Below 30 Degrees to 25 Degrees without precipitation	Practices limited to 2 hours	All Games as scheduled
Below 30 Degrees to 25 Degrees with precipitation	Practices limited to 1 hour	All Games as scheduled if precipitation is not a field factor
Below 25 Degrees to 15 Degrees without precipitation	Practices limited to 1.5 hour, rewarm every 20 minutes	CM Games as scheduled, consider canceling NCM Games
Below 25 Degrees to 15 Degrees with precipitation	No outside practices	Consider canceling CM Games if precipitation is not a field factor, cancel NCM Games
Below 15 Degrees to 5 Degrees without precipitation	Practices limited to 1 hour, rewarm every 15 minutes	Consider canceling CM Games, cancel NCM Games
Below 15 Degrees to 5 Degrees with precipitation	No outside practices	Cancel Games
Below 5 Degrees	No outside activities	Cancel Games

Continuous Movement (CM)

Non-Continuous Movement (NCM)

cross-country, football, lacrosse, soccer, and tennis

baseball, golf, softball, and track

Protocol for Determining the WBGT Temperature

For the purposes of establishing temperature activity restrictions, WBGT readings will be taken on three different surfaces at the school site—grass, turf, and tennis courts. Decisions about play will be made separately for each surface based on that surface's WBGT reading. If a team is practicing or competing at the school's off-site facility (ex. golf or cross-country), the WBGT temperature taken on the grass surface at the school will be used to determine temperature activity restrictions at the off-site location.

The athletic trainer will take WBGT readings thirty minutes prior to the start of a game or thirty minutes prior to the start of the day's activities. Once the initial reading is taken, WBGT readings will be taken every 60 minutes until it has been determined the WBGT readings are below the yellow zone.

When monitoring the weather with a handheld heat stress monitor the licensed athletic trainer will note the WBGT every 30 seconds for five minutes. The certified athletic trainer will average the ten readings and use that final number to identify which activity restriction zone the current conditions fall under.

Using a Wet Bulb Globe Thermometer or a WBGT temperature is recommend, although a conversion to WBGT can be made from air temperature and relative humidity using chart 2.

Table 2. Estimate WBGT from ambient temperature and relative humidity assuming full sun conditions

Relative Humidity (%)	68.0	69.0	70.0	71.0	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0	90.0	91.0	92.0	93.0	94.0	95.0	96.0	97.0	98.0	99.0	100.0
60	68.0	68.5	69.0	69.5	70.0	70.5	71.0	71.5	72.0	72.5	73.0	73.5	74.0	74.5	75.0	75.5	76.0	76.5	77.0	77.5	78.0	78.5	79.0	79.5	80.0	80.5	81.0	81.5	82.0	82.5	83.0	83.5	84.0
50	68.0	68.5	69.0	69.5	70.0	70.5	71.0	71.5	72.0	72.5	73.0	73.5	74.0	74.5	75.0	75.5	76.0	76.5	77.0	77.5	78.0	78.5	79.0	79.5	80.0	80.5	81.0	81.5	82.0	82.5	83.0	83.5	84.0
40	68.0	68.5	69.0	69.5	70.0	70.5	71.0	71.5	72.0	72.5	73.0	73.5	74.0	74.5	75.0	75.5	76.0	76.5	77.0	77.5	78.0	78.5	79.0	79.5	80.0	80.5	81.0	81.5	82.0	82.5	83.0	83.5	84.0
30	68.0	68.5	69.0	69.5	70.0	70.5	71.0	71.5	72.0	72.5	73.0	73.5	74.0	74.5	75.0	75.5	76.0	76.5	77.0	77.5	78.0	78.5	79.0	79.5	80.0	80.5	81.0	81.5	82.0	82.5	83.0	83.5	84.0
20	68.0	68.5	69.0	69.5	70.0	70.5	71.0	71.5	72.0	72.5	73.0	73.5	74.0	74.5	75.0	75.5	76.0	76.5	77.0	77.5	78.0	78.5	79.0	79.5	80.0	80.5	81.0	81.5	82.0	82.5	83.0	83.5	84.0
10	68.0	68.5	69.0	69.5	70.0	70.5	71.0	71.5	72.0	72.5	73.0	73.5	74.0	74.5	75.0	75.5	76.0	76.5	77.0	77.5	78.0	78.5	79.0	79.5	80.0	80.5	81.0	81.5	82.0	82.5	83.0	83.5	84.0
0	68.0	68.5	69.0	69.5	70.0	70.5	71.0	71.5	72.0	72.5	73.0	73.5	74.0	74.5	75.0	75.5	76.0	76.5	77.0	77.5	78.0	78.5	79.0	79.5	80.0	80.5	81.0	81.5	82.0	82.5	83.0	83.5	84.0

District administration will determine an alternate way to obtain a WBGT reading when an athletic trainer is unavailable to determine a WBGT temperature (ex. summer baseball game) or if the school's WBGT is broken or malfunctioning. The alternate reading will be used only when a WBGT reading obtained by the school's athletic trainer is **not** available. *It will not be used as a basis for making activity restrictions that are in contradiction to the WBGT temperature obtained by the athletic trainer.*

Lightning

Lightning detection systems should be used to determine proximity and activity of lightning. If the lightning detection system sounds, teams should move indoors immediately. Teams may return outdoors once the lightning detection system signals an "all-clear".

If a lightning detection system is not available, or does not function properly, teams should move indoors once lightning is visible, or thunder is heard. Teams should remain indoors until no lightning/thunder is present for a minimum of 30 minutes.

What is Wet Bulb Globe Temperature?

The WetBulb Globe Temperature (WBGT) is a measure of the heat stress in direct sunlight, which takes into account: temperature, humidity, wind speed, sun angle and cloud cover (solar radiation). This differs from the heat index, which takes into consideration only temperature and humidity and is calculated for shady areas. Military agencies,

OSHA and many nations use the WBGT as a guide to managing workload in direct sunlight. (National Weather Service Website)

	WBGT	Heat Index
Measured in the sun	X	
Measured in the shade		X
Uses temperature	X	X
Used relative humidity	X	X
Uses wind	X	
Uses cloud cover	X	
Uses sun angle	X	

Why the MSL change from the “heat index” to the “WBGT”?

The Illinois High School Association (IHSA), the governing body of high school athletics in Illinois, recently enacted a new heat guidelines that use the WBGT. In an effort to more closely align with the IHSA, the Mid Suburban League has adopted new heat guidelines. There are several advantages to using a WBGT. First, the WBGT can be taken at a specific location. Using heat index temperatures calculated from positions close to the school, but not at the school or on the actual playing surfaces, does not give as accurate a reading. Playing conditions can vary significantly depending upon the playing surface and its location. Second, the WBGT can be taken inside a venue to gather a heat action temperature reading. Currently we do not have a way to gather a heat index for an indoor location. Additionally, the WBGT uses other weather factors, such as wind and cloud cover, to calculate a more accurate “feels like” temperature. The WBGT is used by OSHA and the United States Military when determining temperature and determining if it is safe to work.

Why are the WBGT action temperatures lower than the heat index numbers?

Because WBGT will account for factors such as wind and cloud cover, the calculated action temperatures are actually lower than the previous heat index temperatures. Therefore, the corresponding action levels have been lowered to account for the change.

Why would a practice or contest be allowed to continue when a “heat index” indicates a potential danger?

Because the WBGT uses additional factors such as cloud cover, wind, and sun angle to calculate their reading, the OSHA has determined the WBGT is a more accurate representation of actual temperature and the effects on an individual. When using the WBGT, it is possible to continue an outdoor activity even when the “heat index” reading is elevated because wind speed and cloud cover will affect the WBGT reading but will have no effect on the “heat index”.

What if a WBGT reading is not available?

District administration will determine an alternate way to obtain a WBGT reading when an athletic trainer is unavailable to determine a WBGT temperature

What if there is a conflict between WBGT and “heat index” readings? For example, the “heat index” says it is ok to play but the WBGT says practice should be canceled.

When a WBGT temperature is available, the decision to restrict or cancel practices and games will be based upon the WBGT readings and the restrictions table.