

# Emergency Action Plan

## Heat and Cold Safety



# Upper Perkiomen SD

High School

2 Walt Road

Pennsburg, PA 18073

Phone: (215)-679-5935

[upsd.org](http://upsd.org)

Middle School

510 Jefferson Street

East Greenville, PA 18073

Phone: (215)-679-6288

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## **Purpose of the Emergency Action Plan: Heat and Cold Safety**

The northeast United States is exposed to both extremes of heat and cold throughout the year. The purpose of this plan is to create a guide to follow in the case that any emergency situation pertaining to heat and cold arise. This plan also serves as an educational guide to increase preparedness to help prevent emergencies due to heat and cold stress.

## **Emergency Equipment**

### *Emergency Equipment for Heat Emergencies*

- Ice towels
- Cold whirlpool

### *Emergency Equipment for Cold Emergencies*

- Room temperature to warm water
- Heat packs
- Warm whirlpool

## **Emergency Communication**

- If it is an emergency, heat stroke or hypothermia is suspected, the Coach will activate EMS first.
- If the Certified Athletic Trainer is not onsite, the Coach will call the athletic trainer.
- The Coach should begin cooling/warming the athlete, if appropriate or as directed by the 911 operator.

### **Activating EMS**

- EMS should be activated if any loss of consciousness, deteriorating symptoms, discoloration of the skin or suspected signs of heat stroke are suspected.
- If heat stroke is suspected, the athlete must be cooled first, transport second.

\*Dial **9-911** if calling from a school landline or **911** if calling from a cell phone\*

### **When Calling EMS Provide:**

- Name, address of location, telephone number of caller
- Number of injured student athletes and the condition of the athlete(s)
- First aid provided thus far
- Specific directions to the emergency scene
- Other asked information

\*\*\*Follow directions from the appropriate High School or Middle School Emergency Action Plan.

## Athletic Department Contact Info

### **Athletic Trainers**

(Cell phone numbers given to AD and coaches)

**High School:** Jayde Kauffman (215)-679-7961 ext. 7015

Mackenzie Peed (215)-679-7961 ext. 7015

**Middle School:** Maryrose DiScipio (215)-679-6288 ext. 7511

### **Athletic Office**

**Athletic Director:** Robert Kurzweg III, CMAA (215)-679-5935 ext. 7124

**Administrative Assistant:** Melanie Kulp (215)-679-6065 ext. 7133

### **Administrators:**

**Principal:** Dr. Robert Carpenter (215)-679-5935

**Assistant Principal:** Todd Amsler (215)-679-5935

**Assistant Principal:** Josh Miller (215)-679-5935

## Heat Guidelines

The Certified Athletic Trainer or Athletic Director will monitor the heat index. The Certified Athletic Trainer and/or Athletic Director reserve the right to monitor and modify practice schedules due to heat.

The following recommendations should be taken into consideration in monitoring and modifying practice schedules: <sup>1</sup>

<b>Temperature</b>	<b>Warning</b>	<b>Guidance</b> <i>(Italicized – guidance for non-acclimatized athletes)</i>
< 78.0° F	---	Normal activity. <i>Extreme exertion may precipitate heat illness.</i>
78.0° F -- 82.0° F	<b>Green</b>	Normal activity. Pay special attention to at-risk individuals. <i>Use discretion in planning intense exercise.</i>
82.1° F – 86.0° F	<b>Yellow</b>	Use discretion in planning intense physical activity. Pay special attention to at-risk individuals. Watch for early signs and symptoms of heat illness. <i>Limit exercise to 1 hour; limit total outdoor exercise to 2.5 hours.</i>
86.1° F – 89.9° F	<b>Red</b>	Limit intense exercise to 1 hour; limit total outdoor exercise to 4 hours. Watch for early signs and symptoms of heat illness. <i>Stop outdoor practice sessions and outdoor physical conditioning.</i>
≥ 90° F	<b>BLACK</b>	Cancel all outdoor exercise involving physical exertion. <i>Cancel all outdoor exercise requiring physical exertion.</i>

## **Hydration**

The following hydration recommendations should be taken into consideration when practicing in the heat: <sup>1</sup>

	<b>Workload – Hydration Frequency (Work/Rest) /Amount of Water per Hour</b>		
<b>Temperature</b>	<b>Easy</b>	<b>Moderate</b>	<b>Hard</b>
< 79.9° F	No limit / 0.5 qt	No limit / 0.75 qt	40/20 min. / 0.75 qt.
80.0° F – 84.9° F	No limit / 0.5 qt	50/10 min. / 0.75 qt	30/30 min. / 1 qt
85.0° F – 87.9° F	No limit / 0.75 qt	40/20 min. / 0.75 qt	30/30 min. / 1 qt
88.0° F – 89.9° F	No limit / 0.75 qt	30/30 min. / 0.75 qt	40/20 min. / 1 qt
≥ 90.0° F	50/10 min. / 1 qt	20/40 min. / 1 qt	10/50 min. / 1 qt

Athletes should replenish 150 percent of fluids lost during exercise to restore normal hydration levels (euhydration). Diet, salt consumption, and other factors should be considered when rehydrating. When exercising for long durations, athletes should incorporate sports drinks containing electrolytes into their rehydrate routine. If athletes do not know how many liters of fluid they lost during exercise, drinking to thirst is a safe plan to follow to prevent overdrinking.<sup>2</sup>

## **Clothing and Sunscreen**

Thin, lightweight and lightly colored clothing (e.g. short sleeves, shorts, and light socks) should be worn in heat, especially when acclimating to the heat.<sup>1</sup>

All athletes should wear sunscreen to prevent damaging effects from the sun's ultraviolet radiation. Sunscreen should be applied hourly. Athletes at risk for skin cancer (those with fair complexion, light hair, blue eyes, and easily burnt skin) should wear at least an SPF 30 sunscreen.<sup>1</sup>

## Heat Acclimation

A gradual heat acclimatization is critical to preventing heat illness.<sup>1</sup> Athletes should be monitored during this process for early signs and symptoms of heat illness. Upper Perkiomen High School and Middle School adhere to the latest PIAA heat acclimatization recommendations.

All football athletes in grades 9-12 must complete a three to five consecutive day heat acclimatization period. This acclimatization period typically begins the week immediately before the two week preseason. Practice times and equipment will be modified during this period. Football athletes are only permitted to wear helmets and shoulder pads during heat acclimatization. For the football athletes completing their heat acclimatization the week before the two week preseason, practices will be limited to no longer than 3 hours in length with no less than a two hour break in between. Practices days one, three, and five are limited to five hours in length. Practices days two and four are limited to three hours in length.<sup>3</sup>

All football athletes in grades 7-8 must complete three consecutive days of heat acclimation. Equipment and practice modifications are implemented. Equipment modifications include only wearing a helmet, shoulder pads, and football shoes. Practices for the first three days of heat acclimatization must be non-contact. No middle school athletes can attend the high school heat acclimatization practices.<sup>3</sup>

## Heat Illness Protocol

If signs and symptoms of heat illness are observed and/or reported the athlete should immediately be removed from the practice/scrimmage/game.

- Certified Athletic Trainer onsite:
  - o Call the certified athletic trainer onsite immediately.
  - o If signs and symptoms of heat stroke are suspected call **911** or **9-911** before calling for the athletic trainer. In incidents of heat stroke, it is imperative the athlete is cooled first and transported second.
    - If heat stroke is suspected, the temperature of the athlete should be monitored.



- The athlete should be moved to a cool area (e.g. indoors, shade).
- Cold towels, indoors, and cold whirlpools are options of cooling.
- No Certified Athletic Trainer onsite
  - Move the athlete to a cool location.
  - If any signs and symptoms of heat stroke are present call **911** or **9-911** from a school telephone. Immediately begin to cool the athlete. It is imperative the athlete is cooled first and transported second. The temperature of the athlete should be monitored.
  - If applicable, have the athlete drink water.

**Heat Illness Defined**

<b>Heat Rash</b>	<i>also called prickly heat – red, raised rash with a prickling and tingling sensation.<sup>1</sup></i>
<b>Heat Syncope</b>	<i>Heat collapse, rapid physical fatigue during over-exposure to heat. Symptoms include dizziness, fainting, nausea.<sup>1</sup></i>
<b>Exertional Heat Cramps</b>	<i>Painful muscle spasms that occur due to excessive loss of water and electrolytes.<sup>1</sup></i>
<b>Exertional Heat Exhaustion</b>	<i>Results from dehydration. Mild hyperthermia, rectal temperature less than 104° F, no evidence of central nervous system (CNS) dysfunction. Signs and symptoms include pale cold clammy skin, profuse sweating, stomach cramps with nausea, vomiting, diarrhea, headache, persistent muscle cramps,</i>

	<p>dizziness, loss of coordination, weak rapid pulse.<sup>1</sup></p>
<p><b>Exertional Heat Stroke</b></p>	<p><b>Serious and life-threatening emergency.</b></p> <p>Most severe form of heat illness. Signs and symptoms include temperature 104° F or greater, hot flushed skin, fast shallow breathing, strong rapid pulse, nausea, vomiting, diarrhea, headache, dizziness, weakness. CNS dysfunction: altered consciousness, seizures, confusion, emotional instability, irrational behavior, decreased mental acuity.<sup>1</sup></p>
<p><b>Exertional Hyponatremia</b></p>	<p>Fluid and electrolyte imbalance. Caused by drinking too much fluid, sodium concentrations in the body decrease. Signs and symptoms include a worsening headache, nausea, vomiting, swelling of the hands and feet, lethargy, agitation, low blood sodium. <b>If CNS symptoms are present, this is an emergency.</b></p>
	<p>Rare, genetic muscle disorder.</p> <p>Hypersensitivity to anesthesia and exercise is</p>

<p><b>Malignant Hyperthermia</b></p>	<p><i>hot environments. Muscle breakdown causes symptoms similar to heat stroke; also muscle pain after exercise and elevated temperature 10-15 minutes post-exercise.<sup>1</sup></i></p>
<p><b>Acute Exertional Rhabdomyolysis</b></p>	<p><i>Sudden breakdown of skeletal muscle. Characterized by myoglobin in the urine. Signs and symptoms include a gradual onsite of muscle weakness, swelling, pain accompanied by darkened urine, and renal dysfunction. Associated with sickle cell. <b>The athlete should be referred to a physician immediately.</b><sup>1</sup></i></p>

**Sickle Cell Trait**

Approximately 8-13 percent (2 million people) African Americans have the sickle cell trait. Athletes with sickle cell trait have red blood cells (RBCs) that sickle/crescent with an abnormal type of hemoglobin. Sickled cells have a harder time carrying the oxygen needed. A family history and blood test is needed to determine the present of sickle cell anemia. Some athletes who have this trait do not experience signs and symptoms. Signs and symptoms include cramping, fatigue, inability to catch one’s breath, overheating of the skin, a high fever, severe pain in the limbs and/or abdomen, and splenic syndrome. Athletes with the sickle cell trait should be allowed to build up slowly to training progressions, can be excluded from performance tests, encouraged to participate in exercise year round, and set their own pace. In the event of a sickle cell episode the athlete should be immediately removed from exercise and vital signs should be taken immediately. If symptoms decline or the athlete is showing concerning signs and symptoms call **911** or **9-911** from a school phone, attach an AED immediately. Medical staff should be told about the sickle cell trait and expected explosive rhabdomyolysis and grave metabolic complications.<sup>1,5</sup>

## **Cold Guidelines**

The Certified Athletic Trainer and/or the Athletic Director will monitor the cold by monitoring the wind chill. The Certified Athletic Trainer and/or Athletic Director reserve the right to monitor and modify practice schedules due to the cold.

The following recommendations should be taken into consideration in monitoring and modifying practice schedules: <sup>7, 8, 9</sup>

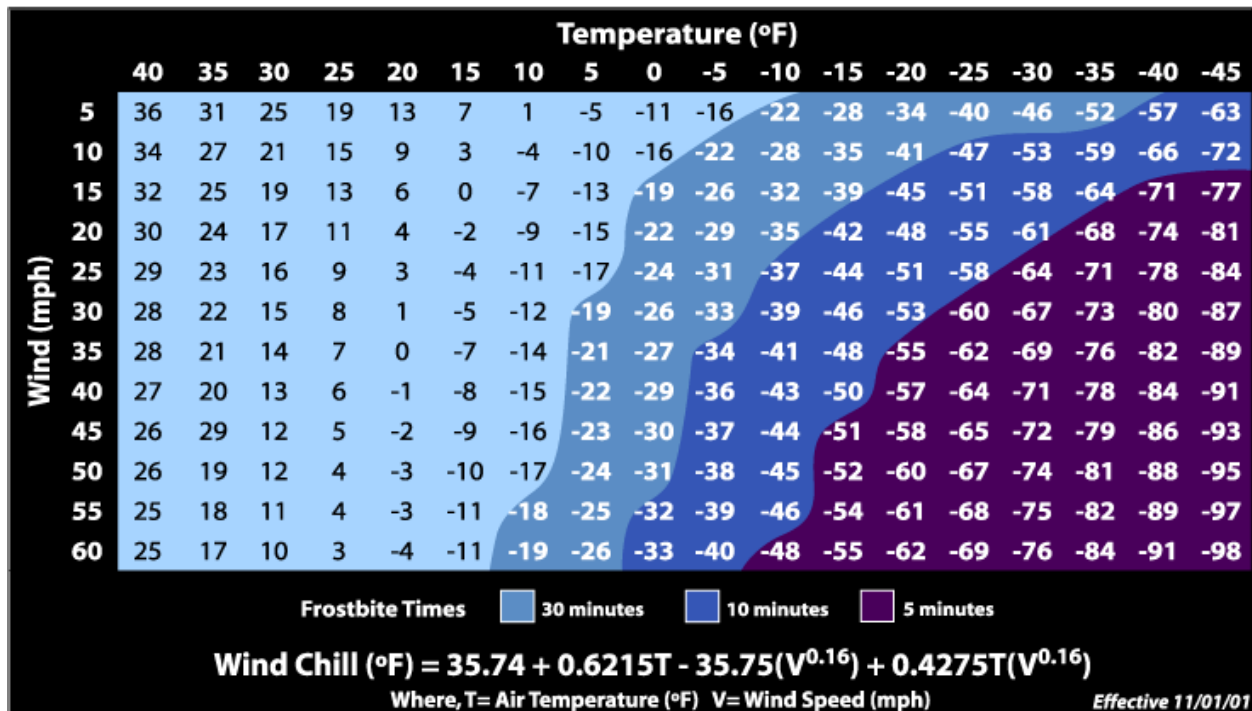
<b>Wind Chill Temperature</b>	<b>Practice Length (Outside Practice /Inside Warm-Up)</b>	<b>Recommendations</b>
> 30° F	No restrictions	Wear appropriate clothing for the weather.
30.0° F – 25.1° F	45 minutes / 10 minutes	Wear appropriate clothing. Be aware of the potential for cold injury.
25.0° F – 15.1° F	30 minutes / 10 minutes	Cover as much of the exposed skin as practical. Wear additional clothing/layers.
15.0° F – 5.1° F	15 minutes / 10 minutes	Consider modifying activity to limit cold exposure.
≤ 5° F	<b>No outside practices are permitted.</b>	

You can use this graph to help determine wind chill or the following link: <sup>7,8</sup>

[https://www.weather.gov/epz/wxcalc\\_windchill](https://www.weather.gov/epz/wxcalc_windchill)



## Wind Chill Chart



### Prevention Methods for Cold Stress

When exercising in the cold, athletes should wear several thin layers of clothing. Athletes should cover their head, neck, and hands when exercising in the cold. Athletes should try to warm the air they breathe with a scarf covering their nose. Athletes should try to stay as dry as possible when exercising in the cold. Polypropylene, wool, or other fabrics are good choices of fabric to help wick moisture away and keep the body cool. Try to stay away from cotton.

Athletes should warm-up thoroughly and keep warm until practice/competition. Athletes should hydrate to help regulate body heat. Hydrating in the cold is just as important as hydrating in the heat. Athletes should never train alone.<sup>6</sup>

## **Cold Stress Protocol**

If the Certified Athletic Trainer is onsite:

- Check for signs and symptoms of hypothermia. If CNS symptoms are present or the patient is unconscious act as a first responder if certified in: First aid, CPR, and AED if needed.
  - o Call **911** or **9-911** from a school telephone.
  - o Designate someone to call the Certified Athletic Trainer after acting as a first responder
- If no concerning hypothermia symptoms are present call for the athletic trainer.

If there is no Certified Athletic Trainer onsite:

- Check for signs and symptoms of hypothermia. If CNS symptoms are present or the patient is unconscious act as a first responder if certified in: First aid, CPR, and AED if needed. Call **911** or **9-911** from a school telephone.
- If the athlete is conscious and not displaying CNS symptoms, move the athlete to a warm area. If clothing is wet or damp remove the appropriate layers. Allow the athlete to use heat packs or immerse the area in warm 100-110° F water. If appropriate, have the athlete drink hot drinks.

**Cold Stress Defined**

Frost Nip	<i>Affects the ears, nose, cheeks, chin, fingers, and toes. Occurs with high winds and/or cold. Skin appears firm at first with cold painless areas that peel off or blister 24-72 hours after exposure.<sup>1</sup></i>
Frostbite	<i>Chilblains, prolonged exposure to the cold. Signs and symptoms include skin redness, swelling, tingling and pain in toes and fingers. <u>Superficial frostbite</u> – skin and subcutaneous tissue. Skin appears pale, hard, cold, and waxy. Rewarm by immersing the area in warm water 100-110° F. Common sensation is numbness prior and stinging after rewarming the area. <u>Deep Frostbite</u> – Serious injury. Deep tissues. Immediate hospitalization. Signs and symptoms include discoloration of the skin, cold hard pale skin, pale or white tissue, numbness. Rapid rewarming techniques include hot drinks, heating pads, temperature should be warm 100-110° F.<sup>1</sup></i>
Trench Foot	<i>Wrinkling of the skin of the feet. Prolonged exposure to cold, damp conditions.<sup>9</sup></i>
Hypothermia	<i>Typically a decrease in body temperature below 95° F. 95-98.6° F – Mild hypothermia. 90-94° F – Moderate hypothermia. Below 90° F severe hypothermia. If Moderate and/or severe hypothermia is suspected, call <b>911</b> or <b>9-911</b> from a school telephone.</i>

## Resources:

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3. Zimmerman, J., & D. (2017). Football Pre-Season Heat-Acclimatization Guidelines. Retrieved from [http://www.piaa.org/assets/web/documents/2017\\_Heat\\_Acclimatization\\_Guide.pdf](http://www.piaa.org/assets/web/documents/2017_Heat_Acclimatization_Guide.pdf)
4. Casa, D. J., DeMartini, J. K., Bergeron, M. F., Csillan, D., Eichner, E. R., Lopez, R. M., . . . Yeargin, S. W. (2015). National Athletic Trainers' Association Position Statement: Exertional Heat Illnesses. *Journal of Athletic Training*, 50(9), 986-1000. doi:10.4085/1062-6050-50.9.07
5. Anderson, S., Eichner, E. R., et. Al. (2002). Consensus Statement: Sickle Cell Trait and the Athlete. Retrieved November 1, 2017, from <https://www.nata.org/sites/default/files/sickle-cell-trait-and-the-athlete.pdf>
6. P. (2017, September 5). 2017-2018 Sports Medicine Guidelines. Retrieved November 3, 2017, from <http://www.piaa.org/assets/web/documents/Handbook%20-%20Section%20VI%20-%20Sports%20Medicine.PDF>
7. Fijalkowski, H., & Palmer, K. (2017). Cold Weather Guidelines. Retrieved November 3, 2017, from <http://www.millersville.edu/athletictraining/cold-weather.php>
8. National Weather Service: National Oceanic and Atmospheric Administration (n.d.). Wind Chill Calculator. Retrieved November 3, 2017, from [https://www.weather.gov/epz/wxcalc\\_windchill](https://www.weather.gov/epz/wxcalc_windchill)
9. Cappaert, T. A., Stone, J. A., Castellani, J. W., Krause, B. A., Smith, D., & Stephens, B. A. (2008). National Athletic Trainers' Association Position Statement: Environmental Cold Injuries. *Journal of Athletic Training*, 43(6), 640-658. Retrieved November 3, 2017, from <http://natajournals.org/doi/pdf/10.4085/1062-6050-43.6.640?code=nata-site>