

Protocol for Heat Index Monitoring and Student Activities

Overarching Description of Regulation
<ol style="list-style-type: none"> 1. The Heat Index is an accurate measure of how hot it really feels when the effects of humidity are added to high temperature. These guidelines have been developed to ensure that all students and staff are protected from heat related illness, ranging from heat cramps, to exhaustion and potential heat stroke caused by the body's inability to cool oneself due to extreme heat.
Sub Regulations (table of contents)
<ol style="list-style-type: none"> 1. Monitoring of the Heat 2. High Temperature conditions 3. Heat levels requiring action 4. List of students with sensitive respiratory conditions 5. Student excursions and Invitational sports tournaments 6. Heat index and SPAS staff activities 7. Heat index teaching and learning
Contents of Sub Regulations
<ol style="list-style-type: none"> 1. Hanoi has a hot and humid climate for part of the year, with the temperature and humidity combining to make the temperature feel considerably hotter. At SPAS, we can view weather conditions via our weather sensor. 2. Some sporting activities can continue in conditions of high temperatures if risk factors are identified and managed. Those at risk of suffering from heat related illnesses are the very young, elderly, obese, diabetics, persons recovering from illness and diarrhea or suffering from chronic conditions. Other risk factors include poor hydration, high temperatures and humidity, excessive physical exertion, insufficient recovery time, and inappropriate uniform and clothes. Students new to the country and environment are particularly vulnerable. A combination of these risk factors elevates the chance of someone suffering from a heat related illness. 3. Heat level Action - SEE CHART A BELOW 4. SPAS Health Center shall maintain and issue a list of students with known respiratory conditions. 5. This regulation applies to on-campus activities, invitational tournaments and school excursions. Necessary actions are to be taken as promptly as practical according to the action chart. 6. All SPAS Employees are urged to take the recommended actions at each level of heat index as outlined in Chart A. In any event, when the heat index is 46 degrees or higher all non air-conditioned activities on the SPAS campus are canceled except for exceptions listed below. 7. Temperature, heat indexes and air quality are components of environmental studies. The Principals will work with teachers to develop appropriate lessons within the school's curriculum. The Principals will implement appropriate communications procedures and processes that may be necessary to administer this regulation.
Responsible Division: School Health Center
Associated Publications: Adapted from UNIS, NOAA, and National Weather Service
Date Approved: September 2019

DETAILED INFORMATION AND ACTION CHART FOLLOWS NEXT PAGES

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HEAT LEVEL ACTION CHART A AND HEAT MANAGEMENT GUIDELINES

Below 33°C Fatigue possible with prolonged exposure and/or physical activity.	33-40°C Sunstroke, muscle cramps, and/or heat exhaustion possible with prolonged exposure and/or physical activity.	41-45°C Sunstroke, muscle cramps, and/or heat exhaustion likely. Heatstroke possible with prolonged exposure and/or physical activity.	46°C and above Extreme Danger: Heat stroke or sunstroke likely.
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**Our Heat Index protocol (in degrees C) is more conservative than NOAA's (in degrees F) since 41 degrees C is about 105 degrees F and 46 degrees C is about 114 degrees F.

NOAA's National Weather Service

Heat Index

Temperature (°F)

	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution
 Extreme Caution
 Danger
 Extreme Danger

** Important to keep in mind that the Heat Index is calculated using a formula created by the National Weather Service. The formula uses two values: temperature and percent humidity. The formula also assumes that the person experiencing heat is 5'7" and weighs 147 pounds. Thus, for children, the experienced heat index may actually be higher than described by this formula. The smaller the child, the higher the experienced heat index.

In lieu of this information, we at SPAS feel that the Heat Index Protocol should be *different for elementary and secondary students. See below.*

PLEASE NOTE- our weather station-defined Heat Index is not accurate on **RAINY DAYS** since percent humidity is part of the equation. Thus all rainy day activities occur at the discretion of Taylor, teachers and coaches.

Heat Index	St. Paul Protocol
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<p>Heat Index below 33°C</p> <p>“Green Zone”</p>	<p>The following actions are standard practice for Outdoor Activities:</p> <ul style="list-style-type: none"> ● Recommended water breaks every 30 minutes. ● The School shall provide adequate water supply. ● Staff should inform students to apply sun lotion before lessons, games and activities. ● Students should be encouraged to wear hats for recess, lunch, PE lessons ● All athletes and students should bring water bottles to trainings and PE classes ● Where possible spend transitions, rest periods and direct teaching moments in shade provided around facilities. ● Students who want breaks should do so at any time. ● Staff to watch/monitor players carefully.
<p>Heat Index 33-40°C</p> <p>“Yellow Zone”</p>	<p>All actions as per Heat Index Ratings under 33-40°C additionally:</p> <ul style="list-style-type: none"> ● Recommended water breaks every 20 minutes. ● During competitive and training matches, students should be subbed often ● Staff identify students who have higher risk of heat illnesses and provide with alternative to training in heat ● Staff should brief students of increased risk at beginning of practices and lessons of increased heat illness risk within and above this zone. ● Students showing signs of heat related illness should withdraw from the activity and be escorted to the nurse ● Misting Fans/Towels can be used for outdoor activities ● Lessons take place in shade as much as possible ● Modify training and/or games to allow for regular hydration and rest
<p>Heat Index 41-45°C</p> <p>“Orange Zone”</p>	<p>All actions as per Heat Index Ratings under 41-45°C additionally:</p> <ul style="list-style-type: none"> ● Recommended water breaks every 15 minutes ● Staff should clearly brief students of extreme risk of heat illness within this zone and exclude students who have not hydrated throughout the day. ● Outside activities with a high physical exertion moved to shaded areas ● Students showing signs and symptoms of heat related illness should withdraw from the activity and be escorted to the nurse ● Electrolytes should be encouraged and utilized for athletes practicing and competing in this zone ● The maximum duration of exposure in this temperature is one hour. ● Any teacher or coach MAY decide to host activities indoors at their discretion. ● Practices and other activities can be canceled at the discretion of the Athletics Director or Secondary and Elementary Principals.
<p>Heat Index above 46°C</p> <p>Heat Stroke Imminent & Extreme Risk</p> <p>“Red Zone”</p>	<ul style="list-style-type: none"> ● Heat Index of 46 or above, all activities MUST be held indoors for ES including recess, PE, classroom lessons and Beyond. ● Teachers/coaches for SECONDARY students MAY hold sessions outside with 10 minute interval water breaks up to a cut off of 48°C if desired. ● The heat index cut off for all HAC athletic activities hosted at our school is 46°C.

SPAS Heat Management Information

PURPOSE

Protocol for Heat Index Monitoring and Student Activities

The SPAS Heat Management Guidelines have been developed to ensure that all students and staff are protected from heat related illness, ranging from heat cramps, to exhaustion and potential heat stroke, a life threatening emergency due to the body's inability to cool oneself due to extreme heat.

BACKGROUND

Heat Related Illnesses: When the body heats too quickly to cool itself safely, or when too much fluid or salt is lost through dehydration or sweating, body temperature rises and a heat related illness may develop. There are three stages of Heat related illness that all staff teaching at SPAS needs to be aware of:

1. Heat Cramps are experienced from fluid loss due to heavy sweating and usually occur in the abdomen or legs.
2. Heat Exhaustion derives from prolonged exposure in hot conditions with high fluid loss due to heavy sweating and an elevated body temperature below 40 degrees Celsius
3. Heat Stroke is a condition when the core body temperature is higher than 40 degrees Celsius and is potentially fatal.

Heat Stroke is a serious condition, with complications involving the central nervous system that occur after prolonged exposure to high temperatures. Heat cramps and Heat Exhaustion can quickly turn to heat stroke if signs and symptoms are not recognised and treatment is not administered quickly.

Ambient Temperature (Not heat index, just temp)

Temperature	Medical Conditions
26-32C 80-90F	Fatigue is possible with prolonged exposure and activity. Continuing activity could result in heat cramps.
32-40C 90-105F	Heat cramps and heat exhaustion are possible. Continuing activity could result in heat stroke
40-54C 105-130 F	Heat cramps and heat exhaustion are likely. Heat stroke is probable with continued activity
Over 54 C Over 130 F	Extreme danger — heat stroke is imminent

SIGNS AND SYMPTOMS OF THE THREE STAGES OF HEAT RELATED ILLNESS

Signs and Symptoms of Heat Cramps: Profuse Sweating, Fatigue, Thirst, Muscle Cramps

Signs and Symptoms of Heat Exhaustion. The signs and symptoms of Heat Cramps and...

- Headache
- Dizziness and Lightheadedness
- Weakness
- Nausea and Vomiting
- Cool Moist Skin
- Dark Urine

Signs and Symptoms of Heat Stroke

- Throbbing headache

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- Dizziness and lightheadedness
- Lack of sweating despite the heat
- Red, hot, and dry skin
- Muscle weakness or cramps
- Nausea and vomiting
- Seizures
- Rapid, shallow breathing
- Unconsciousness
- Rapid heartbeat strong or weak
- Confusion, disorientation, or staggering

EDUCATION & PREVENTION

- Provide Staff Training (Yearly)
 - Sun Protection Guidelines
 - Signs, symptoms and treatment of heat related illnesses and Hyponatremia
 - Risk factors associated with onset of heat related illnesses
 - First Aid All teachers to be certified
- Educate students and parents regarding sun and heat exposure (Yearly)
 - Sun Protection Awareness through PE/Health
 - Banners/poster/screen campaign
 - Education through the curriculum
 - Make parents aware of our Sun Protection Guidelines
- Ensure students are protecting themselves (Daily)
 - All students are required to wear sun hats during PE lessons
 - Spare hats and water bottles made available
 - Have a PE kit that is appropriate for hot conditions
 - Encourage the daily application of sunscreen in physical activity
- Encourage students to avoid dehydration (Daily)
 - Students to have water bottles in class, PE, activities and trips
 - Students engaging in physical activity should be encouraged to drink 100 to 250ml of water every 20 minutes
- Ensure this Policy is reflected in the planning of outdoor classes, activities, events and capital development projects (Yearly)
 - Tree planting for shade is actively considered and encouraged
 - Current and future projects consider use of shading
 - Physically energetic sports, competitive games during the cooler periods
 - Outdoor sporting events and/or trips planned for cooler months
 - ES recess is limited to 20 minutes outside to reduce risk of heat illness
- Monitor the weather and issue advice
 - PE staff to monitor temperature and humidity on a real time basis
 - Warnings of extreme temperatures issued to key staff
 - Temperature, humidity and measurements recorded by Teaching Assistants.
- Adhere to standard operating procedure
 - Ensure all staff are aware of procedure
 - Display standard operating procedure

Heat Index Temperature

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The Heat Index Temperature is an index that describes what the temperature really feels like. It is a unique composite of the effects of temperature, wind, humidity, sunshine intensity, cloudiness, precipitation and elevation on the human body, everything that affects how warm or cold a person feels.

Other Heat Related Notes:

- Heat emergencies can afflict any age patient, with or without underlying health problems, in a variety of ambient temperatures
- High temperatures, high humidity, and high exertion are often factors that lead to a heat emergency
- Heat emergencies are most common in elderly patients, infants and young children, morbidly obese patients, athletes, and other patients with underlying health problems
- Heat exhaustion is a circulatory system problem. It presents as hypovolemia. The patient has a normal or slightly elevated core temperature problem.
- Heat stroke is a life threatening neurological problem. The patient has an extremely high core temperature problem.
- 50% of heat stroke patients have hot, red, dry skin.
- Hyperthermia may be a result of illegal drug use
- Many medications and illnesses compromise bodies ability to thermoregulation
- Water intake and urination frequency are key history findings to differentiate hyponatremia and heat exhaustion

-Adapted from Heat Index Policy as defined by UNIS

-Heat Index Assumptions and more info on children's risk of heat injury:

http://www.nws.noaa.gov/om/heat/heat_index.shtml

http://www.slate.com/articles/news_and_politics/explainer/2005/07/how_does_the_heat_index_work.html

<http://www.ihsaa.org/Portals/0/ihsaa/documents/general/Heat%20Chart.pdf>

<http://www.mayoclinic.org/diseases-conditions/heat-stroke/symptoms-causes/dxc-20346534>