

Governor Thomas Johnson High School
EMERGENCY ACTION PLAN- Exertional Heat Illness

Governor Thomas Johnson High School

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PURPOSE

Exertional heat illness includes exercise-associated muscle cramps, heat syncope, heat exhaustion, and exertional heat stroke (EHS). Current best practice guidelines suggest that the risk of exertional heat injuries can be minimized with heat acclimatization and diligent attention to monitoring individuals participating in activities that place them at a higher risk for these types of injuries.¹In the event an athlete sustains a heat illness, immediate and proper treatment is needed.

National governing bodies, such as the National Federations of High School Associations, National Collegiate Athletic Association (NCAA) and numerous state athletic/activity associations, have published guidelines for the prevention, monitoring and treatment of exertional heat illnesses. In addition, national authorities such as the National Athletic Trainers' Association and the Korey Stringer Institute have published research to support best practices in this area. The development of the organization's heat acclimatization guidelines will be based on the current best practice documents.

¹Casa DJ, Demartini JK, Bergeron MF, et al. National Athletic Trainers' Association Position Statement: Exertional Heat Illnesses. *Journal of Athletic Training*. 2015;50(9):986-1000.

POLICY STATEMENT

This policy describes the best practice procedures for the prevention, monitoring, and when necessary, the treatment of exertional heat illnesses for students/athletes, faculty and staff of Governor Thomas Johnson High School.

This policy will be a living, working document that is continually reviewed and updated yearly as the organization and our community changes.

PROCEDURES

Prevention

Pre-participation history and physical exam

1. A thorough medical history will be gathered (history of heat illness, sickle cell trait/disease, etc.) All student-athletes are required to have updated PPE completed by the first day of practice in August in order to participate in sports.

2. Individuals with risk factors will be identified and counseled (see table below):

Risk Factors for Heat Illness	
Intrinsic	Strategies to Minimize Risk
High intensity exercise	Gradually phase in exercise and conditioning
Fever or illness	Monitor and remove at risk athletes as necessary
Dehydration	Educate coaches/athletes on proper hydration Provide adequate access to water
Overweight/obesity	Gradually phase in exercise and conditioning
Lack of heat acclimatization	Follow heat acclimatization program
Medications (antihistamines, diuretics, ADHD drugs)	Monitor and remove at risk athletes as necessary
Skin disorder (sunburn or malaria rubra)	Monitor athletes closely
Predisposing medical conditions	Monitor and remove at risk athletes as necessary
Extrinsic	Strategies to Minimize Risk
High ambient temperature, solar radiation or humidity	Avoid exercise in hotter parts of the day
Heavy gear or equipment	Gradually introduce equipment
Poor practice design	Educate coaches regarding strategies to minimize risk

3. When applicable, the Athletic Trainer or persons responsible will be notified of individuals with pre-existing conditions that place the individual at risk of exertional heat illness. Parents and student-athletes should be informing Athletic Trainer and or coaches of changes in medication or medical conditions that may predispose an individual to an EHI.

Environmental Monitoring and Activity Modification/Cancellation

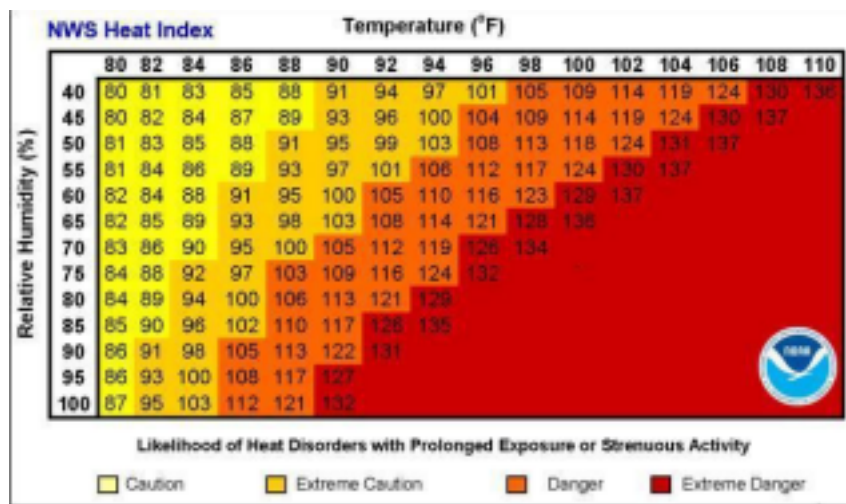
1. When Athletic Trainer is present environmental monitoring will occur utilizing a WBGT device – GENERAL Heat Index Checker. In the event that the Athletic Trainer is not present the coach, athletic director, school administrator, etc. will base environmental monitoring from the NWS Heat Index.
2. Environmental monitoring will occur any time it is warm outside (i.e. over 70°F)
3. Environmental monitoring and activity modifications may be necessary for certain types of indoor facilities such as the Gymnasium and the Auxiliary Gymnasium.
4. Monitoring of WBGT will occur every 30-60 minutes depending on conditions (Green/Yellow ~ 60 min.; Orange/Red ~30 min) beginning at the scheduled practice time and will make any modification/cancelation of activity based on the following:

	Activity Guidelines
82.0	Normal Activities – Provide at least three separate rest breaks each hour with a minimum duration of 3 min each during the workout.
82.2 - 86.9	Use discretion for intense or prolonged exercise; Provide at least three separate rest breaks each hour with a minimum duration of 4 min each.

<p>87.1 - 90.0</p>	<p>Maximum practice time is 2 h. For Football: players are restricted to helmet, shoulder pads, and shorts during practice. If the WBGT rises to this level during practice, players may continue to work out wearing football pants without changing to shorts. For All Sports: Provide at least four separate rest breaks each hour with a minimum duration of 4 min each.</p>
<p>90.1 - 91.9</p>	<p>Maximum practice time is 1 h. For Football: No protective equipment may be worn during practice, and there may be no conditioning activities. For All Sports: There must be 20 min of rest breaks distributed throughout the hour of practice.</p>

92.1 No outdoor workouts. Delay practice until a cooler WBGT is reached.

a) If WBGT is not available and/or the Athletic Trainer is not on campus all modifications/cancelation decisions will be made based on the NWS Heat Index by the Athletic Directors, School Administration, Coach, etc.



Temp Relative Humidity Air Quality Index Restrictions			
< 89°F	< 70%	CODE GREEN	Coaches discretion No Restrictions
80°F - 89°F	≥70%	CODE YELLOW	Monitor Carefully Shortened Practices Frequent Water Breaks every 30 minutes Football Minimal Pads

90°F - 99°F	≤70%	CODE YELLOW	Monitor Carefully Shortened Practices Frequent Water Breaks every 30 minutes Football Minimal Pads NO MID-DAY PRACTICE (Before 12, After 5)
90°F - 99°F	≥70%	CODE ORANGE	Monitor Carefully Shortened Practices MANDATORY Water & Shade- every 15 minutes T-Shirt Shorts ONLY NO MID-DAY PRACTICE (Before 12, After 5)
≥ 100°F	>0%	CODE RED	CANCEL, POSTPONE, SUSPEND ALL ACTIVITY

b) WBGT will be measured on the Main Stadium Field, Auxiliary Turf Field, Softball Field, Baseball Field, and Gymnasium – during appropriate practice times. All off campus practices and games will follow the NWS Heat Index Guidelines or that facilities Policies and Procedures regarding Exertional Heat Illness.

c) All environmental monitoring will be recorded and filed with the Athletic Trainer. If Athletic Trainer is not present for a practice the coach monitoring the environmental conditions will record the appropriate information on the chart located in the Athletic Training Room.

Monitoring

1. Monitoring of student-athletes safety will be continuous during any physical activity by either the certified Athletic Trainer and/or Coaches.
2. Coaches have been educated on the signs and symptoms of exertional heat illness via the required Care and Prevention Course given annually by Kimberly Fortney e) These signs and symptoms include (but are not limited to) the table below:

Rectal temperature greater than 104 (40°C) at time of incident.	Rapid pulse, low blood pressure, quick breathing
Headache	Dehydration, dry mouth, thirst
Confusion or just look “out of it”	Decreasing performance or weakness

Disorientation or dizziness	Profuse sweating
Altered consciousness, coma	Collapse, staggering or sluggish feeling
Nausea or vomiting	Muscle cramps, loss of muscle function/balance, inability to walk
Diarrhea	Irrational behavior, irritability, emotional instability

Treatment in the event of an Exertional Heat Stroke (EHS) **MEDICAL EMERGENCY**

Recognition

1. Any athlete with signs of central nervous system (CNS) dysfunction (ie collapse, disorientation, etc) during exercise in the heat should be suspected to be suffering from EHS
2. Patients with suspected EHS should immediately be removed from practice/game and cooled via Cold Water Immersion Tub or Tarp Assisted Cooling Oscillation (TACO) – All coaches will be trained on TACO method prior to the start of Sports on August 14, 2019 via Kelsey McCulley, LAT, ATC
3. Rectal temperature is the Gold Standard for diagnosing and monitoring an individual with suspected Heat Stroke. It is important to reiterate that during and following intense exercise in the heat, temporal, aural, oral, skin, axillary and tympanic temperature are not valid and should **never** be utilized in evaluating a potential exertional heat stroke. Rectal Thermometers are not available at Frederick County Public Schools, therefore any suspected Exertional Heat Illness will be treated as a Medical Emergency and EMS will be activated
4. Initiate Cooling Protocol Immediately

Cooling

1. The patient must be moved to a cooling zone, begin appropriate treatment and continuously monitored.
 - f) A Cold Water Immersion Tub will be located at the West end of the Auxiliary Turf Field, next to the available water source.
 - g) If practice is in a location that will delay cooling for >5 minutes Athletic Trainer will have a tarp and chest of ice and at least 1- 5 gal cooler of water in order to begin cooling. Coach will notify the athletic trainer of the Emergency and begin the cooling method using the tarp provided in medical kit or tarp with Athletic Trainer. Athletic Trainer will be responsible for the head and neck while coaches, assistant coaches and other student-athletes will be delegated to assist with oscillation. Designated student-athletes will be responsible for getting more ice/water for cooling.
 - h) In the event there is no Athletic Trainer present and practice is in a location that will delay cooling for > 5 minutes, all coaches will be provided a Tarp in their medical kit for use of Tarp Assisted Cooling Oscillation (TACO). Coaches will have at least 1 5-gal of water and 1 5-gal of ice to use for cooling. At least 6 delegated

individuals consisting of assistant coaches and student-athletes will assist in oscillation. All coaches will have been trained on the TACO method of cooling. Previously delegated individuals will be responsible for getting more ice/water for cooling.

2. Excess clothing shall be removed to aid cooling. If removal of clothing and/or equipment would cause delays of 5+ minutes, do not remove and initiate cooling. 6.

Place patient in a cold-water (35-59°F) tub up to the neck.

a) Wrap a towel across the chest and beneath both arms to prevent the athlete from sliding into the tub.

b) Ice shall cover the surface of the water at all times.

c) Water shall be continuously and vigorously stirred to maximize cooling. d) An ice-cold towel will be placed over the head/neck and rewet and replaced every 2 minutes.

3. Cold Water Immersion (CWI) Tub

a) Set Up: **Any Governor Thomas Johnson High School team practicing on the Stadium Turf Field is responsible for setting up the CWI Tub prior to practice.**

- CWI Tub will be located behind the Home Team Bench
- A tub filled partially with water
- 2 10-Gal coolers filled with ice next to the tub ready for treatment.
- Portable Litter for person transport if unconscious or unable to walk
- Rubber Ducky for water temperature monitoring. Goal is under 55deg F
- Towels for placement over the head and neck.
- Completion of set-up within 5-10 minutes prior to the practice/competition/event site by coach of practicing team

4. In the event the CWI is unavailable, or use of the tub will delay cooling >5 minutes than Tarp Assisted Cooling Oscillation (TACO) will be used – all coaches will be provided a Tarp in their medical kits that are required to be at every Governor Thomas Johnson High School sanctioned practice and game

Cool First, Transport Second

1. When a patient is diagnosed with EHS, the principle of Cool First, Transport Second will be used.

2. EMS should not transport the patient until:

- If EMS has a rectal thermometer a rectal temperature of 101°F is reached due to the inability to continue vigorous cooling in the ambulance
- Individual displays normal CNS function
- QHP (ie Athletic Trainer) on premises feels that the individual is sufficiently cooled (at least 30 min)

Vital sign monitoring

1. The QHP will monitor vital signs including heart rate, respirations, blood pressure and CNS function using Glasgow Coma guidelines

2. Vital signs will be taken after sufficient time in the cooling station, as determined by the QHP, before being transported by EMS. If vital signs diminish or CNS disturbance is suspected the individual will be inserted into the cooling station for immediate cooling
3. Unless another, more emergent medical condition arises in that individual, the individual will not be transported until vital signs are stable and CNS is stable.

EMS

1. EMS must be called immediately if a patient is suspected of EHS.
2. **HOWEVER**, any patient with EHS must be **cooled FIRST and then transported via EMS.** a) This cool first transport second EAP protocol will be communicated/shared with EMS annually PRIOR to the first official sport practice at the school in accordance with the EAP policy and procedures.

RETURN TO ACTIVITY

Patients who have suffered an exertional heat illness must complete a rest period and obtain clearance from a physician before beginning a progression of physical activity under the supervision of a qualified medical professional. The following is the suggested protocol:

1. Activity should first begin in a cool environment
2. Once patient has shown success with exercise in a cool environment, patient should then complete the heat acclimatization protocol as delegated by FCPS for progression back into exercise in a warm environment.
3. Individuals who have expressed signs and symptoms of an exertional heat illness (i.e. headache, dizziness, cramping, confusion, etc) will be monitored via weight loss recording before and after practice(s). If the individual is symptom free and meets the weight gain requirements they may commence with practice. Athlete will be monitored for no less than 3 days.