VPA Policy & Procedures on Emergency Preparedness for Athletics & Activities: Emergency Action Plans, AEDs, Participation in the Heat

Section 1: Emergency Action Plans (EAPs)

Each member school is required to ensure that there is an emergency action plan (EAP) in place that includes a venue-specific EAP for each venue that describes steps to be taken in the event of an emergency which may include but is not limited to:

- Blockage of airway, stoppage of breathing or circulation
- Severe bleeding
- Severely broken bone, deformity, or dislocation
- Any injury to the head, neck, or spine
- Loss of consciousness or seizures
- Heat stroke, environmental emergencies
- Severe asthma attack
- Severe allergic reaction

Every school's EAP is required to:

- Be reviewed and rehearsed each year or sooner if needed. The review and rehearsal shall include pertinent school staff and the local EMS provider.
- Be developed and coordinated with local EMS, school public safety officials, on-site medical personnel or school medical staff, and school administrators.
- Be distributed to all athletics staff members and healthcare professionals who will provide medical coverage during games, practices, or other events.
- List all on-site emergency equipment that may be needed in an emergency situation
- Identify personnel and their responsibilities to carry out the plan of action with a designated chain of command
- Include appropriate contact information for EMS
- Specify documentation actions that need to be taken post-emergency and appropriate notification of the patient's guardian.
- Include venue-specific maps and directions
- Have the venue-specific EAP posted at each venue

Section 2: Participation in the Heat

Exercise in a hot environment with associated fluid loss and elevated body temperature can lead to: Dehydration, Heat Exhaustion, Exertional Heat Stroke and Death.

Modifications are required if the environment is putting athletes at greater risk for heat illness.

All schools are required to adhere to the following policy for athletic participation in all sports during times of high heat and/or humidity.

Exertional Heat Stroke is on the rise in this country, and is currently the leading cause of preventable deaths related to athletic activity. The Vermont Principals' Association mandatory procedure for athletic activity in the heat provides critical standards to protect athletes against heat illnesses, and potentially save lives.

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This procedure follows recommended guidelines from the National Athletic Trainers' Association, the American College of Sports Medicine, and the Korey Stringer Institute.

STEPS FOR MONITORING HOT WEATHER:

- Weather should be monitored by designated athletic department personnel (Athletic Trainer if present) and an advisory should be issued to school coaching staff when applicable. Usually by email the day prior to the event warning of the potential, and the day of the event with any modifications for participation.
- Athletic Department officials are required to use an on-site Wet Bulb Globe Temperature Measuring (WBGT) Device. It is considered the gold standard measurement tool.
    - (if cost prohibitive, heat index measuring charts and apps can be used, although considered less accurate than WBGT)
    - The WBGT considers ambient temperature, relative humidity, wind, and solar radiation.
    - The Heat Index considers effects of ambient temperature and relative humidity only.
    - WBGT can be estimated from the chart below (Chart 2) in cases where there is full sun and light wind by using a heat index monitor.
    - There is a WBGT app for iOS or Android called WeatherFX, to estimate WBGT.
- Weather readings must be measured at the practice/game site, using a WGBT Device (or Heat Index Monitor). Measurements should be obtained beginning at least 1 hour prior to the event/warmups and monitored every 30 minutes thereafter if in the moderate to extreme risk category.
- Reminder: Synthetic Turf/Asphalt/Dark colored surfaces are significantly hotter than the ambient air temperature, especially if in full sun.
- Based on information from local/on-site weather measurements and from the National Weather Service, determine the risk of potential danger to participants using Table 1 below. Issue a warning and implement the practice or game plan for that day to be distributed to all coaches prior to practice/game time. Avoid scheduling training and competitions during the hottest part of the day (between 11 am and 4 pm).
- Shaded Areas should be easily accessible to athletes during rest/fluid breaks with unlimited fluids available
- An on-site Cold Water Immersion (CWI) tub for emergent athlete immersion is required whenever there is a risk of high heat/humidity.

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VPA Member Schools may utilize up to Category 2 for activity modifications if all requirements are adhered to within this document. Of most importance: the school must actively monitor the heat index temperature utilizing an on-site WBGT Device, have a CWI tub prepared for emergent athlete immersion, and is rehearsed and prepared to rapidly cool a student-athlete in the event of exertional heat stroke. If these conditions cannot be met, schools should refer to Category 1 for activity modifications.

Cat 3	Cat 2	Cat 1	Activity Guidelines
< 82.0°F <27.8°C	< 79.7°F <26.5°C	< 76.1°F <24.5°C	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°F 27.9-30.5°C	79.9 - 84.6°F 26.6-29.2°C	76.3 - 81.0°F 24.6-27.2°C	Use discretion for intense or prolonged exercise; Provide at least three separate rest breaks each hour with a minimum duration of 4 min each.
87.1 - 90.0°F 30.6-32.2°C	84.7 - 87.6°F 29.3-30.9°C	81.1 - 84.0°F 27.3-28.9°C	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.
90.1 - 91.9°F 32.2-33.3°C	87.8 - 89.6°F 31.0-32.0°C	84.2 - 86.0°F 29.0-30.0°C	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.
≥ 92.1°F ≥ 33.4°C	≥ 89.8°F ≥32.1°C	≥ 86.2°F ≥30.1°C	No outdoor workouts. Delay practice until a cooler WBGT is reached.

In some instances when a WBGT monitoring device is unavailable, a chart like the one shown below can be used to estimate WBGT. It must be noted that these are estimates and are derived only from using temperature and relative humidity and the chart accounts for *full* sunshine and *light* wind conditions. Thus, depending on the radiant heat load from the sun and the wind, the actual WBGT reading could be different from what is on the chart.

Wet Bulb Globe Temperature (WBGT) from Temperature and Relative Humidity

Relative Humidity (%) \ Temperature (°C)	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
0	15	16	16	17	18	18	19	19	20	20	21	22	22	23	23	24	24	25	25	26	27	27	28	28	29	29	30	31	31	32	32
5	16	16	17	18	18	19	19	20	21	21	22	22	23	24	24	25	26	26	27	27	28	29	29	30	31	31	32	33	33	34	35
10	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28	29	30	30	31	32	32	33	34	35	36	36	37
15	17	17	18	19	19	20	21	21	22	23	23	24	25	26	26	27	28	29	29	30	31	32	33	33	34	35	36	37	38	39	
20	17	18	18	19	20	21	21	22	23	24	24	25	26	27	27	28	29	30	31	32	32	33	34	35	36	37	38	39			
25	18	18	19	20	20	21	22	23	24	24	25	26	27	28	28	29	30	31	32	33	34	35	36	37	38	39					
30	18	19	20	20	21	22	23	23	24	25	26	27	28	29	29	30	31	32	33	34	35	36	37	39							
35	18	19	20	21	22	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39								
40	19	20	21	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39									
45	19	20	21	22	23	24	25	26	27	27	28	29	30	32	33	34	35	36	37	38											
50	20	21	22	23	23	24	25	26	27	28	29	30	31	33	34	35	36	37	39												
55	20	21	22	23	24	25	26	27	28	29	30	31	32	34	35	36	37	38													
60	21	22	23	24	25	26	27	28	29	30	31	32	33	35	36	37	38														
65	21	22	23	24	25	26	27	28	29	31	32	33	34	36	37	38															
70	22	23	24	25	26	27	28	29	30	31	33	34	35	36	38	39															
75	22	23	24	25	26	27	29	30	31	32	33	35	36	37	39																
80	23	24	25	26	27	28	29	30	32	33	34	36	37	38																	
85	23	24	25	26	28	29	30	31	32	34	35	37	38	39																	
90	24	25	26	27	28	29	31	32	33	35	36	37	39																		
95	24	25	26	27	29	30	31	33	34	35	37	38																			
100	24	26	27	28	29	31	32	33	35	36	38	39																			

WBGT > 40

Note: This table is compiled from an approximate formula which only depends on temperature and humidity. The formula is valid for full sunshine and a light wind

Step 1: If you DO NOT have a WBGT measuring device, measure the temperature and humidity so you can estimate the WBGT using Chart 1 above.
Note: This is only accurate in light wind and full sun conditions.
Step 2: Once you have determined an Estimated WBGT, use Table 1 above to see what activity modifications should be implemented.

<u>Recommended Preventative Strategies for Competitions:</u>
Competition Modifications.

- Unlimited supply of water at the site of each activity
- Move competition times to a cooler part of the day; early morning or early evening
- Meet with officials before the game to discuss any or all of the concerns and/or strategies.
- Use player substitutions more often during play
- A mandatory water time-out at the mid-way point of each half of play for both teams

- Extended halftime for players to recover/cool more completely, allow for teams to go to shaded areas
- Cold water/ice towels and/or fans should be used to cool players
- Recommend removal of helmets and other equipment during rest periods or stoppage of play.
- Have plenty of extra ice and water at the site in the event a player needs immediate first aid/cooling
- An on-site Cold Water Immersion (CWI) tub for emergent athlete immersion is required.
- Athletic Trainers/Coaches should be especially vigilant and monitor player's physical condition in extreme temperatures

***Hydration*:**

- Allow athletes unlimited access to water during practice/competition
- Keep in mind individual fluid needs vary. Each athlete should determine their individual need.
- Ensure an unlimited supply of water at the site of activity
- As the heat risk category increases, an increase in the number and duration of hydration breaks should be implemented, along with shortening practice time.

Clothing:

- Everyone must be made aware of the importance of:
    - Wearing appropriate clothing during play (wear light colors, wicking quick dry fabric)
    - How equipment influences one's ability to dissipate heat effectively.
    - Appropriate application and reapplication of SPF 30+ sunscreen

Factors Affecting Body Temperature Regulation: (* = Key Risk Factors for heat illness)

- Physical Effort Unmatched to Physical Fitness (Warrior mentality)*
- Increased WBGT*
- Hydration Status/Fluid Intake/Dehydration Greater than 3% body weight loss during the event*
- Sleep*
- Underlying Illness (Fever, Infection)*
- Body Mass Index (larger BMI greater risk)
- Age of Athlete (children/adolescent, elderly)
- Prior History of heat illnesses
- Unacclimatized athletes (early season, unusually high temps)
- Some medications and/or some medical conditions
- Heavy or "Salty Sweaters"
- High Temperature/humidity the previous participation day

HEAT ILLNESS

- *Exposure to prolonged or abnormal amounts of heat and humidity can be especially dangerous for young athletes who sweat less, adjust more slowly and produce more internal heat than adults.*
- *Remember: More water does not make it less hot!*
- *Exercise in a hot environment, with associated fluid loss and elevated body temperature, can lead to Dehydration, Heat Exhaustion, and Exertional Heat Stroke (EHS). EHS is a preventable, potentially fatal condition and must be treated immediately.*

- *Children who take certain medications, have chronic health problems or are overweight may be more susceptible to heat illness.*

Heat Illness Definitions

Dehydration

- *Fluid loss occurs during exercise, due to perspiration and respiration.*
- *It makes an athlete more susceptible to fatigue and muscle cramps. Inadequate fluid replacement before, during, and after exercise will lead to excessive dehydration and may lead to other heat illnesses.*
    - *Treatment: Fluid replacement before, during, and after activity until urine is a light lemonade color and until the individual has replaced fluid losses within 2% of their pre-exercise body weight.*

Heat Exhaustion

- *Dehydration can lead to heat exhaustion and an inability to sustain adequate cardiac output.*
- *Symptoms include:*
- *- Fatigue, weakness - Headache, dizziness -Pale, clammy, sweaty skin - Loss of endurance/skill - Light-headedness -Nausea*
- *Athletes will pass little urine, which will be highly concentrated.*
- *Muscle cramps may be associated with heat exhaustion*
    - *Treatment: Cool athlete in shade or air conditioning, ice towels, remove equipment, and elevate legs. Fluid replacement before, during, and after activity until urine is a light lemonade color and until the individual has replaced fluid losses within 2% of their pre-exercise body weight.*

Exertional Heat Stroke

- *Severe overheating and thermoregulatory failure may lead to exertional heat stroke.*
- *More or Large amounts of water do not prevent heat stroke*
- **HEAT STROKE is LIFE-THREATENING and PREVENTABLE!**
- ***Diagnosis:*** *Accurate temperature measurement, via rectal thermometry,* (performed by a qualified healthcare professional*) is best practice. Exertional heat stroke is suspected if body temperature is higher than 104 degrees Fahrenheit and/or signs of central nervous system dysfunction are present (i.e. disorientation, confusion, dizziness, irritability, headache, inability to walk, loss of balance or muscle function, vomiting, diarrhea, loss of consciousness).*
    - Treatment: In the event of potential Exertional Heat Stroke (EHS), each school participating in interscholastic sports is required to be properly prepared and equipped to initiate Cold Water Immersion (CWI) or equivalent* whole body cooling techniques and EMS concurrently contacted, noting that the focus is to cool first and then transport second. The water should be aggressively stirred during the cooling process. The water temperature of the CWI tub should be between 35*F and 59*F.
    - * Equivalent cooling modalities include rotating cold/wet towels covering the entire body every 60-90 seconds, Tarp Assisted Cooling, and placing the athlete in a cold shower.
- Cold water immersion (usually understood as circulating, ice-water immersion) is considered the most effective strategy for rapid treatment of exertional heat stroke. The goal in any exertional

heat stroke case should be to cool the athlete down to 102 degrees (via rectal thermometry) Fahrenheit within the first 30 minutes after collapse, prior to Emergency Medical Services (EMS) transport. These best practices shall be carried out by a licensed athletic trainer, designated healthcare provider, or EMS provider.

- The cooling modality is required to be set up at all warm weather practices and competitions, but should also be readily available if the need arises.

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:
    - Activity should first begin in a cool environment
    - Once the patient has shown success with exercise in a cool environment, the patient should then complete the heat acclimatization protocol (above) for progression back into exercise in a warm environment.
    - Body temperature monitoring may be recommended during the first 1-2 weeks for those returning from EHS episodes.

Section 3. AEDs

(To go into effect Fall 2025)

Each VPA member school that has an interscholastic athletics program is required to have at least one functional automated external defibrillator on site at each school at all times. The AED must be easily accessible during any school-related function, including athletic practices, athletic competitions, and other occasions where students and others will be present, for use during emergencies. For all school-sponsored athletic activities taking place off school grounds, an AED must be on-site as close to the event or practice activity as possible. A person or entity that acquires an automated external defibrillator shall comply with all regulations governing the placement of an automated external defibrillator. AEDs must also be registered with Emergency Medical Services in accordance with Vermont state law.

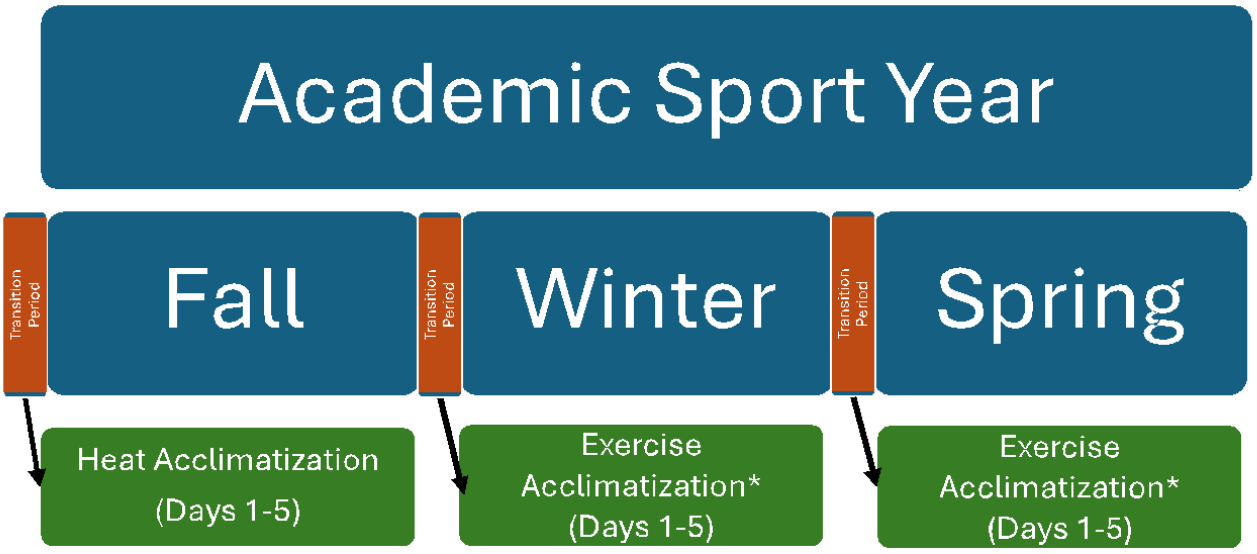
All coaches are required to have successful completion of CPR/AED training before coaching and maintain current CPR/AED hands-on training per VPA Coach Education guidelines.

AED Location and Placement Regulations:

1. The AED should be used in conjunction with enacting the EMS system.
2. AED should be stored in a safe place.
3. All athletic trainers, coaches, administrators, school nurses and physical education teachers should have access to an AED on the school property.
4. Institutions sponsoring athletic events/activities should have an AED onsite (or access to one) at each athletic venue for practices, games or other athletic events.
5. An AED must be located within three minutes of the location of any athletic activity

and available at any time.
6. The location of the AED should be well-marked, publicized, accessible, and known among all trained staff.
7. The AED should only be used after enacting the EMS system.
8. AEDs should be inspected regularly following manufacturer guidelines to ensure proper working order. This includes making sure the batteries are charged, wires and electrodes have not expired, and are in good condition. Thorough documentation of routine inspection of these devices is strongly encouraged.

Section 4: Heat Acclimatization
(To go into effect Fall 2025)



***Transition period is defined as**: The first 5 days of any new conditioning cycle or new physical activity
Additional Transition Periods may be needed for individual athletes throughout the course of the season due to sickness or injury (including but not limited to return to sport from any circumstance that has caused a removal from sport for 14 or more consecutive days. For example: an athlete is sick and has been removed from sport for ≥14 days OR an athlete is returning from surgery (≥14 days away from organized practice).

Reference: Caterisano A, Decker D, Snyder B et al. CSCCa and NSCA joint consensus guidelines for transition periods: safe return to training following inactivity. Strength and Conditioning Journal. 2019;(3)41:1-23.

Heat Acclimatization (Days 1-5)

- **During the first five (5) days of any athlete's participation, it is required that participants do not engage in more than one practice per day.** Student-athletes who begin practice with a team after the start of official practice will be required to follow this same five (5)-day procedure. An official practice is defined as one continuous period of time in which a participant engages in physical activity.

- It is required that each practice be no more than three hours (3 hours) in length. On days when two practices are conducted, it is required that either practice not exceed three (3) hours in length and student-athletes not participate in more than five (5) total hours of practice activities on these days, Warm-up, stretching, and cooldown activities are included as part of the official practice time.
- A walk-through is permitted during Days 1-5 of the acclimatization period. However, a 3-hour recovery period is required between the end of practice and the start of the walk-through or vice-versa. A walk-through is not permitted on days that have two (2) official practices.
- The first two (2) days of practice are restricted to helmets only, days 3-5 can introduce shoulder pads with shorts, and then beginning day six (6) of practice, full gear can be utilized and body-to-body contact is permitted.
- Student-athletes who begin practice with a team after the start of official practice will be required to follow this same 6-day procedure. During the initial five (5) days, the use of arm shields, tackling and blocking dummies, sleds, and other devices can be used for instructional purposes, however, deliberate body-to-body contact is prohibited.
- Beginning Day six (6) it is required that any double practice days must be followed with a single practice day so that there are not two consecutive days with double practices. This means that a day consisting of two practices should be followed by a day with only one practice. On a day consisting of two practices, the two practices must be separated by at least three (3) hours of continuous rest in a cool environment. One walk-through session may be added to a day with a single practice session, with a minimum of three (3) hours of continuous rest time between the practice and walk-through.

Area of Practice Modification	Practices 1-5		Practices 6-14
	Days 1-2	Days 3-5	
# of Practices Permitted Per Day	1		2, only every other day
Maximum Duration of Single Practice Session	3 hours		3 hours (a total maximum of 5 hours on double session days)
Permitted Walk Through Time (not included as practice time)	1 hour (but must be separated from practice for 3 continuous hours)		
Contact	No Contact	Contact only with blocking sleds/dummies	Full, 100% live contact drills

Section 5: Exercise Acclimatization

(Days 1-5)

- Conditioning periods should be phased in gradually and progressively to minimize risk of injury during transitional periods. **The first 5 days of any new conditioning cycle or new physical activity** (including but not limited to return to sport from any circumstance that has caused a removal from sport for 14 or more consecutive days) are referred to as transitional periods.
- New conditioning activities should be phased in gradually, especially during the early stages of a conditioning period.
- If no previous strength and conditioning history exists, default to the most conservative workload from other athletes. See the Progressive introduction of strength and conditioning example:

Week	Reduction From Previous Peak Conditioning*	Reps	Work: Rest Ratio	EXAMPLE (sprint/drill based)	
				Sprint/Rep Time (will vary by athlete)	Rest time (varies by rep time)
1	50%	5	1:4	10 seconds	40 seconds
2	30%	7	1:3	10 seconds	30 seconds
3	20%	8	1:2	10 seconds	20 seconds
4	10%	9	1:2	10 seconds	20 seconds
5	none	10	1:1	10 seconds	10 seconds

*If no previous strength and conditioning history exists, default to the most conservative workload from other athletes.

- Exercise and conditioning activities should be consistent with daily training objectives and are not permitted to be used as discipline/punishment or put the student athlete's physical, social, or psychological health at risk.
- All exercise and conditioning activities are required to have appropriate supervision (ie. coach trained and rehearsed in CPR/AED with education on the prevention of sudden death in sport, or an athletic trainer on site).