HEAT

41.4 HEAT ACCLIMATIZATION & EXERTIONAL HEAT ILLNESS MANAGEMENT POLICY

41.4.1 It is the position of the AIA that prevention is the best way to avoid exertional heat stroke. Prevention includes educating athletes and coaches about:

1. Recognition and management of exertional heat illness;
2. The risks associated with exercising in hot, humid environmental conditions;
3. The need for gradual acclimatization over a 14 day period;
4. Guidelines for proper hydration;
5. Implementing practice/competition modifications according to local temperature and relative humidity readings.

41.4.2 **Definitions**

Exertional heat illness includes the following conditions, ordered from the least to the most dangerous:

1. Exercise associated muscle cramps: an acute, painful, involuntary muscle contraction usually occurring during or after intense exercise, often in the heat, lasting approximately 1-3 minutes.
2. Heat syncope: also known as orthostatic dizziness, it refers to a fainting episode that can occur in high environmental temperatures, usually during the initial days of heat exposure.
3. Exercise (heat) exhaustion: the inability to continue exercise due to cardiovascular insufficiency and energy depletion that may or may not be associated with physical collapse.
4. Exertional heat stroke: a severe condition characterized by core body temperature > 40°C (104°F), central nervous system (CNS) dysfunction, and multiple organ system failure induced by strenuous exercise, often occurring in the hot environments.

Heat Acclimatization Protocol
(A team may not choose to train in a less severe climate)
Days 1 – 5:

- Days 1 through 5 of the heat-acclimatization period consist of the first 5 days of formal practice. During this time, athletes may not participate in more than 1 practice per day.
- If a practice is interrupted by inclement weather or heat restrictions, the practice should recommence once conditions are deemed safe. Total practice time should not exceed 3 hours in any 1 day. In additional to practice, a 1-hour maximum walk-through is permitted during days 1-5 of the heat acclimatization period. However, a 3-hour recovery period should be inserted between the practice and walk-through (or vice versa). (Note: A walk-through is defined as no contact with other individuals, dummies, sleds or shields).
- During days 1-3 of the heat-acclimatization period, in sports requiring helmets or should pads, a helmet is the only protective equipment permitted. The use of shields and dummies during this time is permissible as a non-contact teaching tool.
- During days 4-6, only helmets and shoulder pads may be worn.
- Football only: on days 4-6, contact with blocking sleds and tackling dummies may be initiated.

Days 6 – 14:

- Beginnings no earlier than day 6 and continuing through day 14, double-practice days must be followed by a single-practice day.
- On single-practice days, 1 walk-through is permitted, separated from the practice by at least 3 hours of continuous rest. When a double-practice days is followed by a rest day, another double-practice day is permitted after the rest day.
- On a double-practice day, neither practice should exceed 3 hours in duration, nor should student athletes participate in more than 5 total hours of practice. Warm-up, stretching, cool-down, walkthrough, conditioning and weight-room activities are included as part of practice time. The 2 practices should be separated by at least 3 continuous hours in a cool environment.
- Beginning on day 7, all protective equipment may be worn and full contact may begin.
- Full-contact sports may begin 100% live contact drills no earlier than day 7.
- Because the risk of exertional heat illnesses during the preseason heat-acclimatization period is high, we strongly recommend that an athletic trainer be on site before, during and after all practices.

41.4.3 **Hydration Strategies**

- Sufficient, sanitary and appropriate fluid should be readily accessible and consumed at regular intervals before, during and after all sports participation and other physical activities to offset sweat loss and maintain adequate hydration while avoiding overdrinking.
- Generally, 100 to 250 mL (approximately 3– 8 oz) every 20 minutes for 9- to 12-year-olds and up to 1.0 to 1.5 L (approximately 34 –50 oz) per hour for adolescent boys and girls is enough to sufficiently minimize sweating-induced body-water deficits during exercise and other physical activity as long as their pre-activity hydration status is good.
- Pre-activity to post-activity body-weight changes can provide more specific insight to a person's hydration status and rehydration needs. Athletes should be well-hydrated before commencing all activities
- (see guideline box format)
- The following guidelines are suggested:

Condition	% Body Weight Change
Well Hydrated	+1 to -1
Minimal dehydration	-1 to -3
Significant dehydration	-3 to -5
Serious dehydration	> -5

% Body weight change = [(pre-exercise body weight – post-exercise body weight) / pre-exercise body weight] x 100

41.4.4 **Return to Play Following Exertional Heat Stroke**

The following is the protocol for return to play following heat stroke:

1. Refrain from exercise for at least 7 days following the acute event.
2. Follow up in about 1 week for physical exam by licensed physician (MD, DO)

3. When cleared for activity by a licensed physician, begin exercise in a cool environment and gradually increase the duration, intensity, and heat exposure for 2 weeks to acclimatize and demonstrate heat tolerance under the direction of a licensed healthcare professional.
4. If return to activity is difficult, consider a laboratory exercise-heat tolerance test about one month post incident.
5. Athlete may be cleared for full competition if heat tolerance exists after 2 – 4 weeks of training.

The AIA also recommends that any athlete suspected of having suffered exertional heat exhaustion be referred to a licensed physician for follow-up medical examination and clearance.