

### 3 Pillars of Exertional Heat Stroke Survival

- **Recognition**
  - Exertional heat stroke is defined as a body temperature greater than 104 °F in addition to signs of CNS dysfunction (dizziness, collapse, loss of consciousness, confusion, mood changes etc.).
  - Early warning signs of exertional heat stroke include headaches, dizziness and nausea. If these signs are detected early and the individual is allowed to bring their body temperature down, future problems may be avoided.
  - Any athlete experiencing signs of CNS dysfunction during intense exercise in the heat should be considered to be suffering from exertional heat stroke.
  - A rectal temperature is the only viable field option to assess body temperature in an exercising individual. Aural, oral, tympanic, axillary and forehead measurements have all been shown to not be effective for measuring body temperature in exercising individuals.
- **Treatment**
  - Cold-water immersion should be used to cool any exertional heat stroke patient due to its superior cooling ability.
  - To ensure survival, cooling tubs should be setup prior to any event involving exercise in the heat. This works best if tubs are filled with water with ice available nearby. Tubs should be large enough to accommodate the full-immersion of a large individual.
  - An individual with exertional heat stroke should be cooled to 102°F within 30 minutes. For many individuals they will start at 106-110°F and cool 1°F every 3 minutes, if cold-water immersion is utilized. Therefore, cooling can take up to 20 minutes, making rapid treatment decisions critical.
  - If cooling is available on-site the individual with exertional heat stroke should be cooled prior to transportation to a hospital.
- **Return-to-play**
  - An athlete who survives exertional heat stroke should be fully evaluated by a physician prior to return-to-play.
  - Prior to return-to-play the individual who suffered an exertional heat stroke should demonstrate the ability to tolerate exercise in the heat.
  - Athlete's who have sustained an exertional heat stroke likely had a predisposing factor at the time of their injury. Predisposing factors should be identified and remediated before returning an athlete to activity.
  - Return-to-play should be gradual and medically monitored throughout. When medically cleared, exercise should begin at a low intensity in a temperate environment. The athlete then can progress intensity in a temperate environment if no complications persist. The athlete should then perform the same progression of intensity in a hot environment before they are allowed to return-to-play.