Building Blocks of Clinical Practice
Helping Athletic Trainers Build a Strong Foundation
Issue #10:
Treatment of Heat Illness

General Considerations
- Cold water immersion should be set up prior to any high risk event
- Follow a proper heat-acclimatization program to reduce the risk of exertional heat illness
- Monitor environmental conditions on a regular basis, promote and monitor proper hydration
- Should an emergent situation occur, be prepared to initiate emergency action plan
- Be sure to follow state regulations when communicating about your patient with heat related illness and administering treatment to them

Heat Exhaustion (Urgent Condition)
- Remove patient from heat to a cooler, shaded environment
- Remove excess clothing and equipment
- If available, obtain a core body temperature to rule out heat stroke
- Cool the patient with fans and/or ice towels
- Elevate the patient’s legs
- Monitor vital signs
- Provide fluids for the patient to rehydrate
- If patient does not improve within five minutes, treat as exertional heat stroke
- Initiate emergency action plan as needed

Heat Stroke (Emergent Condition)
- If heat stroke is suspected, immediately remove the patient from activity to a cooler, shaded area
- Initiate emergency action plan
- If available, obtain and monitor core body temperature
- Immediate on-site cold water immersion is STRONGLY recommended if heat stroke is suspected
  - cold water immersion is the gold standard for heat stroke treatment
  - survival from exertional heat stroke depends on rapid cooling of the patient
  - individuals tend to cool an average of about 1°F every three minutes during cold water immersion
- Return to play following physician clearance

Exertional Sickling (Emergent Condition)
- Withdraw the athlete with sickle cell trait from exercise if he/she shows any signs and symptoms of exertional sickling
- Initiate emergency action plan
- Monitor vital signs
- Provide supplemental oxygen (15 L/min with a non-rebreather mask)
- If vital signs decline:
  - have AED accessible
  - if available, initiate an IV of normal saline
  - transport to hospital
  - call ahead for hospital to prepare for explosive rhabdomyolysis
- Return to play following physician clearance

Hyponatremia (Emergent Condition)
- If hyponatremia is suspected, do NOT provide fluids or IV normal hypotonic saline until blood sodium is evaluated
- Mild hyponatremia: blood sodium 130-135 mEq/L
  - restrict fluids and consume salty foods
  - continue this until diuresis and correction of blood sodium
- Severe hyponatremia: blood sodium < 130 mEq/L and deteriorating mental status
  - IV hypertonic saline (3% to 5%) until blood sodium reaches 128-130 mEq/L
  - serial measures of blood sodium
  - transport to hospital
- Return to play following physician clearance and a plan to prevent further episodes
Cooling Techniques to Manage Heat Illness

- Cold water immersion
- Rotating wet ice towels over the entire body
- Dousing with cold water (e.g., cold shower)
- Fanning patient

Step-by-Step Cold Water Immersion

- Ice should be added to the tub as soon as heat stroke is suspected
- Insert thermometer probe for measuring rectal temperature, if available
- Using as many people as possible, lift the patient into the tub
- Some patients may become aggressive and will need to be restrained in the tub
- Immerse as much of the body as possible
- Support the patient in the tub by looping a towel under his/her arms
- Cover the patient’s head with a wet towel that is changed every 2-3 minutes
- Stir the water and monitor the patient’s temperature continuously
- Remove patient when his/her rectal temperature is 102° F
- If core/rectal temperature is not available, cool for 15 minutes
- Continue to monitor patient’s temperature during recovery as his/her temperature may continue to drop

References