Safety/Procedures/EAP

West Raleigh Coaches Acute Injury/Illness Management Protocol

- **Injury/Illness Assessment/Management Tenants**
  - **Inherent to the nature of baseball games and practices, injured or ill players are often initially seen and evaluated by their coaches.**
  - **Coaches should use their best judgement in all of these instances.**
  - **Coaches should avoid trying to diagnose or manage injuries or illness beyond their individual comfort and expertise.**
  - **Coaches should involve parents ASAP in any cases deemed to be serious or warranting additional formal medical attention.**

- **First Aid**
  - When administering first aid, the coach should not exceed the scope of his or her training. The purpose of first aid is to merely stabilize the situation and provide basic care (ice, band aid, basic comfort, etc). Cases warranting more advanced treatment should be deferred to a medical professional.

- **Medical emergency**
  - **In situations of suspected medical emergency, coaches should immediately refer to the West Raleigh Emergency Action Plan and proceed accordingly.**
  - **If indicated, do not delay in calling 911 and/or obtaining the AED (mounted between the bathrooms at the concession stand) and providing CPR.**

- **Notification of parents**
  - Parents should be notified immediately is there is a treatable injury.

- **Return to play**
  - Once a player has suffered an injury that requires medical treatment by a doctor or other medical provider, the decision regarding the appropriate time to return to play should be made by that medical provider.
  - It is the responsibility of the parents to provide appropriate documentation/communication regarding return-to-play recommendations from the medical provider.

- BOTH parents and the coaches should be comfortable with the child returning to play before he or she is allowed to return to practice or game play.

Heat Illness Prevention, Recognition, and Management

Josh Bloom, MD, MPH

Introduction

Problems related to heat and hydration impact athletes of all ages and ability levels. Heat illness can vary from mild to life-threatening. Fortunately, with awareness, proper planning and preparation, heat illness can be avoided.

Exertional Heat Illness

Exertional Heat Illness (EHI) typically, but not always, occurs with strenuous physical activity in humid and hot environments. Several conditions such as lack of acclimatization, deconditioning, obesity, dehydration, concomitant illness, certain medications, occlusive equipment, previous heat illness, certain medical conditions can predispose athletes to exertional heat illness even in more mild conditions.

Exertional heat illness can be categorized as follows:

- Muscle cramps
  - Painful involuntary muscle contraction (often starting in calves, hands or feet) often associated with dehydration, electrolyte imbalances, and muscle fatigue.
- Heat exhaustion
  - Inability to continue to exercise due to fatigue/energy depletion
  - Associated with heavy sweating, dehydration, sodium loss, and energy loss.
  - Often presents with signs and symptoms such as: dizziness, headache, nausea, diarrhea, decrease in urine output, pallor (pale

skin), muscle cramps, weakness, headache, hyperventilation (breathing rapidly), nausea, and/or diarrhea.
    - Core (rectal) temperature generally between 97 deg F and 104 deg F.
- Exertional Heat Stroke (EHS)
    - *Life-threatening illness* is characterized by: 1) core (rectal) temperature >104 F (40 C) and 2) central nervous system (CNS) dysfunction (confusion, mental status changes, collapse, delirium, etc).
    - Signs and symptoms include: Mental status changes (confusion, delirium, loss of consciousness), collapse, hyperventilation (rapid breathing), vomiting, diarrhea, seizures (convulsions), rapid heart rate, hypotension (low blood pressure), and decreased sweating (although skin can be either wet or dry).

Prevention

- When possible, identify athletes at risk for heat illness.
    - Some at-risk athletes include: obese athletes, catchers, athletes on stimulant or other 'thermogenic' medications or supplements (such as ADD medication), deconditioned ('out of shape') athletes, athletes with prior history of EHI, athletes without appropriate acclimatization, athletes who have a current or recent illness (particularly with a fever), athletes with sickle cell trait.
- Encourage athletes to gradually acclimatize to heat and humidity.
    - This is best done by gradually increasing *duration of exposure to heat/humidity* and the *intensity of exercise* in the heat over a matter of many days.
    - Initially, begin with short, lower intensity practices/training and allow for more frequent and longer rest and recovery between exercise longer recovery
    - Focus on instruction rather than conditioning during the first several practices
    - During hot/humid times of the year, practice at cooler times of day (morning and evening).
    - During extreme conditions, consider indoor practices (which can include cage work, bullpens, indoor fielding drills, etc).

- Encourage all athletes (and umpires) to hydrate regularly before, during, and after exercise *(link to Ronai hydration article).*
- With young athletes it is extremely important to take frequent rest breaks and to ingest fluids every 15 to 30 minutes. Young athletes are at increased risk of heat illness.
- During hotter and more humid conditions, minimize clothing and/or equipment.
- Fluids and drinking opportunities should be unlimited during games and practices, particularly during hot, humid conditions. NEVER withhold water from athletes.
- Make efforts to have Certified Athletic Trainer (AT) available at games, tournaments, and practices when possible.
- If and when possible, check pre- and post-practice/game weights during hot/humid conditions (an athlete who is not within 3% of the previous pre-practice weight should not be allowed to participate until they are appropriately hydrated) – *not sure we need for baseball??*
- When possible, the AT or event personnel should ideally use a wet-bulb globe temperature (WBGT) or heat index daily to determine heat/humidity conditions for the day. Game and/or practice restrictions should be based on the readings of the WBGT or the heat index *(refer to the charts below - link)* to help make decisions regarding practices and games. The AT or event personnel should check the readings at least 30 minutes prior to competition and/or practices. Based on the initial reading for the day and the predicted high temperature for the day, the AT will continue to use the WBGT throughout the day if needed. On higher risk days, the AT will generally check the WBGT every two hours during peak times (i.e. 10 am to 6 pm). The AT or on site medical personnel should work in conjunction with the site event coordinator to determine any restrictions.
- When warranted by environmental conditions, the AT or event medical personnel should:
    - Provide ice towels in dugouts
    - Prepare cold water/ice immersion tubs *(link to cold water immersion tub instructions - http://ksi.uconn.edu/ksi/assets/File/CWI%20cooling%20guidelines.pdf).*
- *Any coach, parent, or other staff member who detects an athlete (or umpire) with signs or symptoms suggesting possible heat-related illness should immediately report this to the athletic trainer or available medical personnel.*

Treatment

Once a potential heat illness has been identified by the AT, or suspected by coach or supervising adults, initiate the following course of action:

- Muscle cramps
    - Remove from activity and transfer to cool, shaded environment, immediately start replacing fluids, and stretch affected area.
- Heat exhaustion
    - Activate Emergency Action Plan if necessary (*link to EAP article*). Monitor closely.
    - Move to the shade and/or a cool environment. Use ice towels and/or ice bags (around neck, underarms, groin area) to cool body temperature down. Use ice immersion if available.
    - Assess vital signs and take a core temperature (rectal). Rectal temperatures are the only accurate on-field measurement (oral, tympanic, forehead thermometers are often inaccurate and can be misleading)
- Exertional Heat Stoke
    - Call 911/Activate Emergency Action Plan *(link)*
    - Assess vital signs and take core temperature (rectal).
    - Use ice water immersion to cool body temperature as quickly as possible *(link to cold water immersion tub instructions - http://ksi.uconn.edu/ksi/assets/File/CWI%20cooling%20guidelines.pdf).* Once core temperature returns to 101 deg F remove from the water, but continue to keep cool with ice towels, ice bags, or air conditioning. Do not transport prior to adequate core temperature cooling.
    - DO NOT hesitate to initiate aggressive cooling via ice immersion if Exertional Heat Stroke is suspected (even in the absence of accurate core body temperature). Rapid cooling is critical to preventing end-organ damage and often is a life-saving intervention.
    - Remember, **COOL FIRST, TRANSPORT LATER.**

Hydration *(link to hydration article)*

- Stress importance of hydration before, during, and after exercise. This should start even a few days prior to heat exposure and hydrating well the day/evening before is particularly important.
- During exercise continue to encourage athletes to drink as often as possible.

- Rehydration typically should include more than just water as athletes may drink more and benefit from some electrolyte repletion (eg combination of sports drink and water)
- Encourage participants to carry a water bottle at all times, at the field and away from the field.

Conclusion

Exertional heat illness can often be prevented and appropriately managed with attention and awareness of environmental conditions that predispose athletes to heat illness, taking appropriate common-sense preventive measures, and rapidly recognizing and treating athletes who show signs or symptoms of heat illness.

References

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12. United States National Oceanic and Atmospheric Administration. Heat Index Chart. Accessed February 13, 2015.

WBGT READING	ACTIVITY GUIDELINES & REST BREAK GUIDELINES
Under 82.0	Normal activities--Provide at least three separate rest breaks each hour of minimum duration of 3 minutes each during workout
82.0 - 86.9	Use discretion for intense or prolonged exercise; watch at-risk players carefully; Provide at least three separate rest breaks each hour of a minimum of four minutes duration each
87.0 - 89.9	Maximum practice time is two hours. For Football: players restricted to helmet, shoulder pads, and shorts during practice. All protective equipment must be removed for conditioning activities. For all sports: Provide at least four separate rest breaks each hour of a minimum of four minutes each
90.0 - 92.0	Maximum length of practice is one hour, no protective equipment may be worn during practice and there may be no conditioning activities. There must be 20-minutes of rest breaks provided during the hour of practice
Over 92.1	No outdoor workouts; Cancel exercise; delay practices until a cooler WBGT reading occurs

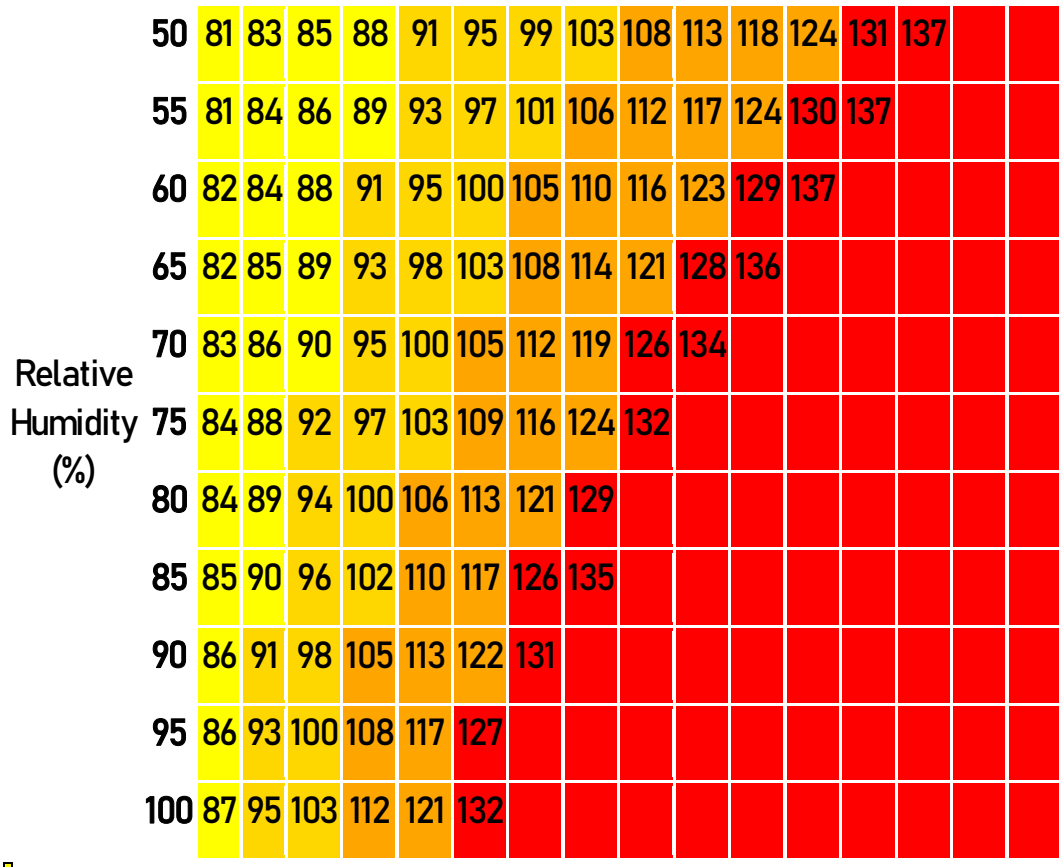
Georgia High School Athletic Association

Heat Index table is from the U.S. National Oceanic and Atmospheric Administration.

NOAA national weather service: heat index

temperature (°F)

	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	



Sidebar/box:

Signs and symptoms of heat illness can include one or more of the following:

- -excessive fatigue
- -dizziness
- -headache
- -nausea/vomiting
- -decrease in urine output
- -pale skin
- -muscle cramps
- -weakness
- -elevated core body (rectal) temperature
- -hyperventilation (rapid breathing)

-confusion/delirium/mental status changes
-seizures
-collapse
-low blood pressure
-rapid heart rate

Sidebar/box:
Heat Illness Key Points:

1. Heat illness is common in athletes. It usually, but not always, occurs in hot and humid conditions.
2. Heat illness can be prevented by *acclimatization to hot/humid conditions*, *adequate hydration* (before, during, and after exercise), and *awareness/early recognition of heat stress*. Remember to hydrate 'all week long' during hot/humid times of year.
3. Identify athletes at risk for heat illness.
4. Monitor environmental conditions with *Wet Bulb Globe Thermometer* or *Heat Index*.
5. Exertional Heat Stroke is a medical emergency and should be suspected in any athlete with mental status changes (confusion, collapse, delirium) and elevated core body temperature (>104).
6. Treatment for Exertional Heat Stroke is immediate cooling! This is best done in a cold water immersion tub. Cooling should not be delayed for transportation to the hospital. Remember: cool first, transport later.
7. Rectal temperatures are the only accurate way to measure core body temperature on the field.
8. If rectal thermometer is not available, do not hesitate to initiate cooling measures if heat illness is suspected.

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Carolina
FAMILY PRACTICE & SPORTS MEDICINE

Emergency Action Plan

West Raleigh Baseball Exchange Club Park

West Raleigh Baseball Association

Emergency Personnel: Coaches and parents

Emergency Communication: Personal cell phone of coaches; email league@westraleighbaseball.org

Emergency Equipment:

- Basic First Aid supplies (basic bandages/bandaids, ice packs, Benadryl)
- AED (located on the outside of the main building near the concession stand between bathrooms)

Roles of First Responders/Medical Personnel:

1. Immediate care of the injured or ill athlete by the coach present.
2. Send designated coach or parent to retrieve AED & activate EMS.
   a. Use cell phone to call 911.
   b. Provide name, location, number of individuals involved, condition of injured individual(s), first aid treatment provided, specific directions to location.
      i. West Raleigh Exchange Club Park
      830 Barringer Drive

Raleigh, NC 27606

c. Send designated coach and/or parent to meet EMS at the park entrance.
d. EMS vehicles should enter/exit via primary entrance and drive to involved field/location of individual. Area directly in front of Concession Stand should remain clear at all times to allow appropriate emergency vehicle access.

3. The coach present should stabilize the athlete as best as possible.
4. **DO NOT move the athlete.**
5. Assess ABC's (airway, breathing, circulation) and provide information to 911 dispatch.
6. Initiate necessary first aid, CPR/Rescue Breathing, AED use.
7. Continue to monitor until EMS arrives.

Warm-up Safety Guidelines

Most of you by now have heard about the terrible incident in Wilmington where an 11 year old that was pitching BP, hit by a ball and died from it. **Effective immediately**:

- **No child under the age of 16 is permitted to throw BP (no exceptions)**
- Anyone swinging a bat, whether BP, soft-toss, tee, etc. **must wear a helmet**
- Any player throwing soft toss, helping with tee practice or otherwise around kids swinging bats **must wear a helmet**
- BP, soft-toss and tee practice are **only permitted is designated areas;** bats are not to be swung anywhere else except at the plate and on deck (and those swinging on deck must be careful as well)

Nothing is worth risking the safety of our kids. Please be extra vigilant in enforcing these rules.

Important Arm Care Information

Major League Baseball and USA Baseball recently released a program addressing arm safety in youth baseball called "Pitch Smart." This program explains risk factors for arm injuries in youth baseball players and outlines strategies to prevent these injuries. It is

extremely informative. Please take a few minutes to review the information on the PitchSmart website.

A couple key points:

- Winter time (right now) is the logical time to rest the arms from throwing competitively.
- As a general rule for injury prevention, as well as for athletic development, we encourage young athletes to play multiple sports and avoid specialization at an early age.
- When players/teams start gearing back up for their spring season, a gradual ramp up of throwing (intensity and distance) over a few weeks is important to prevent some early season arm injuries. Your coaches will provide input on this during the pre-season WR baseball clinic this winter and also will help direct this during the start of the spring season.

Sudden Cardiac Arrest

Coaches and parents, please review this FREE module on Sudden Cardiac Arrest in athletes. It is short (less than 10 minutes), but thorough and clear. It does require you to sign-up/register with the NFHS (National Federation of State High School Associations) which is a very quick, simple and entirely free process.

NFHS Learning Center: Sudden Cardiac Arrest

Preseason start-up throwing program

In sports medicine, we frequently see arm injuries in two major time-frames. The first, and most common, are the *classic overuse injuries*, and are generally caused simply throwing too much. These injuries typically occur during the middle or late in the season and are due to the cumulative stress and fatigue of throwing overcoming the arm's ability to recuperate. Several factors can help prevent many of these injuries including: avoiding throwing with arm fatigue or arm pain, strict adherence to pitch counts (as mandated at West Raleigh), good throwing mechanics, and a common sense approach by coaches and parents to general arm care.

Another relatively frequent, but less talked-about, problem is the *early season arm injury*. These are typically caused by throwing 'too much, too fast.' These injuries are often seen the first few weeks of baseball season when young athletes are trying to throw hard, fast, and long before their arms are properly conditioned and ready to throw. This can occur as early as tryouts or first practices as young ballplayers try to impress coaches and teammates. These injuries can typically be averted by allowing the arm to become acclimated to throwing over a period of a few weeks with gradual progression in load, intensity, and volume of throwing. This can be accomplished by a '*pre-season interval throwing program*.'

The following is a sample of youth interval, preseason throwing program. A good time to start this program is mid to late January to enable 4-6 weeks or so of good arm conditioning prior to start of regular practices. I recommend throwing every other day for these four weeks. Remember, a dynamic warm up will allow you to 'warm up the body before you warm up the arm.'

Click to view the Preseason Interval Throwing Program.

-Josh Bloom, MD, MPH

Pitch Smart

http://m.mlb.com/pitchsmart/

Concussion Training

https://www.cdc.gov/headsup/youthsports/training/index.html

Safety Course

http://www.sportdev.org/ItemDetail?iProductCode=OCBFAID&Category=ONLINE&WebsiteKey=f50aacb2-a59e-4e43-8f67-29f48a308a9e

Concussion Recognition

https://www.cdc.gov/concussion/HeadsUp/pdf/Baseball_Clipboard_Sticker.pdf