



# **G<sup>®</sup>BEAT THE HEAT**

**2014 HEAT SAFETY KIT**



# PREVENTING HEAT-RELATED ILLNESSES

## HEAT ILLNESS AND EMERGENCIES

Many factors contribute to heat-related illnesses, which can occur when an individual is subjected to extreme temperatures and humidity, is unable to cool down or is dehydrated. At the onset of heat illness, it's more difficult for an athlete's body to properly cool itself and function, taking a toll on his or her performance.

## TYPES OF HEAT ILLNESS

- **Heat Cramps:** This type of cramp is the tightening and spasms experienced in large muscle groups (e.g. quadriceps, hamstrings, etc.). It is often preceded by heavy sweating and large electrolyte losses, which may look like white residue on clothing, skin or equipment.
- **Heat Exhaustion:** Signs and symptoms include profuse sweating, dehydration, fatigue, lightheadedness, rapid pulse, low blood pressure and slightly elevated body temperature.
- **Heat Stroke:** Signs and symptoms include high body temperature – 104° F or higher – red, hot, dry or moist skin, nausea, vomit, incoherence, loss of consciousness, shallow breathing, weak pulse, mild shock, convulsion and possible death.

## CAUSES OF HEAT EMERGENCIES

Primary contributors to heat-related emergencies include:

- Heat and high humidity
- Extreme physical exertion
- Layered or rubberized clothing
- Inadequate fluid intake

## NOT ALL ATHLETES ARE ALIKE

Certain types of athletes might be at a higher risk for heat-related illness and should be monitored closely. Those risks include:

- Prior history of heat illness
- Obesity
- Medical history of gastrointestinal, diabetic, kidney or heart problems
- Recent [within 2 weeks] illness [upper respiratory, cold or flu virus]





# 10 TIPS TO HELP ATHLETES STAY SAFE IN INTENSE HEAT

- 1. ALLOW FOR ACCLIMATION** – While it can take 10–14 days for an athlete's body to adapt to the heat, acclimation should start two weeks before team practices begin. An athlete should start with 15–20 minutes of continuous exercise outside in the heat, and add 5–10 minutes each day.<sup>1</sup>
- 2. ADOPT A REHYDRATION STRATEGY** – Hydration helps reduce an athlete's risk of heat illness and can help the athlete maintain a high level of performance. Proactive steps athletes can take to avoid dehydration include:
  - Weigh in and out before and after activity
  - Drink enough fluid to minimize weight loss – for each pound [16 oz.] that is lost, he or she may need to consume 20 ounces after athletic activity to fully rehydrate  
[See page 4 for visual].
  - Check urine. If it's like pale lemonade, that's a sign of good hydration  
[See page 5 for visual].

## WEIGHT CALCULATION

Your weight before practice \_\_\_\_\_

Your weight after practice \_\_\_\_\_

Subtract them = \_\_\_\_\_

Multiply by 16 oz. = \_\_\_\_\_

Next practice add this much fluid.

For example, if you lost 2 lbs, add  
32 oz. of fluids.

- 3. DRINK UP** – Athletes should drink enough fluid to prevent dehydration without over-drinking. Flavored, cold, lightly salted sports drinks like Gatorade are important because sodium helps maintain the physiological desire to drink and helps retain the fluid consumed.
- 4. BUDDY UP AND KNOW THE SIGNS** – Encourage athletes to buddy up with a teammate and watch out for each other when it's hot and humid. They should know the signs and symptoms of heat illness, which can include:
  - Nausea
  - Headache
  - Weakness
  - Fainting
  - Poor concentration
  - Personality change
  - Flushed skin
  - Light headedness
  - Loss of muscle coordination
  - Fatigue
  - Vomiting
- 5. COOL THE BODY** – If experiencing heat illness, an athlete should take steps to cool the body, including lying in a cool place with legs elevated, applying cool, wet towels to the body and drinking cool fluids.
- 6. BE FLEXIBLE** – An important step in avoiding heat illness is adjusting practice or game length and intensity to the environmental conditions. If possible, athletes should avoid strenuous and high-intensity activities during the warmest time of day [10 am – 4 pm].

<sup>1</sup> Maughan RJ and Murray R. Sports Drinks: Basic Science and Practical Aspects, Boca Raton, FL: CRC Press, 2001; 7–8: 183–224.



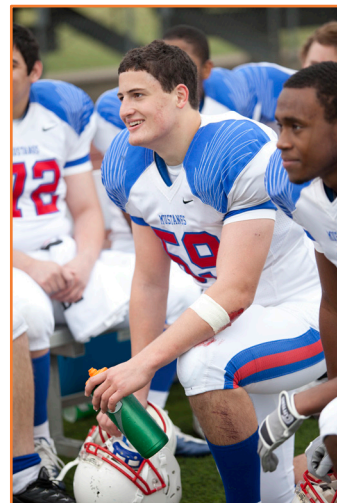
- 7. DRESS FOR THE WEATHER** – Keeping cool in hot weather means being mindful of appropriate clothing and equipment that can help evaporate heat from the body:



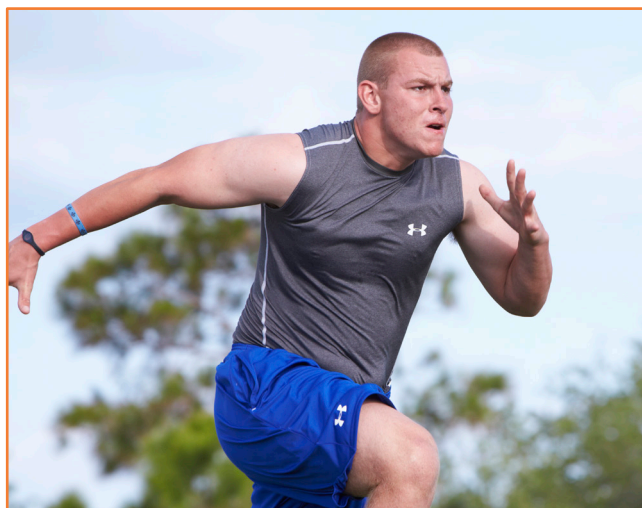
Wear light-colored clothing



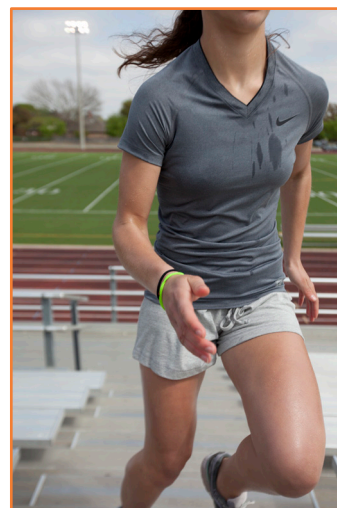
Wear t-shirts and shorts, not pads



Remove helmets when not active



Shed excess clothing when needed



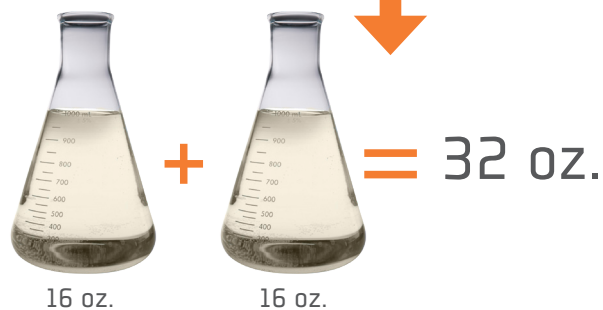
Change sweat-soaked clothing frequently

- 8. FIND TIME FOR RECOVERY** – Rest and recovery are an essential part of avoiding heat illness. Athletes should work in times for breaks when active throughout the day, attempt to get six to eight hours of sleep a night and sleep in a cool environment, if possible.
- 9. MAINTAIN A HEALTHY DIET** – Athletes need to think about fueling before, during and after physical activity. They should be fully hydrated with fluids and fueled with foods that contain electrolytes to maintain fluid levels. Fluids lost through sweat and breathing should be replaced by fluid consumption including during workouts, practices and games [physical activity].
- 10. HAVE AN EMERGENCY PLAN** – Have a plan to contact medical professionals in an emergency. Also keep a “cool pool” or ice bath nearby so medical personnel can choose to immerse athletes suffering from heat stroke if necessary.

# REPLACING LOST FLUID

An average 175 pound male athlete may lose 16 ounces of fluid an hour.

If he's practicing for two hours, he'll lose approximately 32 ounces of fluid.



For every 16 ounces of sweat lost, an athlete needs to consume 20 additional ounces after athletic activity to fully hydrate and keep the body safe.

If he loses 32 ounces during practice, he'll need to consume 40 ounces after athletic activity.



\*Sweat rate ranges are widely variable and to a degree, depend on several factors including environment and level of intensity.

Visit [www.gatorade.com](http://www.gatorade.com) for information on ways athletes can Beat the Heat.



# Are You Hydrated?



NO



YES

If your urine is pale like lemonade, that's a sign of proper hydration.

If it's dark like apple juice, you need more fluids.

Gatorade contains carbohydrates to provide energy and fluid and electrolytes to hydrate in ways that plain water can't.



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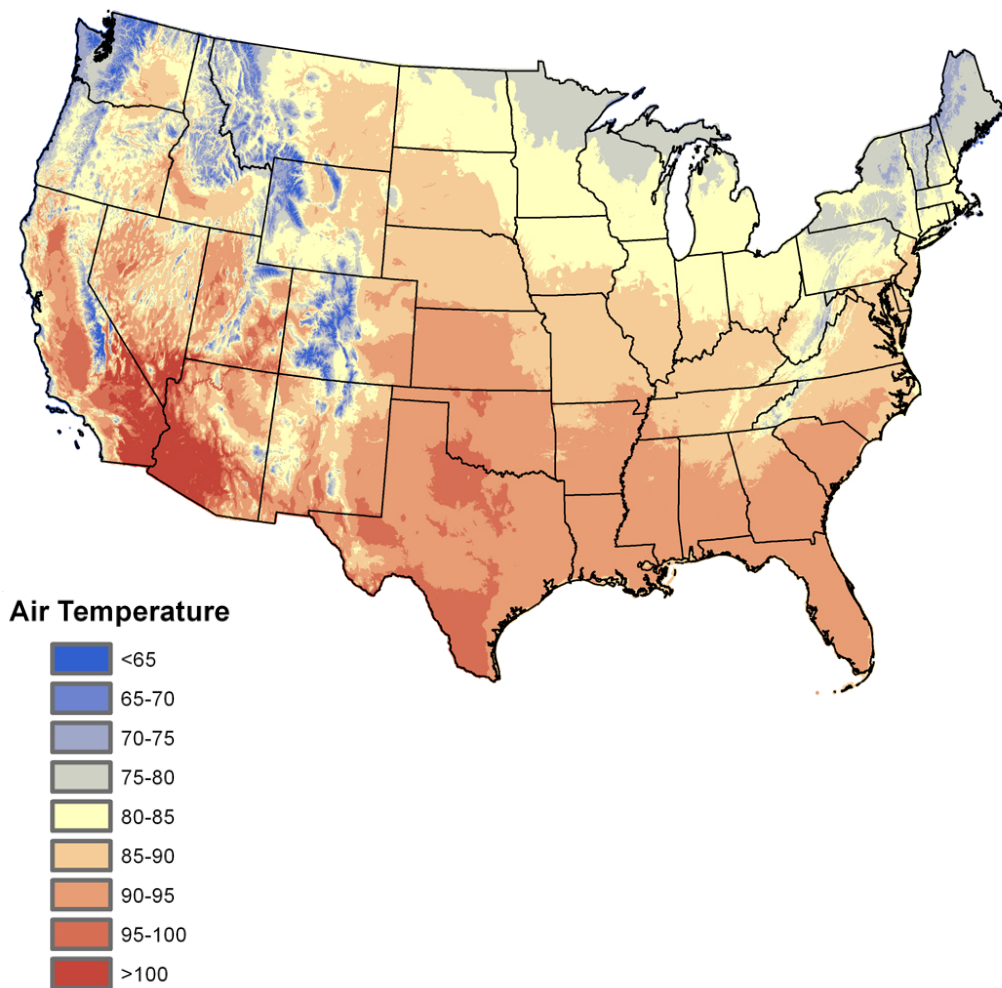




# HEAT IN U.S. HIGH SCHOOL SPORTS

As summer sports begin and temperatures rise, athletes become more susceptible to heat illnesses. Although most exertional heat illnesses occur in football, athletes in all sports nationwide are at risk.

The below map shows average U.S. temperatures captured from July 1981–2010. The risk for heat illness goes up in the 84–85 degree Fahrenheit range; this is where you see the steep climb in incidence.



Source data: "PRISM Climate Group, Oregon State University, <http://prism.oregonstate.edu>, created 12 May 2013



# HOW DO PRO ATHLETES BEAT THE HEAT?

"It's important to replenish electrolytes, important to get those fluids back in your body, so one, you can stay healthy and two, the performance is still there."

– LUKE KUECHLY, CAROLINA PANTHERS



"Lot of Gatorade. Lot of water. We weigh ourselves before and after every practice. We compare the numbers to make sure that we're doing what we need to do to replenish our bodies after practice. Every pound lost is worth twenty ounces of Gatorade or water, so we make sure to replenish accordingly."

– J.J. WATT, HOUSTON TEXANS

"One time I was really dehydrated in a game...My body pretty much just shut down on me. I kind of learned the hard way about the effect dehydration can have on you, so it's something I take very seriously as an athlete now."

– GRAHAM ZUSI, SPORTING KANSAS CITY

"I personally know what it feels like to be dehydrated...Gatorade is doing a great job of letting everybody know how to beat the heat and the things you need to do to stay hydrated."

– JASON WITTEN, DALLAS COWBOYS

