

Sports Medicine Monthly

Editor: Darren H. Lunow, M.Ed, ATC, LAT • Certified Athletic Trainer

Volume 1, Issue 1, August 2009

Why Don't Athletes Drink the Fluids They Need?



- Limited Access to Fluid:**
 If travel is involved, a tired athlete usually won't go.
Bring the fluid to the athlete, not the athlete to the fluid!
- Physiological Thirst Inhibition:** Satisfied thirst does not mean properly hydrated.
Drink by the numbers, not by the thirst!
- Fluid in the Stomach:** Most athletes do not want the feeling of being "water logged."
A little fluid in short time increments goes a lot farther than a lot of fluid very rapidly!
- Poor Quality of Available Fluids:** Luke warm, unflavored fluids discourage hydration.
Use the fluids to encourage hydration!
- Lack of Education:** Some athletes just don't know what to do regarding hydration.
Continuously educate athletes about the need for proper hydration!
- The Drive to Perform:** Athletes may be so focused on performance that they disregard the need for hydration.
Enforce regular hydration breaks rather than relying on athletes to hydrate themselves!
- Lack of a Consistent Message:** Athletes who only hear about proper hydration from one or two sources (i.e. Certified Athletic Trainer, Strength Coach, etc...) are less likely to commit to hydration efforts than those who constantly hear the message from a variety of several sources.

Heat Illness

HEAT GAIN

Radiation:
Objects warmer than the skin

Conduction:
Objects in contact warmer than the body

Convection:
Air temperature higher than the skin

Metabolism:
Muscular exertion



HEAT LOSS

Radiation:
Body temperature higher than your surroundings

Vaporization:
Water in expired air

Conduction:
Object you are in contact with cooler than the body

Convection:
Air temperature cooler

Evaporation:
Sweating

HEAT STROKE

Symptoms:

- hot red dry skin
- strong rapid pulse
- high body temperature
- little or no sweating
- may have headache, weakness and/or sudden loss of consciousness

Treatment:

- **Medical Emergency Call 911**
- must cool body immediately
- move to a cool place
- remove all equipment and clothing down to shorts
- ice bags in arm and groin, cold ice towels to face, chest and legs,
- use fan to circulate air
- if conscious give fluid to drink
- treat for shock and raise feet 3-4" off the ground

Symptoms:

- sweating,
- cool clammy skin
- weak rapid pulse
- fast shallow respiration
- may have weakness, nausea, light headed and excessive sweating

Treatment:

- move to a cool place
- remove equipment and clothing down to shorts
- cool down quick as possible with ice bags in armpits and groin
- cold towels over chest and legs
- wipe face with cold towel
- give sips of electrolyte or water to drink
- treat for shock and raise feet 3-4" off the ground

PREVENTION AND FACTS:

Become acclimatized both to the heat and intensity of the exercising before preseason workouts begin
 Have drink (water or sport drink) available at all times during practices and games
 Drink cold fluids as they empty faster from the stomach
 Wear light colored clothing as this reflects heat and dark clothes attract heat
 Drink 8 to 16oz of fluid (preferably water) 30 minutes before practice or games
 Weigh in before/after practice, drinking 8oz of water or sport drink for every 1lb lost.
 Quenching your thirst is only half the fluid your body needs
 Yellow urine is a sign of dehydration, urine should be clear, see chart below

Hydration Scale

Dehydrated (dark yellow) (clear) Rehydrated

Poster created by Herb Rhea, ATC, the Head Athletic Trainer for Jenks Public Schools. It is available at <http://jenkstrojanfootball.com/trojansportsmedicine.html> under the Information Menu; titled Heat Illness.



R. Clio Robertson, MD
 Don L. Hawkins, MD
 David R. Hicks, MD
 Michael W. Tanner, MD
 Brian C. Howard, MD
 James D. Cash, MD

David E. Nonweiler, MD
 Randall L. Hendricks, MD
 David K. Wong, MD
 Bryan J. Hawkins, MD
 Perry D. Inhofe, MD
 Thomas G. Craven, MD

Jeffrey R. Morris, DO
 Ronald S. LaButti, DO
 Jeff A. Fox, MD
 Kathleen M. Sisler, MD
 Troy A. Glaser, DO

Tulsa: 918.481.CSOS (2767) • Statewide: 888.269.CSOS (2767) • www.csosortho.com

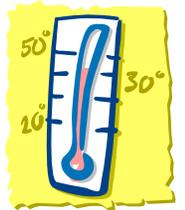
Tulsa • Owasso • Pryor • Vinita • Grove • Muskogee • Bixby • Jenks

Designing a Practice:

- **Realize that Heat Acclimatization Takes Time!**
Heat acclimatization takes 8-12 days. Start practices earlier or later to avoid the hottest part of the day.
- **Take the Time to Drink!**
10 -12oz every 20 - 30 minutes.
- **Always have Fluid Readily Available!**
Keep fluid within arm's reach or, at max, a very short walk.
- **Save Sweat!**
Assist your athletes in staying cool with mist tents, mist sprayers, and cool towels. Every drop that you provide for them is one drop that their body didn't have to.
- **Be Aware of Conditions that Predispose an Athlete to a Heat Illness!**

Designing a Drink:

- #1. WATER:**
The body is 55-65% water.
*Muscle Mass is 70%
- #2. ELECTROLYTES:**
Sodium levels should be .3-.7 grams/Liter
- #3. CARBOHYDRATES:**
6-8% of the drink, or 60 grams/Liter
- #4. FLAVOR:**
Sweet, appealing, and an appropriate flavor
- #5. TEMPERATURE:**
50-59 degrees C.
-a cool drink is 40-80% more likely to be consumed
- #6. AMOUNT:**



- 2-3 Hours Before:**
7-10oz every 10-20min
- During:**
7-10 oz every 10-20 min
- After:**

***Watch Your Weight:**

Weigh before and after px
1lb = 8-12oz

***Watch Your Urine Color:**

Clear urine in the morning is a good sign of appropriate hydration levels.
Anything darker; increase your fluid intake.

Information Gathered from:

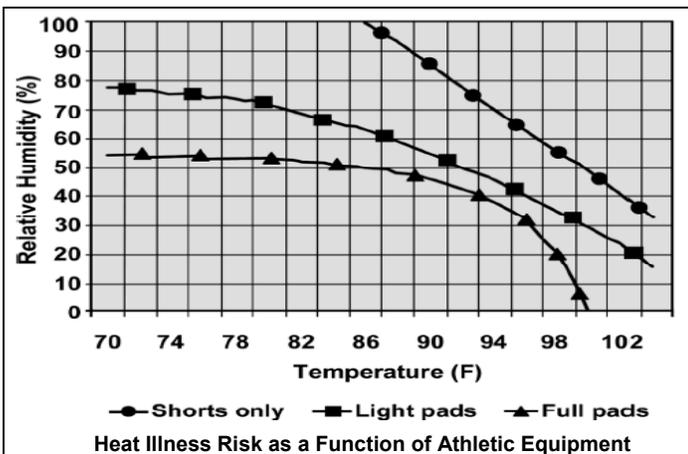
The National Athletic Trainers' Association Position Statement: Fluid Replacement for Athletes, 2000.

Gatorade Sports Science Institute Roundtable: Why don't athletes drink enough during exercise and what can be done about it?, 2001.

A Note to the Reader.....

Central States Orthopedic Specialists does not endorse any of the organizations or research groups whose information has been published herein. Furthermore, information in this publication is provided for informational purposes only and not as medical advice, or as a substitute for the advice provided by your physician or other healthcare professional, or for diagnosing or treating a health problem or disease.

This publication is designed to provide you, the reader with information only. It is your choice in how you apply the information given herein, and not a directive from Central States Orthopedic Specialist. It is simply an informative resource for you, the reader. As always, if you have specific questions regarding specific injuries, illnesses, policies, procedures, etc... speak with your Certified Athletic Trainer, or contact your physician.



Graph Retrieved From:

National Athletic Trainers' Association: Position Statement: Exertional Heat Illnesses, 2002

- **Watch for Athletes Who Have the Greatest Risk of a Heat Illness!**
 - More padding = Higher rate of heat illnesses
 - Greater body mass = Greater body heat
 - Darker skin color = Greater heat absorption
 - Athletes with a history of heat illnesses



R. Clio Robertson, MD
Don L. Hawkins, MD
David R. Hicks, MD
Michael W. Tanner, MD
Brian C. Howard, MD
James D. Cash, MD

David E. Nonweiler, MD
Randall L. Hendricks, MD
David K. Wong, MD
Bryan J. Hawkins, MD
Perry D. Inhofe, MD
Thomas G. Craven, MD

Jeffrey R. Morris, DO
Ronald S. LaButti, DO
Jeff A. Fox, MD
Kathleen M. Sisler, MD
Troy A. Glaser, DO

Tulsa: 918.481.CSOS (2767) • Statewide: 888.269.CSOS (2767) • www.csosortho.com

Tulsa • Owasso • Pryor • Vinita • Grove • Muskogee • Bixby • Jenks