



WATER MANAGEMENT FOR FOOTBALL PLAYERS

INTRODUCTION

Fluid composes 63% of an average sized man and has a variety of functions including: the ability to allow heat loss resulting in the “cool down” we all feel, it’s to solvate ionic compounds/salts (i.e. sodium and potassium), transport nutrients, gases, and wastes, generation of electrical signals for body functions, among others. During the course of a regular day (w/o training or competition) people can lose approx. 1.3 litres (depending on size and daily activity) through breathing, washroom visits and sweat. Water management problems are often as a result of excess hydration (hyponatremia) or dehydration

DEHYDRATION

Dehydration occurs when the amount of fluid “lost” (via sweat, breathing, urinating, etc) is **greater** than the fluid “gained” (via drinking, eating, metabolic processes, etc). Below are the signs and symptoms often associated with the varying degrees of dehydration an athlete may encounter.

Moderate/Minor symptoms of Dehydration	
Dry, Sticky Mouth	Headache
Lethargy or Tiredness	Dizziness/Light-headedness
Thirst	Decreased Urine Production
Darker Coloured Urine	Few/No Tears
Muscle Weakness	

Severe Symptoms of Dehydration	
Extreme Thirst	Very Little urine production
Irritability/Confusion	Very Dark Urine colour
Very dry mouth and skin	Sunken Eyes
Little/No Sweating	Shrivelled/Dry Skin
Low Blood Pressure	Rapid Heart Beat
Fever	Delirium/Unconsciousness

TIPS TO AVOID DEHYDRATION

Not surprisingly, dehydration can be avoided by simply **DRINKING FLUIDS**, gradually getting used to the environmental surroundings of the practice/competition is essential to reduce the likelihood of dehydration, this process is called **ACCLIMATIZATION OR ACCLIMATION**. Finally, Avoid anti-inflammatories such as aspirin, ibuprofen, and acetaminophen because they interfere with the kidneys ability to filter water/salt.

Observed Benefits of Heat Acclimatization	
Body Thermoregulation	Exercise Performance
Core Temperature reduced	Overall Heart Rate lowered
Sweating happened earlier and greater	Thirst improved
Blood flow to skin happens easier and faster	Overall salt loss via sweat & urine improved
Overall heat production decreases	Organ protection improved

HYPONATREMIA

Sodium is a very important mineral in the human body, which is usually found in between 136-145 mEq/L. Hyponatremia (sodium levels fall to below 135 mEq/L) is often associated with excess exercise and/or the consumption of too much fluid (without salt) too quickly. Similar to dehydration, avoidance of hyponatremia can be accomplished by making sure that the fluid intake does not exceed the fluid lost and consuming salt with these beverages.

SYMPTOMS OF HYPONATREMIA	
Nausea/Vomiting	Headaches
Confusion	Lethargy
Fatigue	Appetite Loss
Restless/Irritable	Muscle Weakness/Cramps
Seizures	Coma

THE FOOTBALL PLAYER

DYNAMIC

Compared with soccer or rugby players, participants of individual sports like running or cycling, footballers players tend to be larger, not as aerobically fit, and have a higher percentage body fat. These factors contribute to the much larger body surface area in footballers compared to other athletes and it is thus reasonable to expect that they would have a greater number of sweat glands and therefore may be capable of sweating at higher rates than their smaller counterparts. This is especially true for a lineman who may weigh 118–145 kg (260 – 320 lbs) compared to, for example, a cross country runner who may weigh 65–75 kg (145-165 lbs). These factors, along with exercising in heavy clothing and/or equipment may disadvantage the football player when it comes to thermoregulation and adequate fluid replacement a great deal more than the runner!

To give you some more numbers, a football player will not surprisingly have a much greater daily sweat loss (~8.8 litres/day) than, for example, a cross country runner (~3.5 L/d) training in the same hot environmental for the same duration. When comparing football players with other team sports, we see sweat rates during practice sessions and competitions were 0.985 and 1.209 litres/h for soccer, and 1.371 and 1.601 litres/h for basketball players and a whopping 2.14 L/hour resulting in the average net loss of 1.7 kg (3.75 lbs) per day not to mention the challenge to maintain adequate fluid and electrolyte intake during preseason two a day practices on consecutive days!

STRATEGIES TO IMPLEMENT TO REDUCE DEHYDRATION AND HYPONATREMIA

FOOTBALL PLAYER HYDRATION SUGGESTIONS	
2 HOURS prior practice/game	DRINK 2 CUPS (16 oz) OF COOL FLUID
15-20 MINUTES prior game/practice	DRINK 1-2 CUPS (8-16 oz) FLUID
Exercise lasting less than 60 MINUTES	DRINK 1-1.5 CUPS (8-12 oz) EVERY 15-20 MINUTES and small sips throughout the 15-20 minutes intervals
Exercise lasting more than 60 MINUTES	DRINK 1-1.5 CUPS (8-12 oz) EVERY 15-20 MINUTES WITH 4-8% carbohydrates and 0.5 -0.7 G of sodium/L (i.e. sport drinks) and small sips throughout the 15-20 minutes intervals
AFTER	DRINK COOL WATER WITH IMMEDIATE POST EXERCISE MEAL/SNACK. DRINK SPORTS DRINK OR CARB AND SODIUM CONTAINING DRINK. DRINK BEVERAGE WITH SMALL AMOUNT OF PROTEIN (4-8g) IF UNABLE TO EAT SNACK WITH DRINK (SOME EXAMPLES, INCLUDE CHOCOLATE MILK, ETC).
DAILY	CARRY WATER BOTTLE WITH YOU AT ALL TIMES LOOK FOR PALE COLOURED URINE TO INDICATE PROPER HYDRATION DRINK BEFORE, DURING, AND AFTER EXERCISE EAT LOTS OF FRUITS AND VEGETABLES REPLACE SODIUM LOST THROUGH SWEATING WITH SALTY FOOD (EX. PRETZELS) OR SPORTS DRINKS WITH SALT
NOTES: WEIGH YOURSELF BEFORE AND AFTER EXERCISING, SUBTRACT THE PRE EXERCISE WEIGHT FROM THE POST EXERCISE WEIGHT AND FOR EVERY POUND LOST, DRINK 3 CUPS OF COOL FLUID	

Tips: COACHES, ITS IS **NOT** A SIGN OF WEAKENSS IF YOUR ATHLETES NEED WATER SO SCHEDULE WATER BREAKS ACCORDINGLY (I.E. IF YOU HAVE 2 A DAYS IN HOT AND HUMID CONDITIONS, INCREASE THE FREQUENCY OF WATER BREAKS). PLAYERS, IT IS **NOT** A SIGN OF WEAKNESS TO THE COACH, TEAMMATES OR OPPONENTS IF YOU NEED A WATER BREAK **SO DO NOT HESITATE TO ASK FOR ONE**



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