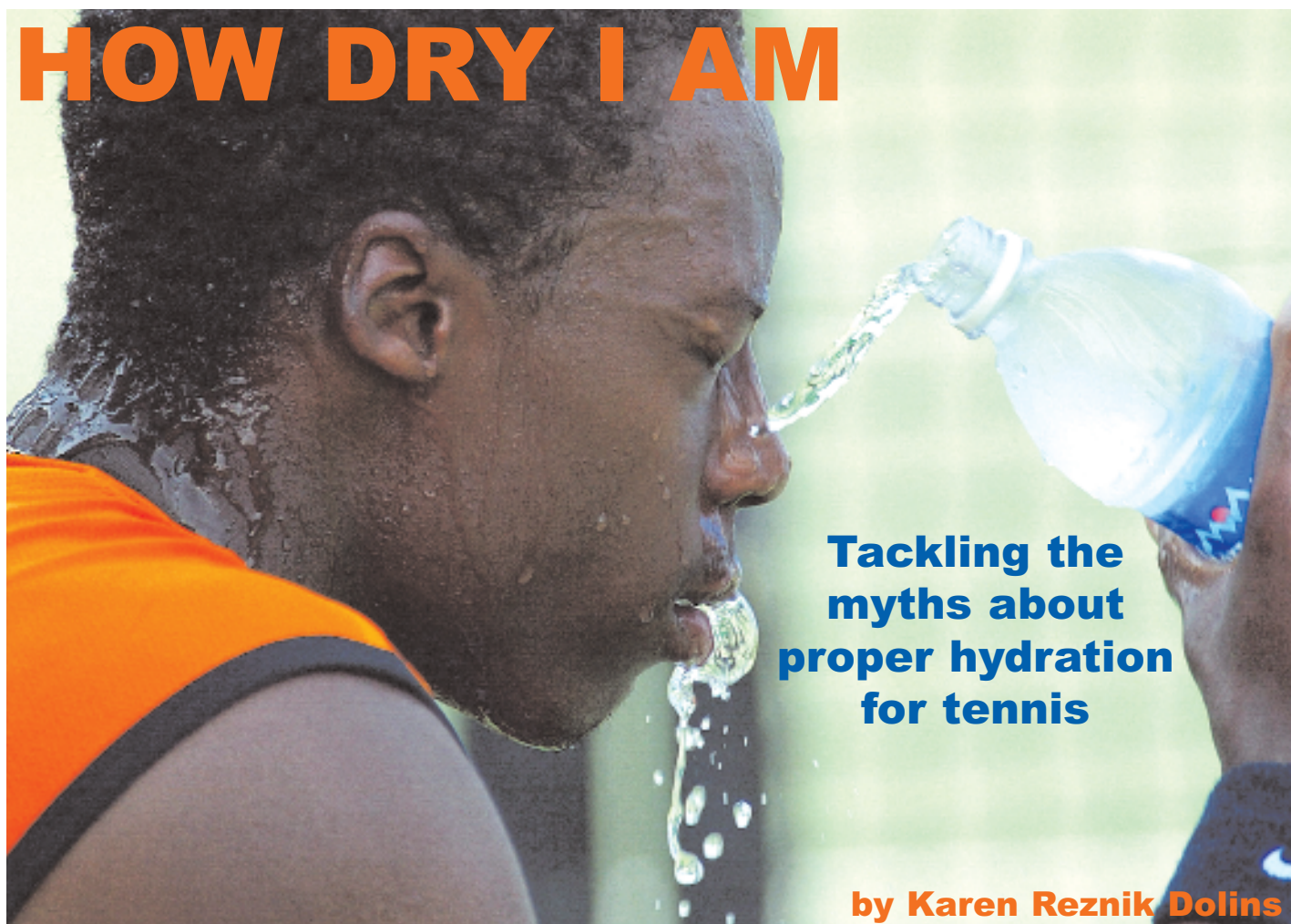


# HOW DRY I AM



## Tackling the myths about proper hydration for tennis

by Karen Reznik Dolins

Fred Mullane

Gael Monfils tries to cool down by dousing himself with water, which might feel good, but realistically does nothing to keep his body from overheating.

“We all need eight glasses of water a day to be healthy.” Mom says it. Grandma said it. Even your coach might say it. Still, while it’s one of those “facts of life” that everyone has learned, this commonly recited prescription does not stand up to scrutiny. In fact, a perusal of the scientific literature finds no basis to this claim.

New guidelines issued recently by the Food and Nutrition Board of the Institute of Medicine note that the average individual needs about 3.7 liters of fluid a day, but not all of this needs to be consumed as water. The Board states clearly that this amount represents all fluids obtained from foods as well as any liquids, including caffeinated and alcoholic beverages. So your cereal, juice, coffee, fruit and salad all count toward this total, as does the glass of wine you might enjoy with dinner.

It’s not uncommon to find that several “truths” accepted as dogma are actually myths. Athletes, in particular, need to be aware that broad government-issued guidelines are meant to be applied to healthy people engaging in low to moderate levels of physical activity in moderate climates. Guidelines for those playing rigorous tennis in the heat will be different.

Here are 10 commonly heard myths and the facts as they apply to tennis:

**Myth 1:** *Drinking to satisfy thirst will keep me hydrated.*

**Fact:** While the Institute of Medicine report found that this approach works long-term in sedentary or moderately active people in moderate temperature environments, it is not an effective approach for competitive athletes, especially when

playing in the heat. Studies have shown that when active people drink until they no longer feel thirsty, they fail to replace the fluids lost through sweat. The best way to evaluate fluid needs on the court is to weigh yourself before and after you play. (See chart, page 64) Drinking two cups for every pound lost will maintain hydration. Be aware, though, that fluid losses vary with the environment. If you complete this exercise in New York in the winter or spring, you’ll know little about your needs during competition in Florida on a warm, humid day. You need to repeat this test under similar environmental conditions. If you find this impractical, be sure to monitor urine color and frequency. Urine should appear clear like lemonade, not dark like apple juice. Frequency should be at least every three-four hours.

**Myth 2:** *Dehydration occurs during a match, not before.*

**Fact:** Dehydration is cumulative. This means that if you have not replaced the fluids lost during your last practice, you may be starting your match dehydrated. John DeFilipo, director of tennis at the Stamford (Conn.) Indoor Tennis Academy, advises his players to focus on hydration for the period leading up to a tournament. He has observed that kids who do not maintain their hydration tire quickly, which can reduce the effectiveness of a practice session or cost them a match. Page Love, a sports nutritionist and member of the USTA Sport Science Committee, agrees. She advises players to drink two-three cups of water or sports drink within two hours before a match. Players must practice hydration during practice, she cautions, particularly when traveling to an area where environmental conditions

vary from the training environment.

**Myth 3:** *All sports drinks are the same.*

**Fact:** Sports drinks are specifically formulated to prevent dehydration. The sports drink that started the craze, Gatorade, was formulated for the University of Florida Gators using a formula similar to that used to treat severe dehydration resulting from intestinal illness. The secret is to add carbohydrate, sodium and potassium to water. When added in the proper proportions, this combination replaces fluids more rapidly and effectively than water alone. As an added bonus, the carbohydrates also provide fuel for active muscles and the brain, delaying fatigue and promoting clear thinking throughout a match. The amount of the respective ingredients determines how well the fluid is absorbed and how much fuel is available, while the taste will often impact how much is consumed.

In today's competitive market, manufacturers are continually reformulating sports drinks in an attempt to gain a market edge. The benefit of additional substances added to sports drinks is questionable.

**Myth 4:** *Pouring water over the head cools the body.*

**Fact:** The purpose of drinking fluid is to prevent the body from overheating. Working muscles generate heat. This heat must be removed from the body to prevent overheating. Essential body fluids are usually lost in this process. If they are not replaced, exercise performance will decline. In extreme cases, the life-threatening scenario of heat exhaustion can develop. While pouring water over the head feels good, it does nothing to help dissipate heat from the body or replace lost fluids.

**Myth 5:** *It's best to dilute a sports drink so you don't get too much sugar.*

**Fact:** Sugar is added to a sports drink for two reasons:

1. To promote the intestinal absorption of water, and
2. To maintain blood sugar levels during exercise.

Sugar is the major energy source for working muscles, especially at high levels of intensity. Because tennis is a sport often played at high intensity, fuel needs are substantial. The sugar in sports drinks allows power to be sustained and delays fatigue. Too much sugar, though, will slow down fluid absorption. The American College of Sports Medicine recommends that rehydration fluids contain less than 10 percent carbohydrate. This rules out sodas, juices and sweetened iced teas as

appropriate sports drinks.

**Myth 6:** *The sodium in sports drinks is unhealthy.*

**Fact:** To the surprise of many, the amount of sodium in a sports drink is usually very small. One cup of Gatorade, for example, has less sodium than one slice of bread. The sodium in a sports drink plays a vital role in hastening rehydration and keeping fluids in the body. In addition, sweat losses of sodium must be replaced to avoid hyponatremia, or low levels of sodium in the blood. This is a potentially dangerous scenario. A small amount of sodium in a rehydration fluid also keeps active individuals thirsty, making it more likely that they will keep drinking and taking in the total amount of fluid they need. In fact, heavy sweaters benefit from drinking special formulas for endurance athletes, which have slightly more sodium in them than regular sports drinks.

**Myth 7:** *An effective sports drink has vitamins added to it.*

**Fact:** While vitamins are necessary to extract energy from foods, there is no benefit to taking them during exercise itself. Numerous surveys have found that, while athletes as a group tend to take vitamin supplements, they do not suffer from inadequate vitamin stores. Most active people eat enough food to get all the vitamins they need.

**Myth 8:** *It's impossible to drink too much.*

**Fact:** While the Institute of Medicine report reassures us that the body does a great job of excreting extra fluid, cases of over-hydration, while rare, have been reported. Active people would do best to know how much fluid they lose in a match and to replace these losses. If you guzzle a large amount of water during each changeover, try weighing yourself before and after a practice session. If you've actually gained weight, you've had too much to drink. This may be accompanied by a dilution of the sodium in your blood (see Myth #6). If you've lost weight, drink about two-three cups of a sports drink for every pound you've lost. (See sidebar for worksheet.)

**Myth 9:** *Pickle juice or Pedialyte is a great rehydration fluid.*

**Fact:** Pickle juice is much higher in sodium than a sports drink. It is so salty, in fact, that it would be highly unlikely that an athlete could consume enough fluid to replace losses. Also, it does not provide energy-yielding sugars.

Pedialyte, while effective in treating dehydration in ill children, is too low in carbohydrate to provide adequate fuel

## BIONOVA 1/3 AD #1

# BIONOVA

## 1/3 AD #2

for active people and is higher in sodium than sports drinks.

**Myth 10:** *The type of sugar used doesn't matter.*

**Fact:** Sports drinks are formulated using a variety of sweeteners. Common ingredients include sucrose (table sugar), glucose, fructose, high fructose corn sweeteners and maltodextrins. These sweeteners have different properties. Maltodextrins and fructose are less sweet than glucose and sucrose. Drinks using these ingredients will taste less sweet while providing the same amount of carbohydrate fuel. Fructose is generally not used alone, though, because it tends to cause intestinal upset when consumed in large amounts. Some drinks may include artificial sweeteners, which sweeten without providing fuel. High fructose corn sweeteners are used in soda and other sweetened drinks. As this sweetener has become prevalent in our food supply, some scientists and nutritionists worry about possible ill effects.

Tennis players use a huge amount of fuel during competition. Most of that fuel comes from sugar. While any of these sweeteners provide fuel, there is evidence that drinks using combinations of sugar allow more to be oxidized or burned for energy. According to Dr. Bob Murray, director of the Gatorade Sports Science Institute, this explains why Gatorade uses a mixture of glucose, fructose and sucrose.

Proper hydration will allow competitive tennis players to perform their best while avoiding heat-related illness and muscle cramping. Your specific requirements will depend on your sweat rate, the amount of electrolytes in your sweat (in particular sodium), the adequacy of your diet and the environment in which you are playing. The American College of Sports Medicine recommends the following:

Drink about two cups of fluid two hours before exercise;

Drink at regular intervals during exercise;

During intense exercise lasting longer than an hour, carbohydrates should be ingested at a rate of 30-60 grams an hour;

Including sodium in a beverage during exercise lasting longer than an hour may enhance palatability, promote fluid retention and possibly prevent hyponatremia in certain individuals who drink excessive quantities of fluids. TW

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### Calculating Your Sweat Rate

1. Warm up to point where perspiration begins.
2. Urinate, if necessary
3. Weigh yourself naked
4. Play tennis at tournament intensity for one hour
5. Drink a measured volume of beverage during the hour
6. Reweigh yourself naked

Weight before exercise	_____	<b>A</b>
Weight after exercise	_____	<b>B</b>
Change in body weight	_____	<b>A-B=C</b>
Volume consumed	_____	<b>D</b>
Urine volume	_____	<b>E</b>
Sweat loss	_____	<b>C+D-E</b>
Exercise time (minutes)	_____	<b>F</b>
Sweat rate (milliliters) per minute	_____	<b>G</b>
Sweat rate per hour	_____	<b>FxGx60</b>

**Accuracy is improved if environmental conditions are similar to what they would be on tournament day. Reassess for seasonal changes. To avoid measuring urine volume, weigh after tennis, but before urinating.**