

HAVE YOU THOUGHT ABOUT YOUR SODIUM LATELY?

BY JORDAN D. METZL, MD

When I was running my first Ironman in Lake Placid four years ago, I remember a distinct feeling that set in at mile 14 of the run. Up to that point, the excitement of my first race, the thrill of finishing a ridiculous bike course, and the anticipation of finishing a previously unimaginable goal was pushing me onward. “Just keep those feet moving,” I told myself again and again.

But something happened on the way to the finish. Sure I'd had hypoglycemia—low blood sugar—many times before. Hypoglycemia is that bonk of hitting the wall, often after two hours of exercise. Sometimes it starts as a headache, sometimes it means you simply feel lousy, and most of all, it means you need sugar, fast. With hypoglycemia, the key is to avoid it by taking in gels, drinks and good pre-race nutrition. In marathons, I'd learned the hard way that hypoglycemia is debilitating, but if you prepare properly, you usually can avoid it.

“The better your training, the more sweat you lose per hour.”

On that hot and humid Lake Placid day in July, however, I learned about something new to me—hyponatremia. I distinctly remember that at mile 14 of the run, a weird feeling came over me. The pain of pounding out steps lessened, as did my take on the whole situation. I kept telling myself, “Jordan, you are in an Ironman race, you are in Lake Placid, your brother is ahead of you, keep going.” But as the minutes wore on, I didn't seem to care as much. As my awareness of where I was continued to diminish, I felt myself not caring about much of anything. By mile 15, I wanted to sit down on the side of the road and take a nap.

But just at that point, I saw a beautiful sight. It was not one of the scantily clad



female race fans, or even a cold beer, it was an old man with a jar of salt. I didn't know why, but my brain guided me to this grizzled old fellow at the side of the road with a large jar of salt in his hand. I opened my palm, took an entire handful of salt, and started devouring it right in front of him. Almost immediately, I felt better. The turnaround was amazingly quick, my mind cleared, the world focused again. Even the water that had been sloshing around in my stomach seemed to stop sloshing. My legs starting moving and onward I went. When I passed my friend again on the way back to town, I took another salt hit for the road. The last miles of the race I was upright and smiling. And one thing of

which I am certain is that without this man and his jar of salt, I never would have finished that race.

Several weeks later, when the excitement of the race was over, I decided to think more about what happened that day. As a doctor, I was amazed by both the symptoms and the rapid cure. Unlike the nauseous feeling of hypoglycemia, which I had known before and usually takes a half hour or so to cure, salt solved my problem immediately. The loss of sensorium was also new to me and different than hypoglycemia. After some reading, I soon realized that my symptoms were classic for hyponatremia—a loss of sodium in the blood.

Hyponatremia is common in endurance

sports, especially those lasting more than four to five hours. Much like my experience, the symptoms are often not apparent when they are happening. When athletes sweat in hot and humid conditions, they lose both water and electrolytes such as sodium and potassium. This loss of fluid and electrolytes is known as the sweat rate.

So what do we know about sweat rate? Sweat rate is influenced by a number of factors including the bulb index (a combination of the heat and humidity on a particular day), an athlete's fitness level, and plain old mother nature who makes some people sweat more than others. Contrary to popular thought, the better one's physical fitness, the greater the sweat rate. This means that the better your training, the better shape you are in, the more sweat you lose per hour. The sweat rate can vary from mild sweaters who lose only half a liter per hour, to heavy sweaters who can lose two to three liters every hour they race or train. Furthermore, the concentration of sweat varies tremendously from person to person. Athletes who are heavy sweaters are usually the ones who look like they are painted in chalk at the end of the race, as the salt dries on their skin.

In thinking about your own nutrition, especially during hot humid races like Kona where the bulb index is often high, it's very important to think about hyponatremia. If you want to avoid it, you have to effectively replace your electrolytes during the race. There are laboratories such as the Gatorade Sports Science Institute (GSSI), where sweat rate and concentration can be individually calculated, but since there are few such labs that are open to the public, a sports nutritionist can help. This often involves an athlete using high sodium drinks and electrolyte supplements to correct sodium losses. Since everyone is different, it's best to get some help in figuring this out for yourself.

Once you learn about your sweat rate, your own sodium loss, and how to replace your sodium during the bike and run, it's easy to avoid hyponatremia. Preventing hyponatremia can make endurance triathlons easier, safer, and much more enjoyable. If you have had hyponatremia before, you know exactly what I'm talking about. And if anyone sees the old man on the side of the road, please thank him for me. ▲

Jordan D. Metz, MD is a Sports Medicine Physician at Hospital for Special Surgery in New York City and a three time Ironman triathlete.