

THE HOT ZONE

When the days start heating up, you need to run with caution. A lesson the author learned the hard way

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The voice on the phone was totally unfamiliar to me. "Hi. My name is Sue Adams," the woman said. "I'm the one who breathed into your mouth." I'd never heard of Sue Adams. But I soon realized she was the one who had saved my life just three weeks earlier.

Sue Adams was the sixth person to stop over the motionless, gray form---me---lying on the asphalt jogging loop that hot Texas day. More importantly, she was the one who began CPR, even though, for the first 5 minutes of it, she assumed I was dead. Finally, she heard me gasp. At that point, an emergency medical technician on his way home from work ran over with a portable oxygen canister. Soon an ambulance whisked me to a hospital, where I received intravenous fluid, recovered quite quickly, and was released a few hours later.

I had survived this brush with death, but the episode left me scarred--literally. The day had been so sunny and hot that local road surfaces heated up like a branding iron. When I collapsed to the asphalt and remained there for perhaps 10 minutes, I received two 9-inch-long, third-degree burns on my left leg.

It had been a 95-degree afternoon, with Houston's typical high humidity. Because I've been a runner for more than 30 years and have completed more than three dozen marathons, I figured I knew what to do. I'd simply cut short my planned workout. What could go wrong during just four or five 400-meter repeats on the asphalt circuit at the college where I teach?

The answer turned out to be: quite a lot. I'd only finished two of those repeats when the lights went out. Almost permanently.

Heat Basics

After this scary incident, I decided to learn as much as I could about what had happened. I wanted to make sure it would never happen to me again. I also wanted to inform my friends, so they could avoid the same frightening experience. Here's what I found out, much of it from two sources: (1) Larry Armstrong, Ph.D., a heat and running expert from the University of Connecticut; and (2) a document titled "The Prevention of Thermal Injuries during Distance Running," which is an official "Position Stand" of the American College of Sports Medicine (ACSM).

First, a brief explanation of why runners are particularly susceptible to heat illnesses: it's the calorie-burning. Yup, the same high-calorie burn that makes running such a great fitness and weight-loss exercise. In most normal conditions, this calorie-burning is a great aerobic benefit. But when the weather turns hot and humid, the heat you're producing might not have enough escape routes. "During intense exercise, the heat produced by contracting muscles is 15 to 20 times that of basal metabolism," notes the ACSM, "and is sufficient to raise body temperature by 1 degree Celsius [1.8 degrees Fahrenheit] every 5 minutes if no temperature-regulating mechanism is activated."

Armstrong distinguishes among three levels of heat illness: heat cramps, heat exhaustion and heatstroke. The first is the mildest; the last, which I had survived, is the most serious---indeed,

heatstroke is considered a medical emergency and can be life-threatening. All three are most likely to strike those with impaired heat-regulating abilities (the young and the elderly), those unaccustomed to high heat and humidity (someone who has just moved to a new environment, or someone encountering the first hot days of the new season), those forced to work hard in a hot climate (armed-forces troops, laborers, football players in August) and those who choose to push themselves in a hot climate (runners and other outdoor exercisers). Here's a brief summary of the three types of heat illness.

Heat cramps: These abdominal cramps are associated with a fluid imbalance or salt deficiency, and may be the only heat-related problem a person suffers. Or they can be one of the symptoms of heat exhaustion.

Heat exhaustion: This condition results from dehydration, or the loss of body fluid. With heat exhaustion, you may experience one or more of the following: extreme thirst, nausea, dizziness, vomiting, headache, abdominal cramps, weakness and difficulty breathing. Unless you stop running and get out of the sun immediately, heat exhaustion can lead to heatstroke.

Heatstroke: This one's major trouble. Heatstroke occurs when your body's thermoregulatory system shuts down from excessive heat buildup and/or excessive dehydration. Heatstroke can kill. Symptoms include vomiting, diarrhea, disorientation, convulsions, unconsciousness and coma. At this stage, you may or may not sweat. The body will attempt to maintain blood pressure, sometimes at the expense of liver or kidney function. (You've probably read of athletes who collapse from heatstroke, then die at the hospital days later from kidney failure.)

It Happens To The Best Of Them

It's scary, but heat exhaustion is relatively common in some road races. That's because runners produce so much heat, are often incredibly motivated to achieve a goal and are used to pushing themselves hard. At the Honolulu Marathon, medical director Jack Scaff, M.D., estimates that the race averages "a couple hundred" heat cases per year. Most require only brief attention. Physicians cool the runners with water and ice, make them consume fluids, administer intravenous fluids if necessary and monitor their body temperature to assure that they're returning to normal.

The big myth about heat illness is that it affects only beginner, poorly conditioned or older runners. Not true. It strikes the slow and the fast, the jogger and the world-class athlete. In fact, elite athletes may be at greater risk because they're so motivated to succeed. They know that their success rests on pushing through pain. Midpack and slower runners, on the other hand, may simply stop when they experience the discomfort and disorientation of heat illness. They figure: "What's the point? I'm not going to win anything." And stopping is the first step to recovery.

Two of America's best-known distance stars, Ed Eyestone and Alberto Salazar, have suffered dramatically and publicly from heat difficulties. A national audience watched on television as Eyestone suddenly dropped out of second place in the 10,000 meters at the 1996 U.S. Olympic Trials. He fell back from the leaders and eventually staggered onto the infield, all during the final mile of the race. Atlanta's heat and humidity did him in. "If I'd gone another 100 meters, they would have had to scrape me off the track with a spatula," Eyestone quips now, several years later.

More or less the same thing happened to him a year earlier in the Crescent City 10-K. Eyestone recalls that he heard, distantly, another runner urging him to stop. But the next thing he remembers is "wandering around" in a park adjacent to the race course. He didn't finish the race, and has no memory of staggering off the course.

Salazar, too, had several close calls. The premier U.S. distance runner of the late 1970s and early '80s doesn't even remember collapsing at the end of the Falmouth Road Race in 1979.

Attending doctors measured his body temperature at 104 degrees Fahrenheit and had real concerns for his safety. Salazar pulled through after being covered in ice and given intravenous fluid. He needed similar treatment after defeating Dick Beardsley in their "duel in the sun" at the 1982 Boston Marathon.

Interestingly, only about 10 to 20 percent of known heatstroke incidents in races involve women. Even taking into consideration that women race in fewer numbers than men, this figure represents a striking gender difference. Do women have some physiological advantage in the heat? Or are they simply smarter about heeding the warning signs of heat illness? Scientists simply don't know, admits Armstrong.

Stop Running, Start Chugging

When trouble strikes, the experts do know what steps you should take: stop running immediately and get in the shade. If possible, pour water over yourself. Head for air-conditioning if you can find any nearby. Next, start drinking. Water is fine, but sports drinks or fruit drinks are even better, because they contain sodium, which will help you retain the fluids you consume. Force yourself to drink, even if you're feeling nauseous. (Needless to say, the same principles apply to helping any friend, training partner or race participant who may be suffering from heat illness.) In extreme cases, when a runner becomes incapacitated, Armstrong and others advise immersing him in very cold water. "This works well," says Armstrong, "because water absorbs heat about 20 times faster than air." Packing the runner in ice is another effective method. The sooner a runner gets chilled down, the better the chances of avoiding acute circulatory failure, which accounts for 80 percent of heatstroke deaths.

Practicing Avoidance

If you play it smart and safe, you can avoid problems in the first place. Here's what to keep in mind:

- * Don't set yourself up for an acute problem by being chronically dehydrated. Drink copiously all day long.
- * Give yourself time to get acclimated to the heat. When hot weather hits, you need 10 to 14 days to get used to it. Don't do a brutal interval workout at noon on the first hot, humid day of summer.
- * Get in the habit of drinking at least 16 ounces of water or sports drink 2 hours before running. During exercise, the American College of Sports Medicine recommends taking in 5 to 12 ounces of fluid every 15 to 20 minutes. Or keep it simple: drink as much as you can handle. Every time you pass a drinking fountain, for example, drink from it. When you know you're going to be doing a long run Sunday morning, stash drink bottles along the course the evening before. Or carry water bottles in a hip pack or backpack.
- * Stay away from cotton shirts. Synthetic fabrics have better wicking properties to keep you cooler. A lightweight hat, sunglasses and sunscreen help, too. (Along with its skin-protecting properties, sunscreen also keeps your skin cooler.)
- * Run at the coolest times of day--early morning and evening. When you must run during sunnier hours, head for shady courses. Run on natural surfaces rather than asphalt, and seek out locations that might be cool and breezy (near a river, for example). Or hit the treadmill in an air-conditioned room instead. If the weather turns altogether beastly, head for the shore, a lake or a pool for some water-based cross-training.
- * Lower your expectations. If it's hot and you had planned a long run, hills or speedwork, change your plans. You're not going to be able to run at your usual level, so don't even try. (Heart rate is routinely elevated on hot days.) Or simply get used to running less and slower during the hottest

weather. Give it an impressive, technical-sounding name like "periodic training," and adapt to it. You'll bounce back quickly when the weather turns cooler.

* Listen to your body. Now that you know the symptoms of heat illness, heed them if they arise. Stop running and let your body cool down.

* Run with a buddy on hot days. He or she will be your insurance just in case something does go wrong.

* Monitor yourself even more closely when you're racing in hot conditions. If you start to feel bad, there may be a reason (heat and dehydration) that has nothing to do with your fitness or willpower. You can't beat the heat. Nobody can--that is, nobody can race up to their potential in hot conditions. You'd be a lot smarter to slow down, forget about that day's race and look forward to racing fast on another day when conditions are better.