Fueling on the Run

Proper fueling while running an ultra is somewhat of a religious topic. There are many things that work and nothing truly is sacred, to be successful. Some ultrarunners are vegans, and most eat meat. Some believe drinking soda is harmful, and most drink it freely during races. Some think you should drink constantly, others when you feel thirsty. Some think beer is heavenly liquid, others consider it to be unhealthy and dangerous. If you get a chance, volunteer at an aid station during a 100-miler and watch what people eat and drink from the aid station or from their drop bags. Fueling strategy can be all over the map. Figure out what works for you.

To be successful in ultrarunning you must keep in careful balance:

1. Calories
2. Fluids
3. Electrolytes

Calories

A big problem for me early on was to learn how to eat while running. I would lose my appetite and just stop eating. When I ran with my brother-in-law Ed, I would observe that he would eat a ton. I knew that he was doing the right thing, but it took a while to teach myself to eat during my runs. Runners who come up through the marathon ranks especially have this problem. They will typically run marathons without eating and don't understand that "hitting the wall" is most likely caused by an imbalance of either calories, fluids, or electrolytes. It is possible to run much, much, further that a marathon if you pay attention to your fueling.

During my initial couple years of ultrarunning, a dreaded "bonk" would arrive at some point. It was a nasty sickening pit in my stomach that would greatly slow my performance. I experienced it for the first time during my first 100-mile attempt and it felt like I was dying. I soon learned to feel early signals of a bonk and would quickly take action to take in more calories and electrolytes. As I gained more experience over the years, with more careful attention to fueling, I can totally avoid "the bonk."

I subscribe to the idea that while I run, my body can only process about 300 calories an hour. More than that will eventually cause my stomach to rebel. Typically my problem is the reverse, making myself eat enough per hour to come close to 300 calories.

Early on I believed in the common notion of "carbing up" the night before a race. I quickly learned that what goes in, must come out, and the older you get, the come-out step takes a long while during a race. I have not seen benefits from "carbing up" the night before running a 100-miler. Transitioning to liquid carbs the day before it much more beneficial to my digestive system. Fueling consistently during a race has better results for me than "carbing up" beforehand.

What to eat during a race? During my first ultramarathon, a 50K, I recall eating an apple about half way through. I quickly discovered that apples take a long time to get digested out of the stomach and can slosh around in there for hours. I now avoid anything that won't digest quickly including apples, watermelon, oranges, nuts, and any other fibrous foods. Sure, these foods can supply some good calories and taste good, but if I run with a sloshing stomach, I slow down and eventually throw up.

Several months ago, I received a message from a reader of my blog, a nutritionist who wondered how someone like me, who seemed to have such incredible health, could be consuming coke and candy during runs. She believed that coke can terribly affect your bones. My children's' swim team coaches made them all abstain from any soda during their competitive season, teaching them that it would slow them down. (I would tell them that the carbonation would make them float better.) I've heard it all. But my experience and belief is that coke and other sodas are a staple for 100-mile races. They provide a good combination of fluid, calories, and carbonation to help keep things balanced and calm the stomach down. On a hot day at mile 50, nothing tastes better to me than a cold Ginger ale. During a 100-miler is no time to get ultra picky about nutrition. Your bones won't crumble during the race from drinking coke. What about candy? You will see it freely spread out on aid station tables. You need to take in quick simple carbohydrates, not go sit down and feast on a healthy green salad.

Fluids

Back in 1996, I started to get into mountain biking and enjoyed riding on the dirt roads around my home in Tucson, Arizona. One day I foolishly went for a long ride out into the desert with just one water bottle. Miles out into the desert on a warm afternoon, I realized that I wouldn't have enough water to get back. I grasped how foolish I was. I did my best to ration my remaining water but pretty severe dehydration came. I had pain in my joints, a loss of energy, severe thirst, and rapid respiration. Thankfully I was saved by finding a full water bottle right in the middle of the road. I vowed to never be so foolish with hydration again.

As a new runner, I was foolish and learned the hard way. I would at times run out of water and get dangerously dehydrated. During an amazing two-day adventure run in Canyonlands National Park I totally ran out of water and had to drink from little pockets in the slick rock. I eventually learned my limits. If I didn't pay careful attention to my fluid intake and became dehydrated during a 100-miler, I would usually end up running slowly for several hours until I eventually recovered. Sometimes that recovery would not come until the cooler evening. I would make this mistake over and over again, but eventually I learned my lesson well and took better steps to avoid dehydration. I now carefully plan how many water bottles I need to bring with me on runs.

I also learned that I could train my body to better react to mild dehydration. Putting the body through some dehydration stress allows it to adapt. I'll do many morning training runs where I drink very little. I've discovered that now, when I do long adventure runs, I require fewer water bottles. If I get somewhat dehydrated, it no longer affects me as poorly as it used to. If I run out of water, I now can still run pretty well for quite a while to get to the next water source. However, races are not the time to cut back on fluids. Once I was running with my brother in a 100-mile race and after six miles or so, I noticed that he wasn't carrying any fluids. His response was that he never started his training runs and with water. A 100-mile race is no time to cut back on fluids because of the increased pace and very long distance. You must keep things in balance right from the start or later on you will suffer.

Don't try to over-hydrate before a race. You will regret it. It usually harms more than helps. I drink normally during the previous day and race-day morning. How much should you drink during the race? I like to drink regularly, sipping from my bottle, but not with excess like some people subscribe to.

Thirst helps you make a good determination and you can monitor things by your output frequency and color.

I learned early on that if I used a camelback during a race, I tended to avoid drinking as much as I should, simply because it took effort to suck to fluid and it interrupted my breathing. Squirting from a handheld bottle solved my problem. It didn't take me long at all to get used to running with handheld bottles. I could also run much faster without something on my back.

To cool yourself in hot weather, is it better to put the water in you, or cool yourself with it on your body? In two different races I ran in 2015, one race director claimed it was bad to drink ice water to cool you down. Another race director said there is very little value to cool your skin with water, drink it instead. For me, the truth is: Do both. A popsicle during a hot race can greatly improve my core temperature and I can revive very quickly. Also, keeping my head and back of the neck cool with water, dramatically improves my ability to run in the heat. But proper hydration must be done in all cases.

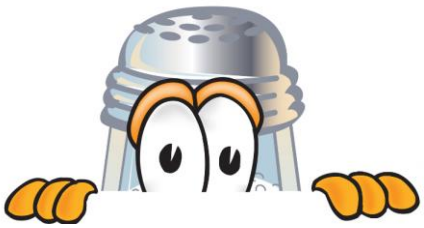
Electrolytes

Recently in 2016, some articles were circulating around runner social media that the need for increased salt intake during long endurance events is a myth. The rationale is some theoretical mumbo-jumbo being tossed around by those without true ultrarunning experience. They sound to me like those people who believe that the moon landing was a hoax.

I learned very early on about the terrible dangers of not replacing electrolytes. In 2004, during a hot June, I ran the length of Paria Canyon with friends and family. I drank mostly straight water during the last 20 miles in the open desert as the temperature approached 100 degrees. When we finished, I just could not understand why I felt so ill. Nothing seemed to help pull me out of it including dipping in cool water and lying in the shade. I eventually threw up violently. I didn't start feeling better until I started taking back in electrolytes.

I quickly learned about replacing electrolytes during long runs. What works for one person might not work for another. We are all different. But for most people, an electrolyte drink just won't be enough. I became introduced to supplements such as Succeed! Caps. Things really improved for me as I learned to take in the right amount of salt for me. It was a game of trial and error, plenty of practice and experience. One trick I used in the early years was to bite into one of the caplets. If it tasted wonderful, I knew I truly needed it. This helped me figure out just how often I should take the supplements.

One summer when I was running across the rugged Highline Trail in the High Uintas, I came across a father and son coming back down from Kings Peak, the highest peak in Utah. The son was in distress, continually throwing up, and the afternoon was warm. I questioned the father about his son's intake. Sure enough, they had only been drinking water and not eating salty foods. I gave them a quick speech about electrolytes and gave them some Succeed! Caps. I'm confident that they later felt better and made it back to their camp.



As the race director of Pony Express Trail 50 and 100, I warn runners every year about electrolyte intake. Since this is a crewed race, it should be pretty easy to have what you need to fuel. In 2015 after two runners finished, they both went through difficult recovery, nearly passing out and going through a bonk. As I queried each, it became pretty apparent that both had not been taking in enough electrolytes. I helped both, gave them both supplements, and within an hour they pulled out of it.

For me, the first signal that I am low in salt in nausea or an acid stomach. I recall in 2006 when I ran my first Wasatch 100, that my stomach was very ill and I refused to take in more salt, somehow convinced that salt was causing my problem. It was just the opposite. Hours later when I started suck on some salty jerky, I instantly started to feel better. I would say 80% of the time, I can solve nausea by simply taking in a couple S-caps.

It took me awhile to learn about fluid retention. After many of my 100s I discovered that I had actually gained several pounds and for the next day or two my body would dump an amazing amount of fluid. For me, typically fluid retention will start occurring during the second half of a 100-miler, during the cool night. For me, through experience I have learned that the cause usually is because I have not been taking in enough salt, but continue to drink plenty. If the fluid retention continues, it can drastically impact my performance, contribute to a nauseous stomach, and cause blisters to appear on the feet. The body needs to dump the fluid, but for some reason holds on. My solution usually is to shift to straight water, only sipping now and then unless I feel thirsty. Also, I will take in more S-caps. Usually within a couple hours my body will start eliminating the excess fluid.

I can monitor this by looking at my hands. If my veins are popping out, I'm dehydrated. If my hands are swollen, I'm retaining fluid. During a 100-miler I can observe swings back and forth. I know that serious fluid retention can be hyponatremia, when my sodium level gets dangerously diluted in the blood. I take that seriously and pay careful attention to my electrolytes intake even during a cold night.

Rookie runners think the solution to electrolyte replacement is taking in electrolyte drinks such as Gatorade, GU2O, etc. But if you are retaining fluids, the last thing you need is more fluids. For most runners these drinks don't have enough electrolytes for ultra-distances. I'm a believer in the electrolyte supplement capsule. All of these capsules are not created equal. Learn and know how many per hour of each brand that you should take.

Another signal to me that I may be depleting my electrolytes is cramping. If I am managing my electrolyte balance well, the cramping usually never comes. If it does, quite often I can diffuse the cramping by quickly taking in extra electrolytes.

My Fueling

I'm pretty simple when it comes to what I take in during a race or long adventure run. I go with what seems to work and am not into trying to get sponsored by various products. What I eat and drank has evolved.

For a 50-mile race or the first 50-miles of a 100, I will generally consume mostly liquids. Diluted Ensure for a drink, and gels for calories work well for me. Hammer's Heed also works well for my stomach. On adventure runs I might even take Instant Breakfast packets and add that to water. I cannot tolerate Gatorade. I will also generally run with some candy in my pockets. I like peanut butter M&Ms (don't melt quickly) and soft sour Jolly Ranchers.

After about 50 miles, typically my stomach has had enough of the Ensure and probably also enough of the gels. I have to mix things up. Switching to something like Heed can work. Eating candy instead of gels can also get me the calories I need. Recently I've discovered that baby food packets can be great, pudding, yogurt, strained fruit can all be great and can be downed in seconds.

At the aid stations I will drink Coke or Gingerale. I also may quickly eat a PB&J sandwich or bean rollup. Boiled potatoes dipped in salt are always great. I also can't pass up an Oreo. Matt Watts introduced me to taking burritos with me on adventure runs. I may also have one in my drop bags during races. At night soup works, chicken broth or potato soup. I avoid noddles. Those just sit in the stomach too long. A greasy grilled cheese sandwich or cheese quesadillas during the night can be heavenly. Hot chocolate when it is cold and calories are needed, can really perk me up. When the stomach goes south, at times some nice greasy bacon can kick start it again. If the greasy, salty food is what I crave, I know I'm doing poorly on my electrolytes.

Puking happens. Some runners boast that they never barf. I think they are missing an important technique that is needed at times. Sometimes the stomach just won't process anything and you know that you are stuck. Yes, you can plod along slowly until things eventually improve, or you can empty things out and start over again. If you are truly skilled, you can puke without breaking stride. I can. I then have to treat the stomach very carefully, like a baby. I start slow, drinking straight water. Calorie input much be careful. Electrolyte input is likely a must. Generally things will start improving to let me run fast again and eat more.

Recovery

I don't use any fancy recovery drinks when I finish a race. Perhaps some work. I usually finish running pretty hard and don't eat well during the last hour or so in a race. Eating quickly when I finish is really important to avoid a bonk. I'll take a couple S-caps, drink an Ensure, and hopefully get a chance to eat a burger and fries. Cold orange juice for some reason hits to spot.

In the couple days after running a hard 100, I usually lose my appetite and my taste buds act funny. Not much tastes good. I can't tolerate sour drinks or sodas. Salty foods generally work, but I just can't eat a lot for a couple days until my systems all recovery. Fluid retention goes down eventually and within three days I've generally bounced back.

Fueling is so important. If I have a poor race, the cause about 75% of the time is poor fueling. All the training investment put in can go out the window if you don't fuel well during a race. Reminders work for some. I ran with one runner who had a timer go off on his watch every hour to remind him to take in electrolytes and food. You need to fuel well. What works is different for every runner. It takes experimentation during training runs (not races). Find out what works and then stick with it.