

Fueling for Success

Half Marathon (13.1 miles)

This step-by-step fueling protocol is super easy to put together, it's just as easy to follow, it doesn't require that you carry a ton of stuff on your body it will save you time, and, best of all, it's highly effective.

Before you get to the fueling protocol, here is some very important and useful information...

5 Simple Ways to Improve Athletic Performance Now

By: Steve Born

While there are numerous steps that you can (and should) take to optimize athletic performance, here are a couple of super easy ones. Start with these right away and you'll experience noticeably rapid improvement in your endurance.

1) Stay properly hydrated all day long. With approximately 60% of your body being comprised of water, it goes without saying that it's vitally important to maintain optimal hydration status all day long. Unfortunately, a lot of people—perhaps you?—live in a state of perpetual dehydration, and that negatively affects athletic performance and overall health. Starting now, gradually increase your fluid intake—primarily from pure, clean water—so that the total number of ounces you're drinking on a daily basis is equal to 0.5 to 0.6 of your body weight in pounds (e.g., 180-lb athlete should consume 90 – 108 ounces of fluids daily, in addition to what is being consumed during exercise). During exercise, drink 16-26 ounces per hour, and up to 28 ounces per hour during hot weather.

2) Fuel lean. It's interesting to know how many calories you're burning every hour during exercise; however, that amount isn't really a factor in terms of how many calories your body can accept in return from your fuel donation. The goal of caloric intake is to consume the least amount necessary to maintain energy levels where you want and need them to be hour after hour. For the majority of athletes, this represents an intake of 120-180 calories per hour. Larger athletes (200+ lbs.) can consume 200-or-slightly-more calories. And if you find that's not quite enough calories, that's an easy fix—you simply consume a few more. Remember, it is ALWAYS easier to fix a “not enough” problem than an “uh oh, I overdid it and now my stomach is rebelling” problem.

3) Ditch the sugar. Sugar is defined as a one- or two-chain saccharide molecule, which includes glucose, sucrose, fructose, etc. These “ose” sugars are also known as simple sugars. We do not use any of them in our fuels; instead, we use a starch-like complex carbohydrate known as maltodextrin, for two primary reasons:

- You can digest greater amounts of calories from maltodextrin than from any short-chain (aka simple) sugar. As one nutritional scientist states, “maltodextrin

allows one to swallow more energy in less volume.” With maltodextrin you get the full amount of calories that you need for energy production, and with no delay in exiting the GI tract. Fuels containing simple sugars must be mixed at very calorically weak solutions in order to be digested with any efficiency, so your body won't be getting the right amount of calories it needs. However, when athletes try to make a “double-strength” mix of a simple sugar fuel, that too-high sugar mixture does not match body fluid chemistry, which means it just sits in the stomach undigested for a lengthy period of time... and that means severe stomach distress. You won't have that issue with maltodextrin.

- Maltodextrin goes to work extremely quickly in producing energy because it's a high Glycemic Index carbohydrate; in fact, it's the same as pure glucose (both are 100). That's a good thing because you don't want to wait for energy production to happen; you want that energy as quickly as possible, and that's what maltodextrin will do. Another benefit with maltodextrin is that because it's comprised of hundreds of saccharide molecules all weakly bonded together, it will provide a much more consistent and longer-lasting energy than glucose or any other simple sugar, and without that undesirable “peak and valley”, “flash and crash” energy that is typical with simple sugars.

4) Don't eat for 3 hours prior to your workouts and races. By refraining from consuming any calories in the 3-hour period prior to your workouts and races, you put your body in the ideal physiological state to use its finite stores of muscle glycogen most efficiently, while also utilizing the vast amounts of calories from body fat stores more effectively. Adopt this practice in all your workouts—even the early morning ones—and you'll start seeing massive improvements in your endurance in a relatively short time. Note: If you must have some calories prior to the start of exercise, consuming something that's easy to digest (e.g., a serving of [Hammer Gel](#)) 5-10 minutes prior to the start—but no further out—is acceptable.

5) “Refill the tank” ASAP after all your workouts. Your body wants to reward you for the efforts you made in training, strengthening the immune system, rebuilding muscle tissue stronger, and storing more minutes of readily available fuel (glycogen) in the muscles. All you have to do to enjoy all of these endurance-enhancing benefits is supply your body with the materials it needs right away—ideally within the first 30 minutes after exercise (the sooner the better)—meaning complex carbohydrates and high-quality protein such as found in [Recoverite](#) and [Organic Vegan Recoverite](#).

FUELING SUGGESTIONS

1) Success "during" starts "after"! It's absolutely vital that you "refill the tank" after all your workouts... this is a major key for noticeably enhancing athletic performance. When you begin a workout or event/race, the primary fuel your body uses for the first 60-90 minutes or so is known as muscle glycogen. The more consistent you are with ASAP post-exercise fueling—[Recoverite](#) or [Organic Vegan Recoverite](#) is ideal for that—among the many benefits you'll receive is more minutes of glycogen stored in the

muscles—maxing out at somewhere between 60-90 minutes—ready to serve you in future workouts and races.

2) Finish all calorie consumption 3 hours prior to start. See #4 in the earlier article as to why this is so important.

3) “Pre-emptive strike” dose of [Endurolytes](#) or [Endurolytes Extreme](#). Taking a dose of Endurolytes or Endurolytes Extreme 15-30 minutes prior to the start will cover your electrolytic mineral needs during the first hour of the race, allowing you to focus on getting into a nice, smooth rhythm instead of having to consume pills at that time. The dose of Endurolytes can be anywhere from 1-6 capsules, with most athletes using 2-4 capsules an hour, the amount dependent on body weight and temperature conditions. If you’re competing in hot-weather conditions—and especially if you’re not very acclimated to those conditions—I suggest taking a pre-race dose of 1-2 Endurolytes Extreme capsules.

4) Consume 1-2 servings of [Hammer Gel](#) 5-10 minutes prior to the race. Consuming 1-2 servings of Hammer Gel at this time will supply some calories to augment muscle glycogen stores but without interfering with the efficiency of how your body will use its finite stores of muscle glycogen as a fuel source.

5) Fuel selection during the race.

If your race is in the 1.25-to-3.0-hour range, a carbohydrate-only fuel, Hammer Gel or HEED, will work perfectly.

- Each serving of [Hammer Gel](#) contains 90 calories (Nocciola and Peanut Butter contain 100 calories). One serving every 30-45 minutes is our recommendation.
- Each scoop of [HEED 2.0](#) contains 110 calories. I (Steve Born) personally use 1.75 scoops of HEED 2.0 an hour, which supplies 192.5 calories, an amount that works well for larger athletes like me (I’m 200 pounds). For light-weight athletes, 1.0 scoop (110 calories) per hour works well. Medium-weight athletes will find that to 1.25 scoops (137.5 calories) to 1.50 scoops (165 calories) per hour is an excellent amount.

If your race will be over 3.0 hours, you have several fueling options available:

Option #1 – A multi-hour bottle of Sustained Energy 2.0 or Perpetuem 2.0

- Each scoop of [Perpetuem 2.0](#) contains 90 calories. I (Steve Born) personally use 2.25 scoops of Perpetuem 2.0 an hour, which supplies 202.5 calories, an amount that works well for larger athletes like me (I’m 200 pounds). For lightweight athletes, 1.0 scoop (90 calories) to 1.25 scoops (112.5 calories) per

hour works well. Medium-weight athletes will find that 1.50 scoops (135 calories) to 2.0 scoops (180 calories) per hour is an excellent amount.

- Each scoop of **Sustained Energy 2.0** contains 100 calories. I (Steve Born) personally use 2.0 scoops an hour, which supplies me with 200 calories. For light-weight athletes, 1.0 scoop (100 calories) to 1.25 scoops (125 calories) per hour works well. Medium-weight athletes will find that 1.50 scoops (150 calories) to 1.75 scoops (175 calories) per hour is an excellent amount.

The advantages of the multi-hour fuel bottle

In regards to Perpetuem 2.0 or Sustained Energy 2.0, instead of making a 1-hour bottle, which would mean I'd have to drink a full bottle of flavored/semi-flavored liquid hour after hour (which I wouldn't like), while also having to stop and make more (which burns up precious time), I would make a bottle of Perpetuem 2.0 or Sustained Energy 2.0 that contains a few hours' worth of fuel. To make (for example) a 4-hour bottle I'd start by using the smallest water bottle I have (less flavored drink mix I have to consume). Then, I fill that water bottle 1/3 full of water, add a couple of scoops of Perpetuem 2.0 or Sustained Energy 2.0, put the lid on, and shake well. I'll repeat the process until I've mixed the appropriate number of scoops in my one bottle (for me that's 9 scoops for Perpetuem 2.0 and 8 scoops of Sustained Energy 2.0). Now, because I have 4 hours of fuel in one bottle, I only have to drink 1/4 of that bottle every hour, augmenting that with water from a hydration pack or from the aid stations to take care of my hydration needs.

Again, the benefits of using a multi-hour bottle of fuel:

- You get to drink and enjoy plain water from another source (hydration pack or from the aid stations) to take care of hydration needs and to cleanse the palate. Yes, there is some actual liquid left in the multi-hour bottle of fuel. However, over the course of 3-4 hours it's pretty minimal so you can basically consider that bottle of fuel a "calories only" bottle.
- By making a multi-hour bottle of fuel you don't have to stop and make more along the way, which will save you time.
- By keeping your calories separate from your fluids you can keep track of your intake of both—calories and fluids—with greater precision. Why? Because you're taking care of those two areas of your fueling from sources that are independent of each other. Additionally, in hot weather races your ability to process calories may diminish while your fluid and electrolyte requirements may increase. Keeping the three entities of fueling—calories, fluids, and electrolytes—independent of each other will allow you greater flexibility with your dosing, making it easy to alter your intake of any or all of those fueling components whenever necessary.

If you need to, take a Sharpie pen and mark your bottle off into four equal sections. This will give you a visual as to how much to drink on a given hour.

Option #2 – Protein-containing flavors of Hammer Gel (Peanut Butter, Peanut Butter-Chocolate, or Nocciola)

Option #3 – A combination of carbohydrate-only flavors of Hammer Gel or HEED 2.0, plus Endurance BCAA+

- Each serving of **Hammer Gel** contains 90 calories (Nocciola and Peanut Butter contain 100 calories). One serving every 30-45 minutes is our recommendation.
- Each scoop of **HEED 2.0** contains 110 calories. I (Steve Born) personally use 1.75 scoops of HEED an hour, which supplies 192.5 calories, an amount that works well for larger athletes like me (I'm 200 pounds). For light-weight athletes, 1.0 scoop (110 calories) per hour works well. Medium-weight athletes will find that to 1.25 scoops (137.5 calories) to 1.50 scoops (165 calories) per hour is an excellent amount.
- **Endurance BCAA+** supplies key amino acids that will be similar to the protein in **Perpetuem 2.0**, **Sustained Energy 2.0**, and the protein-containing flavors of Hammer Gel in helping fulfill a small portion of your energy requirements during prolonged exercise, while also protecting against muscle tissue breakdown. Dosing is 2-4 capsules 15-30 minutes prior to the start, with doses of 1-2 capsules per hour during.

6) Electrolytes and fluids Continue to take **Endurolytes** or **Endurolytes Extreme** hourly to satisfy your electrolytic mineral requirements, and drink water only from your hydration pack or the aid stations (no sugary sports drinks!) to fulfill your hydration needs.

7) ASAP after the race. "Refill the tank" ASAP with **Recoverite** or **Organic Vegan Recoverite**. Refueling your body with two scoops of Recoverite within the first 30 minutes after your races takes advantage of the glycogen synthase enzyme when it's most active. This allows the body to replenish and increase its stores of glycogen, while also providing the raw materials (the amino acids from protein) to help rebuild the muscle tissue and support the immune system.