

Practice makes perfect. Any baseball, basketball, or football player will tell you it's been a mantra repeated to them throughout their years of competitive play. Unfortunately, runners often forget this time-honored rule when it comes to racing. We get so preoccupied with the physiological training adaptations needed to make gains in fitness that we often forget that racing itself is a skill. This is especially true in the marathon and half marathon because, on top skills like pacing and mental toughness, you're adding the variable of consuming energy and fluids.

Getting Your Stomach Accustomed to Eating and Drinking on the Run

One of the main problems with eating and drinking on the run is that it is difficult for your body to process the nutrition you consume. As you run farther and harder, your body becomes increasingly distressed. As your effort continues to increase, your body diverts energy from non-essential functions, such as digestion, to your muscles and brain to keep you going at the pace you're running. So, when you consume those energy gels and jelly beans, it takes much longer for them to get processed into the blood stream where they can be used by the muscles for energy. Sometimes, if the digestive system isn't working well at all, your body will actually reject the fuel or fluid you put in, which is why many marathoners often experience stomach issues.

To train your body to become more efficient at processing nutrition while running, you need to practice during your training runs. However, this doesn't mean practicing taking energy only while running at an easy pace – it's not specific to what you're doing in the race. You need to practice eating and drinking when your body is under duress as well so even during hard efforts. This will specifically train your body to become more efficient at processing nutrition while running hard, which is exactly what you want to accomplish on race day.

Get Even More Specific

The running industry is filled with nutritional products that are designed to help you fuel during a marathon. You have [gels](#), jelly beans, [shot blocks](#), [bars](#) and of course a myriad of drinks such as [GU](#) and [Eload](#). Therefore, it is important you find out which type of product you like best. For some, the consistency of gels will make them gag while others love the taste of gels and their stomachs can't handle anything more solid. Each person reacts differently, so it is essential that you start practicing early in your training with different products to find the one you like best. Waiting until race day is a sure fire way to fail.

If you think finding the right type or brand of energy product is difficult, you'll be sad to hear that you also need to find the right flavor. I can't count the number of flavors available for energy gels and nutrition products; however, each one can react with your stomach in a different way.

While I think that most of the products and brands are roughly equal in terms of quality, avoid those that contain protein. Your body can't digest it easily when running, and while it's been proven to help with recovery, one hasn't seen any convincing science that proves it helps with fueling.

If you're going to rely on what products are available on the course, you must practice using them before race day. Do some research on the official race website and find out what will be offered on the course. Go to the store and get the same exact flavors and brands available on

race day. I know this seems like overkill, but the slightest change in routine can leave you in for a rough day of racing.

Develop a Strategy

Finally, it's important that you develop a nutrition strategy in advance of race day. This will include exactly when you'll plan on taking fluids and nutrition and how you plan on taking them. Will you bring your own water bottles or will you use the water stations available on the course? Will you walk through the stations or will you attempt to run through them?

Running or walking through the station is an individual choice, but I suggest that if you're attempting to run sub 3:45 for the marathon or sub 2 hours for the half marathon that you run through them. However, slowing your pace a bit to ensure you maximize consumption is fine. If you're planning on a finish slower than 4 hours, you will benefit more from walking through the station and getting in as much fluid or fuel as possible.

If you're using your own water bottles, make sure you've practiced with them beforehand. You don't want any unnecessary chafing from wearing a water pack you didn't try first. If you're going to use the aid stations available on the course and plan on running through the water stops, I suggest heading to the store and picking up some paper cups. Take them to the track and fill them with water and set up a table to put them on (or if you have young kids who love helping, you can have them hold the cups for you). Practice running at a little faster than marathon pace, grabbing a cup, and taking a drink. I guarantee that the first couple of times you run through your makeshift water stop, more water will end up on the ground or up your nose. Here is a hint, grab the cup and pinch it at the top on one end. This will make one end more of a funnel and also prevent the water from splashing out as easily. Also, remember that you don't to get all the water down in 5 seconds; you can take your time while drinking and remember to breathe.

The marathon is a long event with the potential for many things to go wrong. However, the more you can practice during your training, the greater your chances of success.

Your Basic Fueling Needs

There are two main things you need to be concerned about when you run or race long: hydration and fuel. While most of us can run 60- or 90-minutes with only a little water, anything beyond that point without adequate calories will result in a very unpleasant—and likely sub-par—performance.

Outlining Your Personal Needs

Exactly how much you should consume per hour in a race like a marathon is a function of several factors: how long you will be out there racing, how "hard" you'll be racing (intensity), the conditions of the race, and finally what you personally can eat with success.

Use the Marathon Carbohydrates Per Hour selection chart to identify a starting point for your calories per hour. The chart works by syncing calories per hour based on your

intensity level. The harder you are running, in general, the fewer calories you are able to consume. Conversely, the longer you will be out on the course (4, 5 or 6+ hours), the more calories you will need over time to continue your effort.

The Green=Good label is the ideal place to start estimating your carbohydrate needs. The Light Green=Good/Light label is also okay, as it follows the "slightly lighter is better" approach, allowing you to add more nutrition as required. The Yellow / Orange / Red sections show how you move further out the carbohydrates/hour spectrum and at what point you might run into difficulty.

Marathon Carbohydrates per Hour Selection Chart

Across All Sources: Gels, Blocks, Fluids, Etc.

	150cals / 38g	175cals/44g	200cals/50g	225cals/46g	250cals/62g	275cals/70g	300cals/75g
6:00/mi (3:43/km)	Good	Bit Dense	Very Dense	DANGER			
6:30/mi (4:02/km)	Good	Bit Dense	Very Dense	DANGER			
7:00/mi (4:20/km)	Good/Light	Good	Bit Dense	Very Dense	DANGER		
7:30/mi (4:39/km)	Good/Light	Good	Bit Dense	Very Dense	DANGER		
8:00/mi (4:58/km)	Too Light	Good/Light	Good	Bit Dense	Very Dense	DANGER	
8:30/mi (5:16/km)	Too Light	Good/Light	Good	Bit Dense	Very Dense	DANGER	
9:00/mi (5:35/km)	Too Light	Good/Light	Good	Bit Dense	Very Dense	DANGER	
9:30/mi (5:54/km)	Too Light	Good/Light	Good	Bit Dense	Very Dense	DANGER	
10:00/mi (6:12/km)	DANGER	Too Light	Good/Light	Good	Bit Dense	Very Dense	DANGER
10:30/mi (6:31/km)	DANGER	Too Light	Good/Light	Good	Bit Dense	Very Dense	DANGER
11:00/mi (6:50/km)	DANGER	Too Light	Good/Light	Good	Bit Dense	Very Dense	DANGER
11:30/mi (7:08/km)	DANGER	Too Light	Good/Light	Good	Bit Dense	Very Dense	DANGER
12:00/mi (7:27/km)	DANGER	Too Light	Good/Light	Good	Bit Dense	Very Dense	DANGER
12:30/mi+ (7:46/km+)	DANGER	Too Light	Good/Light	Good	Bit Dense	Very Dense	DANGER

Start with the Green = Good boxes; feel free to even go to the Good/Light option for your pace range. Experiment with more/less calories on your longer runs and observe how you handle the energy: if you bonk it's too light; if you burp or slosh it's too much. Good luck!

Testing Your Nutrition Plan

In order to properly test your nutrition plan, you need several things to be lined up. First, you need a long run of at least 90 minutes on the schedule. Second, you need to map out exactly how many calories you will be taking in to cover the duration of the run. Third, you'll need fluids to keep you hydrated and help you process the carbohydrates you are ingesting. Fourth, and final, you'll need a rhythm in which to take your food.

While everything else is simple, the rhythm is actually a critical part of how you'll proceed. From a hydration perspective, you should be taking in some water every 10 to 15 minutes (as you feel thirsty). Your nutritional rhythm depends on how many calories you are taking in and in what form.

If you are opting for a gel form (easy to digest and carry), and you are looking at 200 calories per hour, then you can do:

- a 100 calorie gel every 30 minutes with water; water rest of the time.
- alternate water and 50 calories of sports drink every 15 minutes, with a 100 calorie gel at the 45-minute mark.

There is no one single right way to sync your fuel; create a plan and put it to the test in your next long run and then tweak it from there. You might need more water, fewer/more calories, different calories/flavors later in the day, perhaps even some caffeine to keep you sharp.

Your Nutrition Portability

Having nutrition is one thing; taking it with you is entirely different. Your plan is only as good as your ability to execute it, and odds are your long run route doesn't have permanent aid stations manned with volunteers and ice water. As such you'll need to plan out how to have access to your nutrition.

Option #1: I personally use and recommend a water belt, hand held device, or shoulder pack, for carrying your fluid and caloric needs on a long run or even race day. There are multi-bottle options with different packs and pockets to hold all your stuff, and it doesn't bounce.

Option #2: Use your car as a central point and run out/back or a butterfly pattern route to get the miles in without getting too far from your car.

Course Resource Research

Once you have a basic plan and have tested it out during multiple long runs, then you can begin to formulate a plan for race day. Remember that each race is different in terms of aid station placement and what they offer at each station, so be sure to check the official website. Then you can head out to the store and pick up the items so you can begin to incorporate those specific items into your own rhythm.

This is a critical part of your preparation as it will help you determine exactly what / how / when you'll be fueling on the big day. Note that it might take one or two long runs for your body to "like" the different fuel source, so don't give up on it right away.

Finding your personal fueling pattern isn't easy, but once you have built it out you can get down to the business of really racing and chasing your marathon potential.