

All-Navy Sports: Marathon

“People can't understand why a man runs. They don't see any sport in it. Argue it lacks the sight and thrill of body contact. Yet, the conflict is there, more raw and challenging than any man versus man competition. For in running it is man against himself, the cruelest of opponents. The other runners are not the real enemies. His adversary lies within him, in his ability, with brain and heart to master himself and his emotions.”

-Glenn Cunningham - American runner, Olympic Games medalist

It is well documented that athletic performance and recovery from physical training is enhanced by optimal nutrition. (1) Due to weight requirements, logistics and different physical requirements of each sport, it is important to individualize your nutrition and hydration plan and maximize your nutrient consumption to ensure your best performance. The below information, discusses the ideal way to prepare before and during the marathon.

PRE-RACE

Pre-race nutrition for a marathon should begin several days prior to the race with carbohydrate loading. Carbohydrate loading is the most effective way to improve performance for events lasting longer than 75 minutes. The way to carbohydrate load is to eat 60-70 percent of the diet from carbohydrates three to five days prior to the race as training is tapering. This increase in carbohydrate increases the glycogen (stored carbohydrate) stores in the muscles and liver which will be used on race day. While you are carbohydrate loading it's important to reduce the amount and intensity of training that you are doing. This taper will allow for the muscles to completely recover from micro-trauma, replenish with glycogen and allow for adequate hydration. Foods that should be included while carbohydrate loading are cereals, grains (oats, bran, wheat, barley) potato, popcorn, bread, crackers, pasta, fruit, sports drinks, and beans. While increasing carbohydrate, it's also wise to limit fiber consumption in the final days of carbohydrate loading. Although fiber is important for regularity and a healthy digestive tract, it can cause unwanted gastro-intestinal issues come race day. Aim for 2/3 of your plate to be covered in carbohydrate and the rest with a lean source of protein. Protein is still very important for muscle recovery, but carbohydrate will be



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most important for performance on race day. In addition to increasing carbohydrate consumption and reducing training, a diligent hydration plan should also be followed. You should consume about 1/2 of your body weight in fluid ounces per day to ensure adequate hydration. An increased amount may be necessary in hot or humid climates. An easy way to measure hydration your hydration level is to observe your urine color. It should resemble a light yellow to almost clear color. It's also important to note that carbohydrate loading can make you feel a little bit sluggish with the additional weight from water and glycogen. Be sure to practice carbohydrate loading before a couple of long runs during training and adjust accordingly. Do not try carbohydrate loading for the first time the week before a big race.

Carbohydrate load by consuming about 4-6 grams of carbohydrate per pound of body weight in the 5 days leading up to a marathon.

For sub-two and a half to three hour marathoners, a pre-race meal is arguably more important than carbohydrate during the event. A pre-race meal should consist of a large percentage of carbohydrate and a small amount of protein. Many runners limit their fat consumption before a marathon, which is wise because fat digests more slowly than carbohydrate. Although, your nutrition training will dictate what you should eat before a big race, there is an ideal pre-race meal. For optimal performance and a limited chance of side effects such as an upset stomach, it is prudent to choose low-fiber carbohydrate and lean protein as a pre-race meal. Some examples are cereal with low-fat milk, rice and chicken, toasted white bread or bagel lightly covered with peanut butter and jelly, a turkey sandwich on a roll, or crackers lightly covered with almond butter to name a few. If solid food is out of the question, beverages are often tolerated more easily because of how quickly liquids travel through the gut. Try chocolate milk, soy milk or just plain sports drink to top of f glycogen stores and hydrate. Avoid juice the day of a

race. Juice increases the risk of stomach distress in many runners.



DURING THE RACE

The most important thing about marathon training is to practice your hydration and nutrition plan as diligently as your running program. Your training

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log in the months leading up to the marathon should include details about the distance you ran, the weather, the amount and type of fuel used (gels, sports drink), the amount and type of hydration used and how you felt mentally and physically. It's also helpful to note the amount of sleep you had and how you felt before your run and the days after, especially for your long runs.

As far as carbohydrate needs, 30-60 grams of carbohydrate per hour is a perfect range to target. This guideline may need to be adjusted from athlete to athlete and again, should be practiced in training. The more popular sports drinks have approximately 14 grams of carbohydrate per 8 ounces. Reality on the race course is that cups at aid stations hold about five ounces of sports drink or water, which would be about 8-9



grams of carbohydrate. It is also recommended to research what product will be served on the course that you will be running. Then practice with that product in training to be sure that you tolerate it or make alternative plans to carry your favorite fuel.

If you like sports blocks, sports beans or gels, practice with them too, but be sure to drink at least five ounces of water with them to dilute the sugar. These sources of fuel are specially formulated to absorb rapidly and can cause stomach distress in some people when they're not diluted.

Ideally, drinking about 8-15 ounces of fluid every 15-20 minutes of a run is best to stay hydrated, but the best thing an athlete can do is to weigh themselves, while naked, both before and after an hour long run. For every pound of weight lost on the scale, 16 ounces of fluid per hour should be added to the next run. If an individual loses two pounds in an hour run, they should drink 32 ounces of fluid per hour more than what they're already consuming. Climate will alter these calculations so it's helpful to monitor changes at different times of year and in different climates. The end result though, is to know about how much you sweat so that you can replenish it while on the run. Sports drink and water are the most effective performance enhancers on the market. For more on hydration, check out "All-Navy Sports: Hydration".

1. Position of the American Dietetic Association, Dietitians of Canada, and the American College of Sports Medicine: Nutrition and Athletic Performance. *J Am Diet Assoc.* March 2009.
2. IOC Consensus Statement on Sports Nutrition 2010