

Nutrition On The Run

By Emily Miazga

Regardless of which event you chose, the wide array of nutritional information available today can make it tough to decide what's best for you. Whether you're elite or recreational this article offers some practical tips and guidelines.

Nutrition needn't be confusing or conflicting. It's all about taking care of the basics. Regardless of whether your goal is the 10k, Half Marathon or Full Marathon, the guidelines are the same.

To get started, let's have a quick look at the three macronutrients that make up your total caloric intake and then discuss the general techniques of calculating your training nutritional needs.

The Three Macronutrients

1. Carbohydrate
2. Protein
3. Fats

Carbohydrate (CHO)

Carbohydrates comprise simple (natural and added sugars) and complex (starches) sources and makes up 60 to 70 percent of the endurance athlete's total calories.

Simple CHO comes from all fruits, non-starchy vegetables, milk, yoghurt and added sugar like honey and table sugar. Complex CHO comes from all starches, grains, breads, cereals, rice, pasta and starchy vegetables like potatoes and beans.

Much of your training nutrition is focused around CHO because it is the primary source of fuel and recovery nutrition. Plus CHO provides many micronutrients and dietary fibre. The glycaemic index (GI) ranks the quality of the CHO source, with low GI ranking being higher quality and higher GI being lower quality. Generally the more processed a food is, the lower the quality and higher the GI.

Most fruits, vegetables, grainy bread, muesli, porridge, dairy products, long grain rice and pasta are low GI. Tropical fruit, new potatoes and sucrose are moderate GI. Processed cereals like Weet-bix, cornflakes, baked potatoes, short-grain rice and sports gels and drinks are high GI.

Low GI foods are good to eat prior to training because they induce a sustained energy release. High GI foods are good to consume as recovery foods because they elicit a rapid rise in blood sugar which helps to speed recovery.

Protein

Protein makes up about 15 percent of total calories. Protein functions to build, repair and maintain body tissues. Most endurance athletes consume ample protein simply through having a high caloric intake. As a clinical dietician I rarely saw an athlete, vegetarian or meat-eater with a deficiency in protein (with the exception of eating disorder cases).

Protein comes from all meat (beef, lamb, pork, etc), fish, seafood, milk products, cheese, eggs, beans, pulses, soy foods, nuts and starchy CHO like bread and pasta.

Fats

Fats make up the remainder of your total caloric intake. They have an important role in making up cellular structures and hormones, providing energy and carrying the fat soluble vitamins, A, D, E, and K.

It is a good idea to follow a low fat diet, so not to displace the intake of the all-important energy nutrient, CHO.

It's also wise to choose healthy fats, such as olive oil, avocado, nuts and fish fat. Certainly, it is wise to limit the intake of saturated fat from meat, hydrogenated margarines, processed oils and deep-fried fast food.

Foods for Training

Choose high carbohydrate (CHO) foods without too much fat or fibre. Some examples include energy bars, sports drinks, energy gels, muesli bars, creamed rice, etc.

You will need about 0.5-1.0g of CHO per kilogram of body weight per hour of training. For me, at around 63kg, about 50g of CHO per hour works really well. If you're bigger you'll need more and if you're smaller, you'll need less. It takes practice and a bit of label-reading to work this out.

Make sure the food you use is easy to carry, easy to access and easy to eat while you are under physical exertion. Something that is easy to digest and well tolerated by your stomach. Having said that, don't overload the fibre during training because too much can cause abdominal issues.

When training for longer events like a marathon, where you might regularly train beyond two hours, I find it beneficial to use a variety of different foods. The primary fuel may be gels and energy drinks, however "real" food like energy bars, sandwiches, or potatoes, breaks up the monotony of sports foods alone plus provides some satiation especially for long runs. Using a bit of protein and fat, like a peanut butter or cheese and marmite sandwich can help to achieve both energy needs as well as a hungry tummy. Of course, this is tough when running so something like a muesli bar can work well alongside gels and energy drink.

Hydration

Using sports drinks give two benefits in one: hydration and energy. Good sports drinks have easily absorbed carbohydrates and electrolytes (e.g: sodium).

On average your fluid needs are about 150 to 250ml per 15 minutes of exercise and this will vary depending on the weather conditions and the individual's own sweat rates.

Sodium is the most important electrolyte to worry about; make sure your drink has at least 400mg per litre. Mix sports drinks according to package directions because when you dilute the solution you also dilute the sodium content. In very hot weather you might try salty food sources to add sodium intake. Do not use salt tablets; they are too concentrated and can cause severe gut cramping!

While dehydration is something to avoid, over-hydration can be even more troublesome due to a condition called hyponatremia. This is usually caused by drinking too much plain water, which dilutes sodium levels in the blood and cells. It is seen mostly in events ultra-distance events and can lead to collapse, and occasionally, death.

In all cases the key is to never to use thirst as a gauge for hydration needs, and to use an energy drink with adequate sodium levels. And remember that you can include the carbohydrate from the sports drink in calculating your total CHO targets.

Lastly, prior to your race check what energy drink brand the event supplies at aid stations and try to use it in your training so the body gets used to it.

Pre-Training Snacks

Prior to training you should top up energy and hydration levels with a snack and 500ml to 1000ml of fluid one to two hours before heading out.

Snack Ideas

Multigrain sandwich w/peanut butter & honey	50g CHO
Em's Power Cookie® & piece of fruit	60g CHO
Muesli bar & pottle lowfat yoghurt	60g CHO
Chicken/tuna sandwich w/400ml fruit smoothie	75g CHO
400g tin creamed rice	80g CHO
2 cups left-over veggie pasta	80g CHO

Easy and Recovery Training

For easy runs and runs less than 90min, providing you are well fuelled and hydrated going into them, you do not need to take any food or fluid with you. But if it is hot and/or you are not fully hydrated then it is a good idea to take 500ml to 1000ml of water or energy drink and use it as an opportunity to practice drinking while moving.

Long Runs

For runs longer than 90 minutes pay closer attention to hydration and energy needs. The target is 0.5g-1.0g of carbohydrate per kg body weight per hour. Then fine-tune your needs by practicing in training.

Long Run Example

If a 75kg athlete's personal energy needs (based on body weight) worked out to be 60 grams of carbohydrate per hour, and they wanted to do a three-hour training run prior to the Christchurch Marathon, then they might try this:

2 litres energy drink (200-250ml/20min)	80g CHO
1 energy gel every 40min	100g CHO

The total intake for this regime is 180g over a three-hour run, which is 60g per hour.

This example is a good starting point for most men. Women might start with 1.5ltrs energy drink and a gel every 45min. Then just fine-tune it as per your response during long runs.

Post-Training Recovery

There is a lot you can do with nutrition to maximize recovery between workouts. After hard training sessions (high intensity runs or runs longer than 90min), it is very important to follow the regimen below. It may not always practical with meal timing but make sure you at least get in the initial feeding and then follow up with a main meal that is high in carbohydrates:

Eat and drink within 30min of training or racing as per the following:

- 1.2g of carbohydrate per kg body weight,
- 15-20g protein
- Carbohydrate must be medium to high GI
- Drink 500-1000ml water or energy drink.
- Repeat this regime every hour for four hours, or follow the initial snack with a main meal within two hours.

Recovery Ideas

1 litre sports drink and a protein bar	95g CHO
Banana/honey smoothie	70g CHO
750 ml sports drink & 400g creamed rice	120g CHO
2 Honey & peanut butter sandwiches	110g CHO
2cups mashed potatoes with milk	100g CHO
2cups Quick rice with tuna or chicken	80g CHO

Summary

Remember that what works for someone else won't necessarily work for you. Ideally your nutrition needs come down to body weight, sweat rates and intensity of workouts. And while some people swear by sports specific foods because they are convenient, while others would rather eat "real food".

You are the best judge of what food works best for you. As long as you have your nutritional bases covered, err toward high GI carbohydrates, the food choices and flavors you use are totally up to you.