

Part 2: Avoid The Low-Carb Trap

- *By Matt Fitzgerald | For Active.com*

In [Part 1 of this series](#), Active Expert Matt Fitzgerald discussed how a high-quality diet rich in vegetables, fruit, nuts and seeds, lean protein, whole grains and dairy improves running performance and stabilizes weight. In Part 2 of this series, Matt discusses how the low-carb approach affects running performance.

Back in the 1960s Swedish researchers discovered that a high-carbohydrate diet increased muscle glycogen stores and thereby boosted endurance running performance. The practice of pre-marathon "carbo loading" was born out of this research. Subsequent studies revealed that a high-carbohydrate diet also increased runners' capacity to absorb heavy training loads day after day. Sports nutritionists have recommended high-carb diets for runners ever since.

Well, *most* sports nutritionists have recommended high-carb diets for runners *almost* ever since. Lately, however, some experts have suggested that a low-carb diet is better. They argue that when runners maintain a low-carb diet, their muscles become better fat burners, an adaptation that spares muscle glycogen in marathons and thereby pushes back the dreaded "wall."

Studies have shown that low-carb diets do indeed increase fat burning during running. However, this effect has not been linked to better endurance performance except in very special circumstances, which I'll get into in Part 3 of this series of articles. Meanwhile, new research has reconfirmed that runners just aren't able to train as hard on a low-carb diet because it produces chronically low glycogen stores.

For example, a study conducted by Asker Jeukendrup and colleagues at the University of Birmingham, England, compared the effects of a 41 percent carbohydrate diet and a 65 percent carbohydrate diet during an 11-day period of intensified run training. On the low-carb diet, performance levels decreased and the runners' self-reported fatigue levels increased. On the high-carb diet, performance and energy levels were maintained.

Yet in the real world many runners who have switched to low-carb diets such as the Paleo Diet report that they feel great. The problem is that inadequate carbohydrate intake may reduce your training capacity without your even noticing it. This is especially likely for runners who have been consuming too little carbohydrate all along.

Proof comes from a 2011 study from Australia's Charles Sturt University. In that study researchers had two groups of volunteers perform a challenging run workout after one group had been fed a high-carb diet and the other group had been fed a low-carb diet, where participants' muscle glycogen stores were 47 percent below full capacity. Members of the low-carb group covered 4.9 percent less distance in the workout, yet when asked to rate the difficulty of the session, they rated it as being no more difficult than the high-carb group found it. Those with less glycogen in their muscles had effectively run with a half-empty gas tank and didn't even realize it.

All of this science is quite interesting, but even more valuable is the example set by the most successful runners. The best runners in the world, as everyone knows, are the Kenyans. The diet of the typical Kenyan runner is 76 percent carbohydrate. Compare that to the diet of the typical American, which is less than 50 percent carbohydrate. Kenyan runners get the majority of their calories from ugali, a dish made entirely from cornmeal, that supplies a whopping 38.5 grams of carbs per half-cup serving. The only runners whose abilities rival the Kenyans are the Ethiopians. The diet of the typical Ethiopian runner is 78 percent carbohydrate!

This does not mean that you should automatically aim to get more than three-quarters of your daily calories from carbs. The amount of carbohydrate a runner needs in order to handle his or her training is

tied to the amount of training he or she does. In my book, [The New Rules of Marathon and Half-Marathon Nutrition](#), you will find a handy table that tells you how much carbohydrate to include in your diet based on how much you train (and your weight). The requirements vary from as little as 3 grams of carbs per kilogram of body weight daily for those who do just a few short runs per week all the way up to 10 g/kg for the heaviest trainers.

If you train very lightly, it is possible that you are already consuming more carbohydrate than you need to optimize your training capacity. But it's more likely that the guidelines in that table will require you to adjust your carbohydrate intake upward, especially during periods of heavy training, such as before a marathon. If you do, I am certain that you will get more out of your training and reach the finish line of your event faster.

Active Expert Matt Fitzgerald is the author of [Iron War: Dave Scott, Mark Allen & The Greatest Race Ever Run](#) (VeloPress 2011), [RUN: The Mind-Body Method of Running by Feel](#), [Racing Weight](#), [Racing Weight Quick Start Guide](#), [Racing Weight](#) the second edition, and [The New Rules of Marathon and Half-Marathon Nutrition](#). He is also a coach and training intelligence specialist for [PEAR Sports](#). Learn more at [mattfitgerald.org](#).