

Running Low on Fuel, on Purpose

How no-carb long runs can make you a better marathoner

By Jackie Dikos, R.D.

As featured in the Web Only issue of Running Times Magazine

One long run approach I've found useful is the "glycogen-depleting" long run. The premise is to carry out fueling (or lack of) such that this long run exhausts your glycogen stores differently than does a standard long training run. How you do this can vary, but the goal is always the same: It's to test your body's ability to metabolize fat as an energy source. Improving your efficiency at fat metabolism will delay the rate at which you deplete your glycogen stores during your next marathon. As a result, you should be able to maintain race pace longer.

Research demonstrates how stocked glycogen stores and carbohydrate ingestion during a long run delays time to fatigue. So then, why purposefully train to run low on glycogen? If we fuel well in all training sessions, including all long runs, won't this support better overall conditioning? Doesn't every long run train the body to use fat more effectively? Isn't carbohydrate required to complete fat metabolism? Yes, it's a strategy that could be contested, but it remains an approach I find useful in marathon training.

Aside from testing the fat-burning capabilities of the body, there's a mental edge gained with this style of long run. It makes for a little added discomfort, which can be valuable when carbohydrates are ingested, such as on a more intense training session or race day. The response almost feels enhanced because in previous training experience you had to mentally cope without.

It's important to note that this isn't an appropriate plan for the beginner marathoner. This is for seasoned marathoners who have gained an understanding through personal experience how they best respond to carbohydrate fueling, and what it feels like to have glycogen stores running low. This isn't useful to those who feel they easily bottom out on the run.

It's also not a weight-management approach. The goal isn't to avoid calories; rather it's an effort to develop an efficient fat-as-energy system and a psychological booster when optimal carbohydrate fueling is carried out. It's very important to follow through with good nutrition and energy requirements the remainder of the day.

How to Do a Glycogen-Depleting Run

This strategy starts with an early morning run, such that an overnight fast has robbed you of some of the glycogen stored away from your evening meal. Ideally, you then start the run having not had a morning meal. Slowly wean yourself toward this ideal if you're used to a big morning spread. Coffee is fine, as long as you don't add milk and sugar (and their carbs).

I've yet to have the courage to go completely without. Most often I enter the run with a very small pre-run fix. My carbohydrate intake is no more than 10-15 grams of carbohydrate, considerably less than my ideal fueling. It's just enough to make me feel like I have something on board.

During the run, carbohydrate isn't ingested. Always be armed with gels in the event you feel carbohydrate is necessary. Without question, continue to adequately hydrate and consume electrolytes during the run. If there's ever a doubt go ahead and take the gel. Another approach is to take a fraction of the carbohydrate you would normally consume. For example, take half instead of a full gel.

Because the body is capable of storing glycogen to last about 90-120 minutes worth of running, the run length is between 2 and 3 hours, to push the glycogen envelope. Pace should be conversational, always less than 60-65% of VO₂ max. It's important that these runs maintain a controlled, reduced speed such that fat is the primary fuel source throughout. If the run gets too intense the body will call on glycogen at a faster rate, which negates the purpose of this run style.

When you're finished, focus on refueling. Have 50-100 grams of carbohydrate and 10-20 grams of protein within 10-15 minutes of the run. Follow that up with a carbohydrate-rich meal within the next hour.

This style of long run is specific to the base training phase of marathon training. As training progresses, the last 10 weeks or so, the long run often shifts to more marathon-specific work. For these, you'll want carbohydrate to fuel on the run to help maintain the harder effort. It's also a great time to test your race-day fueling strategy.

Again, this isn't necessarily a run for everyone, and even for those it's appropriate for, it's not what you want to do on every long run. But adding this run style occasionally to your base training may well prove to be beneficial in your marathoning.

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