

Low-Carbohydrate, High-Fat Diets for Athletes

Athlete Scenario

I'm an ultramarathon runner and recently heard from fellow runners that I should eat a low-carbohydrate, high-fat "ketogenic" diet to avoid "hitting the wall." In the past, I've been told to focus on eating more carbohydrates, especially before competition. What's the best way to fuel for my race?

What is a Low-Carbohydrate, High-Fat (LCHF) diet?

- A LCHF diet (also known as a ketogenic diet) typically contains <50 grams/day of carbohydrate, is high-fat (70-85% of calories), and moderate-protein (15-20% of calories).

How is a LCHF diet supposed to work?

- Carbohydrates are the primary fuel for our body, but can be depleted quickly. The body has energy-rich fat stores which may be used when carbohydrate intake is reduced and carbohydrate availability (e.g. muscle and liver glycogen) is low.
- It takes at least three weeks for your body to adapt to a LCHF diet. During this time, you may be able to sustain aerobic exercise for longer durations, though exercise intensity may decrease.

Does a LCHF diet affect performance?

- Anaerobic athletes (e.g. sprinters, weight lifters, gymnasts) rely primarily on carbohydrates to produce the energy needed for high-intensity activity. Therefore, a LCHF diet may lower the exercise intensity that can be sustained.
- Aerobic athletes (e.g. runners, cross country skiers, long distance cyclists) rely on both carbohydrates and fats to meet energy demands. On a LCHF diet, the exercise intensity that can be sustained will likely decrease.

When is it best to follow a LCHF diet?

- Most appropriate during low-intensity, base phase training.
- Not recommended during competition phase - carbohydrates intake is crucial on race day and should be practiced during training beforehand to avoid gastrointestinal distress.



Tips to Take With You

If you choose to follow a LCHF diet:

1. LCHF diets should be periodized during low-intensity endurance training.
2. LCHF diets are not ideal for athletes competing at high intensities as high carbohydrate intake is important to fuel moderate to high-intensity exercise.
3. A sports registered dietitian nutritionist (RDN) can help individualize your fueling needs based on the type, intensity, and duration of exercise.

Contact SCAN

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Written by SCAN registered dietitian nutritionists (RDN) to provide nutrition guidance. The key to optimal meal planning is individualization. For personalized nutrition plans contact a SCAN sports dietitian or Board Certified Specialist in Sports Dietetics (CSSD) by accessing "Find a SCAN Dietitian" at www.scandpg.org