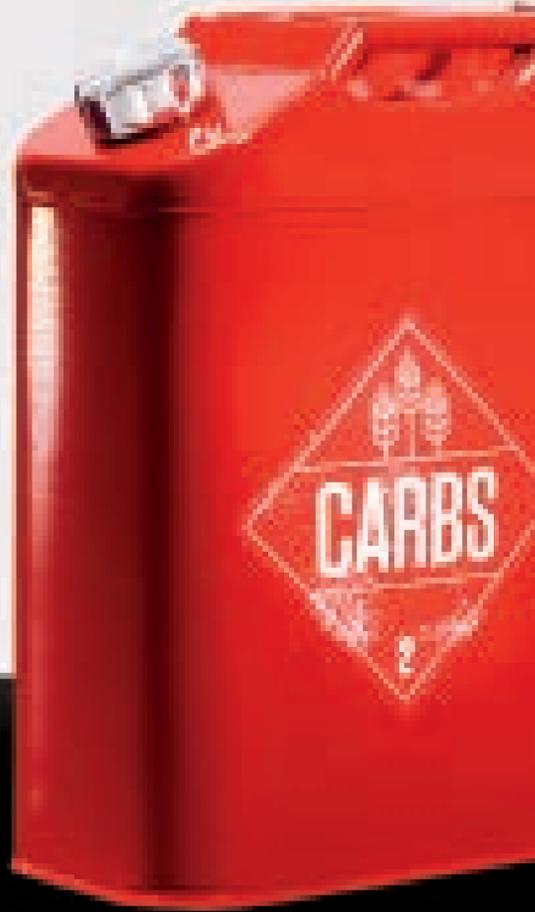


FATS VS. CARBS

What's the Best Fuel for Athletes?

Pros have increasingly embraced a high-fat, low-carb diet. The problem: It may all be hype.

by LISA MARSHALL



PITY THE carbohydrate. For decades, serious athletes couldn't get enough of them, loading up on pancakes, bagels, and pasta before big races. But in recent years, a sexy new nutrient took center stage: fat. Athletes like LeBron James, Ironman triathlete Ben Greenfield, and the entire roster of the Los Angeles Lakers traded pasta and bread for steaks, eggs, and avocados. At the extreme end, some jocks were putting butter in their coffee and adding bacon to everything, while avoiding anything resembling a carb, including whole grains and even fruits.

But amid the frenzy, there was no actual science to support the idea that a high-fat

diet was the best way to fuel performance. New research provides a clear verdict: Put some oats, quinoa, and berries back on your plate. And don't fear the occasional sandwich.

"For performance, low-carb diets do not work," says Iñigo San Millán, director of the exercise physiology lab at the University of Colorado Sports Medicine and Performance Center in Boulder. "We have more and more people coming in eating low-carb, and their performance is horrible. Restore their diets to normal and things improve."

In a recent review of 61 studies, the vast majority showed that diets relying on more calories from carbs than from fats were optimal for performance. None found that carb-

rich diets hurt performance.

You can't blame athletes. Pros will try anything to get an edge. And there is a compelling rationale to try a low-carb diet (typically drawing 10 to 30 percent of calories from carbs and 50 to 70 percent from fat; that's versus the 55 percent carb, 30 percent fat diets that most of us eat). Starve the body of carbs, and it turns to fat for fuel. This gives you a bigger reserve of energy to push through long slogs. Dip into the ketogenic diet, consuming less than 10 percent of calories from carbs and 80 percent from fat (whatever is left comes from protein), and the liver cranks out ketones, compounds proved to help fight inflammation and cellular damage. "Because of this, recovery after exercise is dramatically

enhanced," says Dr. Stephen Phinney, co-author of *The Art and Science of Low Carbohydrate Performance*.

At the same time, Phinney concedes that no study has ever shown that these benefits translate to better finish times. And an Australian paper published last November cast doubt on the very idea. Trained runners were given a compound that prevented their bodies from burning fat and were then asked to hop on a treadmill and run a half-marathon. They ran just as fast as they did when their bodies could access fat freely for fuel. The takeaway: "It doesn't matter how good you are at using fat as a fuel source," says study co-author Jill Leckey. "If you are exercising at high intensity, your body is heavily reliant on carbs."

San Millán notes that a low-carb diet may indeed be a good, temporary choice for obese, diabetic, or sedentary individuals who need to shed pounds. And if you're exercising at low to medium intensities, it might not drain your performance. But if you need to push all-out — as almost all athletes do at some point — then fat can't provide enough fuel fast enough. Unlike carbs, fat requires more oxygen and multiple steps to be converted to energy. "At the very point when the competition could be decided, people run out of steam," San Millán says.

Cyclist Mitch Docker knows the feeling. He started experimenting with a low-carb diet in 2010, making his way from Atkins to Paleo to something akin to ketogenic. The upside: He got the junk off his plate. But he also hit a plateau. "I thought I'd reached my intensity limits," the 29-year-old WorldTour pro says. "Since the re-addition of carbohydrates, I have found I was still a long way away from them."

The fact is, says Boulder-based elite-cycling coach Ben Day, "people become lean, they recover well, and they can get to the end of a long ride and feel good — but

they lose top-end power, and without that, you're nothing in this sport."

What's more, low-carb diets can take weeks for the body to adapt to, and in the meantime, people experience fatigue, brain fog, constipation, and mood swings. When an athlete trains, his carb-starved body may "eat itself to feed itself," says San Millán, tapping protein from muscles and leaving tissue vulnerable to injury. Low-carb plans can also lower testosterone and boost the stress-hormone cortisol. Steer clear of carbs too long and, Leckey says, the body "down-regulates" the enzymes associated with carb metabolism, so it can make less use of the carbs that you do give it.

Look back on the performance of James and the Lakers postdiet, and it appears things did not go according to plan. As James struggled through a bleak early 2014 season, fans tweeted at him to "start eating carbs again." Meanwhile the Lakers — held up as poster children of Paleo and ketogenic diets — set a franchise record in 2015 for the most losses in a single season.

The team's strength and conditioning coach, Tim DiFrancesco, says he tells athletes to be "carb-aware," steering them toward clean, unprocessed carbs (fruits and vegetables, yogurt, sprouted grains), healthy fats (avocado, nuts, and olive oil), and pasture-raised meats. When athletes tilt more drastically toward high-fat diets, he urges them to load up on carbs after a tough workout. And if they want to go Paleo to lose weight, he recommends they wait until off-season.

And that's what exercise physiologists say should be the goal — to be strategic, not restrictive, when it comes to carbs.

"We have gone from thinking we all need to load up on carbohydrates, like Kenyan marathon runners, to thinking we have to almost eliminate them," says San Millán. "We don't need to go to either extreme." ■



AN IDEAL DAY OF EATING

The amount of carbs you need depends on your body weight and activity level. According to exercise physiologist Iñigo San Millán, if you don't exercise at all, you need less than a gram of carbs per pound of body weight per day. For regular gymgoers, it's 1 to 2 grams; and for serious athletes, 2 to 3 grams.

San Millán recommends that you get your carbs from whole grains, fruits, and veggies. If you're a 180-pound guy who works out regularly, here's what an ideal day — roughly 200 to 300 grams of carbs — might look like:

- BREAKFAST** Oatmeal with berries, chia seeds, and nuts, or a banana, peanut butter, and yogurt smoothie.
- LUNCH** Salmon and veggie quinoa bowl, or a whole-wheat turkey sandwich with veggies and an apple.
- DINNER** Sirloin with a sweet potato and kale salad, or stir-fried soba noodles with veggies.

A CARB COMPROMISE

Get the benefits of a low-carb diet without going to extremes.



1. Dial In Timing

Think of carbs as slow, medium, and fast burners. Eat medium burners — oats, quinoa — before a workout so they last long enough to get you through. Go for fast-burners, like raisins or bananas, within an hour post-workout, when the body will immediately use them for muscle repair. Opt for slow, lower-carb burners like veggies and legumes at dinner. A new study shows that when endurance athletes did this, eating a very low-carb dinner with the majority of carbs at breakfast and lunch, their sprint times improved substantially.

2. Carb Cycle

Because weight loss requires you to burn more calories than you consume, and hard training demands extra calories to fuel performance and recovery, you shouldn't try to drop weight and train hard simultaneously, says running coach Jeff Gaudette. Instead, cycle your carbs. Plan low-carb, low-calorie days for when you're resting or doing light cross-training; opt for low-carb, moderate-calorie days for endurance workouts like a long, slow run or bike ride; go high-carb, high-calorie during your hardest workout days.

3. Upgrade Your Race-Day Carbs

Sucking down carb-dense sports drinks and gels during a long race will boost energy, but they can make the stomach churn. Evidence suggests that new "designer starches" — like UCAN's SuperStarch — absorb more slowly and smoothly, are easier on the stomach, and can enhance fat oxidation. This means you're able to go longer and faster. Runner Meb Keflezighi tried UCAN in 2009 and has been using the mix ever since; the New England Patriots are also fans. It's available in bars and in drink mixes at \$60 for 30 servings.

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