

Hack Your Diet for Better Performance

BY ASHLEY MATEO

» I KNEW THE 2020 L.A. Marathon wasn't going to go well for me after the first 5K. I was battling an upper respiratory infection that showed up the week of the race, and on top of that, I was experiencing the kind of fatigue and pessimism most runners associate with miles 20-plus. Unfortunately, this wasn't an unfamiliar feeling—I had bonked most of my training runs leading up to race day.

In hindsight, I realize it wasn't about my physical training. As obsessed as I was with tracking run metrics like heart rate and VO_2 max, there was one number I'd basically ignored: calories. To maintain weight, active women ages 19 to 30 should have up to 2,400 calories a day, while active men ages 19 to 35 should consume up to 3,000 calories a day, according to the 2015 to 2020 edition of the USDA's Dietary Guidelines for Americans. The fact that I was barely eating 2,000 calories—honestly, out of sheer laziness while at my computer—and burning way more was likely sabotaging my workouts.

When I realized how underfueled I was, I knew I had to rethink my eating habits. Thankfully, at-home tests and wearables are providing

personalized tracking and insights to everyday athletes who want to optimize their performance through workouts *and* nutrition.

"Labs are great for doing controlled experiments, but this is really about trying to push the lab outside into the real world," says John Mercer, a professor of kinesiology and nutrition sciences at the University of Nevada, Las Vegas, and codirector of UNLV's Sports Research and Innovation Initiative.

● Nutrition tools to optimize your training

Learning how certain foods affect you, what nutrients you may be lacking, and when to time meals and hydration can help you get the most out of every run.

So when it came to preparing for the 2021 Chicago Marathon, I didn't start training with a run plan—I started with a blood test. Six months before race day, I started wearing Levels, a continuous glucose monitor (CGM) that tracks your glucose levels (and how they're affected by diet, exercise, and stress) in real time (\$398 for one month). CGM technology has long been used to help people living with diabetes, and though it's pricey, the results in non-diabetic users are nearly equivalent to blood tests, a 2015 study published in *PLOS One* found. (Eliud Kipchoge, the fastest marathoner in the world, has worn one.)

One week into testing, I realized that my blood sugar was almost *always* low. After a meal, it spiked to the middle of what the app deemed a healthy range for me, around 85 mg/DL; when I woke up in the morning, it was often below 70. "If your blood sugar drops significantly overnight, that's definitely a sign of underfueling or that your glycogen

TRACKERS WITH NUTRITION TECH

Levels, InsideTracker, and the Gatorade Gx Sweat Patch will give you insight into your nutrition. These trackers can also provide real-time guidance on updating your fuel plan.



1/ Healbe GoBe3 / \$199

This smart band counts digested calories by tracking the movement of glucose and fluid through your body via a bioimpedance sensor. It also uses the sensor to learn your "normal" hydration and provide tips on when to sip.



2/ Polar Vantage M2 / \$300

Along with standard activity tracking, Polar's FuelWise feature auto-calculates how many carbs you need for a workout and, based on your energy expenditure during a run, pushes automatic fueling and drink reminders.



3/ Supersapiens Energy Band, Version Zero / U.S. availability TBD

Get glucose data in real time with this device that displays info collected from the same sensor Kipchoge wore. Midworkout, it sends notes to help you optimize fueling.



IF YOUR BLOOD SUGAR DROPS SIGNIFICANTLY OVERNIGHT, THAT'S DEFINITELY A SIGN OF UNDERFUELING.

stores are too low or you didn't eat enough before bed," says Maddie Alm, RD, a dietitian with Team Boss, the pro running group founded by Emma Coburn and her husband in Boulder, Colorado.

That's a big problem, because if you don't have enough glycogen stores, your body has no easily accessible energy to burn. This will make you feel tired and weak, and, if you run long enough, you'll hit the wall not at mile 19 or 20, but as early as mile seven or eight. To keep from bonking every run, Levels was telling me I needed more food, more consistently.

Not eating enough also increases your risk of missing out on essential nutrients. Five months before race day, I had my blood tested by InsideTracker, a lab-based service used by athletes like Shalane Flanagan to measure up to 43 biomarkers and 261 genetic markers that could impact performance (starting at \$189). My blood panel showed I was low in vitamin D, vitamin B₁₂, and iron—three of the most common deficiencies, Alm says, and all of which play a role in energy and endurance.

"Iron helps carry oxygen through your blood, so runners with a deficiency will notice things that used to feel comfortable may now feel really hard and challenging. And B₁₂ aids in the formation of red blood cells and energy production, which will impact the way you feel in training," Alm says. Vitamin D is crucial because it plays a big role in your immune and bone health, your mood, and more. (These deficiencies—along with upper respiratory infections—can be a warning sign of RED-S, a.k.a. Relative Energy Deficiency in Sport, a condition caused by inadequate energy consumption.)

Finally, to home in on hydration, I used the Gatorade Gx Sweat Patch, a one-time-use adhesive that tracks sweat rate and the amount of sodium lost through sweat (\$25 for two). During a six-mile run in 80-degree heat, my sweat rate was 1,058 milliliters per hour, and I lost between 398 and 858 milligrams per liter of sodium. "That translates to about one and a half 24-ounce bottles of water per hour," Alm says, "and one to two Nuun tablets of sodium per hour."

Until finding this out, I drank when I was thirsty and barely took in any fuel during a run.

Considering that dehydration can hinder endurance and increase fatigue, according to a *Frontiers in Physiology* study, I was setting myself up to fail.

● The accuracy (and benefit) of tracking

Are these new devices accurate? Not totally. "Devices like InsideTracker try to combine information from a variety of sources and then put that information through an algorithm to determine what advice they give you," Mercer says. And you shouldn't always trust an algorithm.

Also, while knowledge is power, it's easy to get overwhelmed by all the data, Mercer adds. "Having someone to help interpret your data—show you patterns or give you guidelines—and continue to educate you to make good decisions is crucial," he says. Plus, no matter how many devices you're using, you can't override your body cues.

I wouldn't have known where to start with my info without help from a dietitian to decipher the data and apply those insights to my training. But what these fancy tests and trackers did do was finally engage me enough in my nutrition that I did the work to put some real fueling plans in motion.

For my final months of training, I took supplements, and with Alm's guidance, followed a meal plan that included eating every three hours, prioritizing pre- and post-run fuel, and upping my fluid and electrolyte intake. By the time I took a follow-up blood test with InsideTracker 10 days before the Chicago Marathon, I had improved my iron levels, nearly doubled my vitamin D, and more than doubled my B₁₂ numbers. But I didn't need the blood test to know that; the proof was in how much more energetic I felt while running.

Fortunately, that optimization paid off on race day. Despite debilitating heat and humidity, I PR'ed my marathon time by eight minutes. Even better? I bounced back faster than I ever have after 26.2.

No tech—nutrition or otherwise—is a shortcut to performance optimization, but without digging into my data, I wouldn't have known what questions to ask to figure out my best fueling strategy. And the knowledge I gained will stick around long after race day.



HOW TO OVERHAUL YOUR NUTRITION

Hack your diet to perform better in your next race by following these steps, which will get you started:

1

DETERMINE IF NUTRITION IS HOLDING YOU BACK FROM A PR

Do easy workouts feel hard? Is your heart rate higher during training, or lower when you're resting, than normal? Are you tired even when you're not running? These are all signs of nutrient deficiencies affecting your running. So if you answered yes, move to Steps 2 and 3.

2

GET A BLOOD TEST

Your primary care doctor can order a nutrition panel to check for deficiencies in key areas. Or, if you opt for a service like InsideTracker, you can then share the results with your doctor for more insight into any problem areas.

3

TALK TO A DIETITIAN

Connecting with an expert can help you decipher your data and determine actionable next steps. Look for a registered dietitian or, even better, one certified in sports dietetics. To find a certified expert near you, check out EatRight.org.