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# Post-Run Recovery Starts with Protein



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Then, her new coach, Alberto Salazar, recommended a post-workout tweak that revolutionized Goucher's training: a recovery shake with protein.

The results were immediate. While she still felt some of the effects of hard 16-milers, she didn't feel crushed after she had a post-workout shake.

"I just feel like when I get protein right away after a workout, recovery happens so much quicker," says Goucher, the bronze medalist in the 10,000m at the 2007 world championships. "My body doesn't feel as beat up. I really notice it the day after a training session. I still feel tired, but I don't have that huge tightness in my body anymore."

Science backs Goucher's experience: Sports dietitians say protein helps speed muscle repair after hard workouts, leading to faster recovery. The key is taking the right amount at the right time, and not skimping on fluids and carbohydrates in the process.

"Of all the things I've done in 25 years of racing, eating something with carbs and protein within 30 minutes of training has been the most critical," says registered dietitian Lisa Dorfman, director of sports nutrition and performance at the University of Miami and a former professional triathlete. "After a competition, I always have something with protein waiting for me."

Protein repairs exercise-induced muscle damage, reduces the response from the stress hormone cortisol and even helps speed glycogen replacement, the goal of taking in carbohydrates, says Jackie Dikos, a registered dietitian and competitive runner who

completed in the 2008 U. S. Olympic marathon trials.

Most dairy and meat products have high levels of protein. An egg has about seven grams. A small chicken breast has about 25 grams. There are also many drinks, mixes and bars chock full of protein. Odwalla's Protein Monster drinks have 33 grams of soy protein per serving, while Pure Sport Recovery Drink has 18 grams per serving.

Dorfman recommends consuming between 10 to 20 grams of protein post-workout, but warns against overdoing it.

"Some shakes have 40 to 50 grams of protein, and I'm like, 'Whoa,'" Dorfman says. "You don't need 50 grams of protein after a workout."

Dietitians are careful to note that hydration is also key, followed closely by protein. Most studies suggest a 3:1 or 4:1 carbohydrate-to-protein ratio.

While most research suggests refueling within 30 minutes is optimal, many experts say sooner is even better.

"I really encourage athletes to do something within 15 minutes," says registered dietitian Leslie Bonci, a runner and director of sports nutrition at the University of Pittsburgh Medical Center. "The longer you wait, the longer it takes to recover. Plus, if you make it the first thing you do at the end of a workout, it guarantees it gets done."

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Some runners, including Goucher, find prepackaged drinks easiest to cart to a finish line or stash in a workout bag. Goucher says she sips Endurox R4 while driving home from workouts. But, Dikos says, you probably have plenty of protein sources in your own kitchen.

"This can absolutely be done with foods you have in your cabinet," says Dikos, who recommends a bagel with peanut butter, a baked potato with cheese or pancakes with yogurt.

And what about the headlines chocolate milk has gotten about being an ideal recovery food?

"Milk is 90 percent water, so you're rehydrating, and it's got the so-called perfect ratio of carbs to protein," says Suzanne Girard Eberle, a sports dietitian, former elite runner and the author of *Endurance Sports Nutrition*, who notes that planning to eat a full meal after a workout can help weight-conscious runners avoid blowing their calorie budgets on sports drinks.

Goucher was a skeptic at first, but now protein drinks are a staple of her post-workout diet.

"I didn't really buy into it right away," Goucher says. "But after about a year of living out here and training under Alberto, I realized how much it helped my body recover."

How much postworkout protein?

Dietitian Jackie Dikos offers this rough formula: Divide your weight by two, and eat that many grams of carbohydrates, plus 10 to 20 grams of protein after a hard workout.

USING THE 4:1 RATIO:

WEIGHT	DIVIDED BY 2 = CARBS	DIVIDED BY 4 = PROTEIN
125 pounds	63 grams carbohydrates	15 grams protein
170 pounds	85 grams carbohydrates	21 grams protein

PRE-PACKAGED PROTEIN SOURCES

Nutritional information per serving size

Clif Builder's Bar, 2.4 oz. (Chocolate Mint)		Endurox R4, 75g/16 oz.* (Vanilla)		GU Recovery Brew, 60g/16 oz.* (Orange/Pineapple)	
PROTEIN	20g	PROTEIN	13g	PROTEIN	8g
CALORIES	270	CALORIES	260	CALORIES	250
CARBS	31g	CARBS	50g	CARBS	52g
SODIUM	230mg	SODIUM	220mg	SODIUM	160mg
POTASSIUM	200mg	POTASSIUM	120mg	POTASSIUM	70mg
FAT	8g	FAT	1g	FAT	0g

Muscle Milk Light, 14 oz. (Vanilla Creme)		Odwalla Protein Monster, 15.2 oz. (Vanilla)	
PROTEIN	20g	PROTEIN	33g
CALORIES	160	CALORIES	220
CARBS	9g	CARBS	27g
SODIUM	260mg	SODIUM	310mg
POTASSIUM	n/a	POTASSIUM	460mg
FAT	4.5g	FAT	4g

Naked Juice Protein Zone, 8 oz.* (Banana Chocolate)		PureSport Recovery Drink, 70g/16 oz.* (Fruit Punch)	
PROTEIN	16g	PROTEIN	18g
CALORIES	240	CALORIES	250
CARBS	39g	CARBS	46g
SODIUM	170mg	SODIUM	250mg
POTASSIUM	780mg	POTASSIUM	110mg
FAT	1.5g	FAT	0g
*15.2-ounce bottles contain about two servings		*when mixed with water	

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