

Protein does not dehydrate
By Jose Antonio, Ph.D.

Whenever I give a seminar on sports nutrition, the inevitable questions include: how much protein should I eat, how time slows down as you approach the speed of light, and whether consuming more protein makes you prone to dehydration. Okay, you can scratch the second question; because I have no friggin' clue. But in all honesty, the question of protein causing dehydration has been around longer than the zipper. So what gives? If I have a post-workout protein shake, will it dehydrate me and slow down the recovery process. Or god forbid, what if having protein actually helped hydrate you? Now there's a thought. Protein actually helping you.

Well never fear, we got some data hot off the press to show you what the heck I'm talking about. In a study presented at the 10th Annual Congress of the European College of Sports Science, in Belgrade Serbia/Montenegro, Dr. John G. Seifert presented some pretty nifty science.

In his ground-breaking study, he compared:

- A) 6% CHO + 1.5% protein + 24 mEq/kg sodium sports drink (CP, Accelerade®, PacificHealth Labs)
- B) 6% CHO + 20 mEq/kg sports drink (CHO, Gatorade®, PepsiCo)
- C) plain water (WA)

Here's what they did in the experiment. Subjects cycled at 25 degrees Celsius (warm conditions) to dehydrate each person by 2% of starting BW during three trials. So for instance, if you weighed 200 lbs, they make you ride the bike until you lost 2% of your weight in water which is equal to 4 pounds.

They then ingested a fluid (one of the three listed above), within 20 minutes, at a volume equal to body weight loss. Subjects ingested a 6% CHO + 1.5% protein + 24 mEq/kg sodium sports drink (CP, Accelerade®, PacificHealth Labs), a 6% CHO + 20 mEq/kg sports drink (CHO, Gatorade®, PepsiCo), or plain water (WA) during a three hour recovery period. Blood samples, urine samples and volume, and BW were measured at seven time points during each trial.

What did they find?

Results indicate that a CP (Carbohydrate plus protein) may be a preferable choice when fluid retention is a concern. ***Fluid retention for CP was 15% greater than CHO (carbohydrate) and 40% greater than water.*** So before you rub your eyes in disbelief, let me paraphrase. Drinking a sports drink with ADDED PROTEIN improves your body's ability to rehydrate itself!

That's some pretty important information. It adds to a growing body of knowledge demonstrating that adding protein to carbohydrate is in fact a superior strategy to carbs alone (which is what many athletes have been taught for years!). In fact, a prior study on protein supplementation on male US Marine recruits from six platoons (US Marine Corps Base, Parris Island, SC; n = 387; 18.9 +/- 0.1 yr, 74.7 +/- 1.1 kg, 13.8 +/- 0.4% body fat) showed equally impressive results!

These jarheads were randomly assigned to three treatments within each platoon. Nutrients supplemented immediately postexercise during the 54-day basic training were either placebo (0 g carbohydrate, 0 g protein, 0 g fat), control (8, 0, 3), or protein supplement (8, 10, 3). Compared with placebo and control groups, the protein-supplemented group had an average of 33% fewer total medical visits, 28% fewer visits due to bacterial/viral infections, 37% fewer visits due to

muscle/joint problems, and 83% fewer visits due to heat exhaustion. Recruits experiencing heat exhaustion had greater body mass, lean, fat, and water losses. Muscle soreness immediately postexercise was reduced by protein supplementation vs. placebo and control groups on both days 34 and 54. Thus, post-exercise protein supplementation enhances muscle protein deposition as well as positively impacting health, decreasing muscle soreness, and improving tissue hydration during prolonged intense exercise training, suggesting a potential therapeutic approach for the prevention of health problems in severely stressed exercising populations.¹

In summary: a great post-workout strategy is to consume a post-workout meal replacement shake. I'd suggest you take your favorite sports drink and spike it with a touch of protein (about 5 g).

Reference

1. Flakoll, P. J., T. Judy, K. Flinn, C. Carr, and S. Flinn. Postexercise protein supplementation improves health and muscle soreness during basic military training in Marine recruits. *J Appl Physiol.* 96:951-956, 2004.