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Simple Steps to Optimizing Post-Workout Nutrition

By grrlAthlete.com

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John M. Berardi is a scientist and PhD candidate in the area of Exercise and Nutritional Biochemistry at the University of Western Ontario, Canada. His company, Science Link: Translating Research into Results, specializes in providing integrated training, and nutritional programs for high-level strength and endurance athletes.

Through his consulting businesses, John works with a diverse client population including high-level athletes wanting to win medals and championships. Furthermore, John will be completing his PhD with a specialization in exercise and nutritional biochemistry this fall. To say that this guy knows his stuff is an understatement.

In this issue, we decided to pick John's oversized brain (no really, he does have an abnormally large head) to get his thoughts on a very important topic - Post Workout Nutrition.

grrlAthlete.com: John, what have you found to be the biggest mistake in post-workout nutrition by athletes, and female athletes in particular?

John Berardi: The biggest mistake people are making is not doing anything at all about post-workout nutrition! Nutritionally, most people don't plan for success - not even many of the most elite of the elite that we regularly work with.

I learned this lesson when I started working with a group of Canadian Olympians a few years back. When I spoke with them about their nutrition and supplementation I was flabbergasted with their lack of nutrition knowledge.

Now, prior to this time I would have anticipated nutritional ignorance or misinformation from the average person but not from elite athletes. But I was wrong. In fact, the athletes were just about as misinformed as the general public.

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GA: That's too bad. What steps did you take after that?

JB: After re-evaluating my premises, I realized that because most athletes can stay lean and fit from high volumes of training their poor nutritional choices could be masked by a body that looks well nourished and healthy. Also, because they are already elite, they think they must be "dialed in". It's unfortunate that most of them never know just how outstanding they could be if they really took care of their nutrition.

So, once I get a hold of their programs, those already good-looking bodies usually change as their fat mass decreases and muscle mass increases. But even more importantly, they also improve their performance. This is why I spend a lot of time with my clients and athletes (even the ones that already look great); educating them about making appropriate food choices and helping them improve the

timing of their intake.

GA: John, could you describe some case studies or examples?

JB: For example, most athletes don't know that certain food choices before exercise can actually reduce their performance. Furthermore, few know that the 6 hours after exercise are absolutely critical to recovery. My PhD work has focused on the latter.

As a result of my academic training and my laboratory data, I've learned how to use food timing to maximize recovery after exercise. And while this is easy to do in athletes who don't mind gaining weight (i.e. just eat A LOT), it's much harder to do in the athletes who want to lose weight (i.e. most female athletes and athletes in whom the power to weight ratio must be high).

GA: So what types of things can someone do to maximize their recovery during these 6 hours?

JB: Well, for starters, there is a key principle at work here. Basically, the muscles are most efficient at carbohydrate and energy uptake during this time. Therefore the bulk of an athlete's calories (especially carbohydrates) should come during this post-workout period.

Since fat is burned at high rates during the post exercise period regardless of what food you eat, during this time most of the ingested energy (protein and carbohydrates) will go to replenish the depleted muscle energy stores and to enhance recovery.

Think of it this way. If you were to eat 100g of carbohydrates for lunch and 50g were to end up in muscle stores to promote recovery and 50g were to end up in fat stores to make you fatter, your body composition wouldn't be improving and recovery wouldn't be maximized. But if you were to save those 100g of carbohydrates until after exercise, all those carbohydrates would go to the muscles for recovery with none of them going to fat cells. So which scenario do you prefer?

GA: Are you suggesting that athletes should only eat carbohydrates after exercise?

JB: Nope, what I'm saying is that you should minimize carbohydrate intake during most meals of the

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day and feed the body most of the carbs during the 6 hour recovery period. I've used this strategy with extreme success in all types of athletes from elite endurance cyclists to female fitness competitors who need to minimize total body weight and fat weight while recovering well and maintaining a high level of performance.

But almost as important as the carbohydrate strategies, the protein content of the post-workout period is critical. My studies are demonstrating that post-workout nutrition should contain protein and carbohydrates in a ratio of 2g of carbohydrate to every 1g of protein. My athletes consume a liquid recovery drink of 0.8g/kg of carbs and 0.4g/kg of protein immediately after training.

GA: Based on your research, what is the optimal approach for a team sport athlete, say a female basketball player, to take after a game or practice?

JB: How about I give you an optimal daily strategy for a female basketball player who practices from 4:00–6:00pm?

Here's what I might recommend (remember this is just a sample and doesn't apply to all female

basketball players). Notice that the bulk of the carbohydrates come during/after exercise.

8am Breakfast - 6 egg white omelet with 1-cup veggies and 1 piece of fat free cheese.

10am Snack - Protein shake in water with added flaxseed oil

12pm Lunch - 3oz Chicken breast and large salad with fish oil capsules

2pm Snack - Protein shake in water with added flaxseed oil

4pm–6pm Practice - Glucose–electrolyte beverage like Gatorade

6pm Post-workout - Liquid drink containing 20–25g fast digesting protein (like whey) and 40–50g of simple carbohydrate (like Gatorade)

8pm Dinner - 4oz burger, large salad, medium sized baked potato, fish oil capsules

10pm Snack before bed - Plain yogurt, 2 pieces of fresh fruit

GA: What if an athlete has another game or practice the next day?

JB: There is no difference. Remember, the post-workout carbohydrate and protein consumption can rapidly replenish muscle carbohydrate stores; much more rapidly than trying to do so during the other meals of the day. So the athlete such as a basketball player should be ready by the next day.

GA: Would an endurance athlete need to take any additional measures? (Again, with a training session scheduled within 24 hours).

JB: The strategy for a hard training endurance athlete would be to double up on the post-workout recovery drink. I have my endurance athletes take two post exercise recovery drinks as discussed above; one immediately after training and one an hour later.

My research has shown that this strategy (especially with the inclusion of the protein) can improve muscle glycogen recovery by 22% when compared to carbohydrate only ingestion. But even more

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importantly, when endurance athletes come back to exercise on the same day, they perform over twice as well when protein and carbohydrate drinks are ingested when compared to when carbohydrate only drinks are ingested or food meals are eaten later in recovery.

GA: So it really is critical to have carbs and protein after training for both muscle recovery and performance?

JB: Yep, we're in the process of publishing the first ever data conclusively demonstrating this in endurance athletes.

GA: And finally, for this interview (we've got lots more to ask in future editions!), what post-workout regimen have you found most effective on tournament days (for basketball in this example, with 3 games on one day and the games 90 minutes apart)?

JB: During tournament days, I think liquid nutrition is paramount.

Besides a good breakfast containing low glycemic index carbohydrates (like oatmeal, fruit, and whole grain breads), high quality protein, and good fats, it's critical to fuel up with liquid protein and carbohydrate drinks all day between games. Keeping the ratio of carbs to protein the same (2:1), sipping recovery drinks all day will maximize muscle energy stores and performance during each subsequent game.

As long as the athlete is sure to have a good breakfast (as mentioned) and a good lunch meal (similar to the breakfast guidelines), the rest of the day should be spent sipping protein and carbs.

GA: Well thanks for the informative interview John. We've got lots more questions to ask you about nutrition and training but we'll save those for a later day.

JB: I look forward to doing future interviews and helping your athletes out whenever I can. For more information about the Science Link team or their services, please visit www.johnberardi.com. Also, be sure to check out www.johnberardi.com/seminars right now. Here you will find out how to purchase and/or attend one of John's dynamic and information-packed seminars.

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Chocolate Splendor, Food For The Gods. Bodybuilding Nutrition.

By Kevin Doberstein

A fictional overheard conversation at a Thelma's Fine Dining.

Hi, I'm your waitress, Flo. How are you two doing tonight? Just come from the gym? Whew, one of you

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needs a shower. Here's our menu. Our specials include a 3lb cheeseburger with mega fries, a foot long chili dog that is deep-fried and covered with cheese. Or we have a this new health drink called Chocolate Splendor. What? How in the h#%l did that get in there?

An after workout drink that provides bodybuilding nutrition for first rate growth.

After putting your body through a grueling workout it demands bodybuilding nutrition. No this is not an advertisement. We found an easy, quick and reasonably priced way of fulfilling this need. We take a packet of Carnation Instant Breakfast and mix it with whey protein. The whey protein that we use is Optimum Nutrition 100% Whey Protein Powder. It mixes easily and tastes good. 20 grams of sugar carbohydrates from the instant breakfast help your blood glucose return back too normal after the depletion from the workout. You can mix the two powders together in a shaker cup and add water at the gym when you are ready to drink it.

Chocolate Splendor breakdown:

- Protein 28 grams
- Carbohydrates 30 grams 20 grams sugar
- Fat 2.5 grams

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