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## Think food first: Refueling after training or games

by Dev Mishra, July 19th, 2016 1:42AM

By Dev K. Mishra, M.D.

Here's another of those subjects that seems to make some people emotional -- why is it important for young athletes to refuel after exercise, when should this happen, and what drink/food is best?

The sports supplement industry has a massive foothold in this area, and for sure there are some great products available from highly reputable manufacturers. But I find that the two most important points are: sooner is better, and think food first.

### When: Sooner is better, especially if you'll be playing again soon

Muscles require fuel to function properly, and after a training session or a game your muscles will need the right fuel to recover. It's generally believed that in the first hour or two after exercise the muscles are most receptive to refueling. If you don't properly refuel and recover it means that your performance in the next session will likely be less than what you want. Without proper refueling you can have all sorts of issues such as easy fatigue, poor strength, muscle cramps, or heat exhaustion. And you probably won't play very well.

Let's now say that you're doing multiple sessions in one day, maybe 4 to 6 hours apart. I'm not a fan of this type of training or competition but I have a feeling it'll be around for a while. If this is the case, then you'll want to start refueling as soon as possible after the conclusion of your first session. I don't think you have to obsess about starting to refuel the second your first session ends, but if possible it would be best to start in the first 20 minutes or so. This will allow you to finish the food or drink in enough time to have it digested in your stomach, and for the muscle recovery effects.

Examples would include:

- Football two-a-days
- Tournament play with more than one game in a day, such as soccer, basketball, volleyball, softball, baseball
- Triathlete training with one session in the morning and another in the evening

If you have more time between sessions then you have more flexibility in your recovery options. Muscle recovery definitely continues for several hours after exercise, it just seems to be most efficient in the first hour or two.

### What: Think Food First

I mentioned in my article "[Do's And Don'ts of Supplements for Young Athletes](http://www.socceramerica.com/article/69496/dos-and-donts-of-supplements-for-young-athletes.html) [<http://www.socceramerica.com/article/69496/dos-and-donts-of-supplements-for-young-athletes.html>] " that pretty much every nutritionist and sports scientist would recommend actual food rather than supplements for your performance nutritional needs and I would say that's true for after-exercise recovery too. Muscles actually need carbs for recovery, so be cautious about high protein and low-carb products when it comes to post exercise recovery. Many sports nutritionists like a 3 to 1 ratio of carb grams to protein grams in your recovery food or drink.

A couple of years back I purchased **Nancy Clark's Sports Nutrition Guidebook** [<http://www.nancyclarkrd.com/books/>] , and in my opinion it remains one of the most sensible and science-based

sports nutrition guides around. Here are some suggestions from her book about appropriate post-exercise foods:

- Fruit smoothie (Greek yogurt + banana + berries)
- Cereal + milk
- Bagel + (decaf) latte
- Pretzels + hummus
- Baked potato + cottage cheese
- Turkey sub
- Pasta + meatballs

Clark also advises: “do not consume just protein, as in a protein shake or protein bar. Protein fills your stomach and helps build and repair muscles, but it does not refuel your muscles.”



### My Favorite Post-Exercise ‘Food’: Chocolate Milk

Sure, you can buy fairly expensive engineered recovery drinks, bars, and powders but I’ve always been a big fan of good ol’ chocolate milk. Consider that a typical 8-ounce serving of chocolate milk contains about 26 grams of carbs and 8 grams of protein (the 3 to 1 ratio), and actually tastes good. Who doesn’t like chocolate and milk? Drink up and play better!

#### Key Points:

- Muscle recovery after exercise requires a combination of carbs and protein.
- Muscle is believed to recover better if refueling starts in the first hour or two after exercise.
- Start as soon as possible (ideally in the first 20 to 30 minutes) if you’ll be doing more than one training session or game in the same day. Sooner is better.
- Think food first for recovery. Chocolate milk is an excellent choice for drink, as is a fruit smoothie, and several foods. If you prefer a sports drink or bar be sure to purchase from a highly reputable manufacturer.

*(Dr. Dev K. Mishra [<http://www.sidelinesportsdoc.com/sidelinesportsdoc/t-home.html>] , a Clinical Assistant Professor of orthopedic surgery at Stanford University, is the creator of the [SidelineSportsDoc.com](http://www.sidelinesportsdoc.com/usclubsoccer/) online injury-management course [<http://www.sidelinesportsdoc.com/usclubsoccer/>] , now a requirement for [US Club Soccer](http://usclubsoccer.org/) [<http://usclubsoccer.org/>] coaches and staff members. Mishra writes about injury management at [SidelineSportsDoc.com Blog](http://blog.sidelinesportsdoc.com/) [<http://blog.sidelinesportsdoc.com/>] , where this article first appeared.)*

#### Further Reading:

Do's And Don'ts of Supplements for Young Athletes [<http://www.socceramerica.com/article/69496/dos-and-donts-of-supplements-for-young-athletes.html>]

The Female Athlete Triad -- Be on the Lookout [<http://www.socceramerica.com/article/68837/the-female-athlete-triad-be-on-the-lookout.html>]

Is it OK to take pain medicine in order to continue playing? [<http://www.socceramerica.com/article/69391/is-it-ok-to-take-pain-medicine-in-order-to-continu.html>]