Recovery 101—Nutrition

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This is the first of a two-part article on basic recovery techniques. Part 1 will look at the nutritional aspect of recovery, while Part 2 will focus on training techniques to speed up recovery.

Every day I go to the gym and I see people sweating it out to get the results they desire. I also see these same people distraught when their desires never actually materialize. Now, I could write many articles about why this is, ripping apart their ridiculous training schemes and what not, but I'm going to dedicate these next couple articles to one of the most overlooked aspects of training--the time you spend out of the gym, specifically nutrition and choice of post-workout activity.

When it comes to post-workout nutrition, correct timing of what you eat and how much you eat is essential. First of all, you need to know what type of workout you just completed, meaning was it a strength training session, a movement/aerobic training session, or a hybrid of the two. Knowing how you just trained will dictate the amount of one macronutrient you eat relative to another, specifically your carbohydrate to protein ratio. If you just completed a strength training session you are looking to intake a 2:1 carbohydrate to protein ratio. If you just completed a movement training or aerobic session, then you are looking for a 4:1 carbohydrate to protein ratio. Finally, if you just completed a hybrid workout, then you need to judge based on the workout. For example, if you just completed a power-based Plyometric training session, which is technically a strength session based on the distance traveled by your center of mass on every movement, you'll be looking at more of a 2:1 ratio. This also goes for circuit training sessions in the weight room where you are lifting the entire time but because your heart rate stays elevated it may feel like a cardio session. However, let's just say you finished running hill sprints, which, due to the incline, definitely has a strength component to it, but due to the metabolic demand of this workout you'll be looking at more of a 4:1 ratio.

Secondly, you need to know exactly what types of foods to put into your body. As I stated earlier, and will expand upon later, timing is crucial for post-workout nutrition. You want to take in foods that are easily digestible and will be delivered to your muscle cells quickly, meaning that when looking at carbohydrate choices, simple, fast-digesting sugars are better. Glucose would be your number-one choice here as glucose is already in a form that is usable by the body. On the other hand, fructose, which is the sugar found in fruits, takes longer to be absorbed by the muscle cells because it has to first travel to the liver where the liver will convert it to glucose. This also makes up the majority of Americans' diets in the form of high fructose corn syrup, so that's another reason to avoid that substance. The reason you want such fast-digesting carbohydrates is because the faster your carbs are digested the faster your insulin levels will spike. This will allow the glucose to enter the muscle cell, replenishing glycogen stores and allowing you to recover faster from your workout. A faster recovery from previous workouts enables you to work out harder the next time you hit the gym.

These same rules apply for protein as well. The fastest-digesting protein is going to be whey protein, with casein protein on the other end of the spectrum as the slowest-digesting protein. What is different about post-workout protein consumption is that you don't want purely fast-digesting protein, i.e., you want a mix of whey and casein protein. Once again, the ratio of the two will depend on the workout you just completed. For strength-training workouts you're looking at a 50/50 mix of the two proteins post-workout. This is for two reasons: 1) The whey protein will be digested and absorbed by the muscles quickly to start the rebuilding process. The sooner your muscles can start rebuilding the sooner they can be put to work again. 2) The casein protein will take up to seven hours to digest. This will give your muscles a slow drip of amino acids throughout the day that will aid in the recovery and rebuilding of the muscle tissue. After a movement training or aerobic session you want a 75/25 mix of whey to casein. This can be accomplished quite simply by mixing your whey protein shake in 8 to 12 ounces of milk as casein protein makes up approximately 80% of the protein found in milk. However, it would be worth investing in a separate casein powder or a mix of casein and whey protein for after strength training sessions as adding enough milk to get a 50/50 ratio would more than likely water down the powder so much that the shake wouldn't taste very good.

Now that you know what to eat, the question becomes when do you eat it. Essentially, the sooner you can eat your post-workout nutrition the more effective it will be. However, there are a couple time windows that you should keep in mind. The first window is 30 minutes post-workout. Once 30 minutes has elapsed sine the end of your workout the effectiveness of your post-workout nutrition in aiding recovery drops off dramatically. The second window is 2 hours post-workout. After a 2-hour period from the end of your workout, any advantage that nutrition could have given you in terms of recovering for your next workout is basically gone. It is because of these two time windows that having the fastest-digesting macronutrients available to your body is so crucial. It is also why I recommend taking your post-workout nutrition with you to the gym instead of waiting until you get home to eat.

A third macronutrient that I haven't talked about at all is fat, specifically polyunsaturated fats. Polyunsaturated fats contain omega-3 fatty acids, which act as a natural anti-inflammatory. Polyunsaturated fats can be found in high quantities in foods such as fish and walnuts, among others. What you have to be careful about when dealing with fats is that fat will slow down the digestion of everything else. So, although the omega-3's found in these foods will allow you to recover from your workout quicker by reducing inflammation, I do not recommend taking in fats along with your carbohydrates and proteins. In fact, I would recommend waiting at least 30 minutes *after* you have already had your post-workout carbs and proteins to take in some form of omega-3's. While this would put your fat intake outside of the 30-minute window given earlier, replenishing glycogen stores and providing amino acids for the muscle takes precedence over the anti-inflammatory effect of omega-3 fatty acids. Two of the most effective ways of ingesting omega-3's are fish oil tablets and whole ground flaxseed. The tablets can be taken right out of the container and the flaxseed can be mixed in with yogurt, cereal, oatmeal, shakes, and smoothies. While there are recommended daily values for omega-3's, recommended post-workout dosages have yet to be established.

Another aspect of post-workout nutrition to consider is water. You need to make sure that you re-hydrate after every workout so that your body continues to function properly between workouts, which will allow you to work out harder the next time you hit the gym. A simple way to figure out how much water you need post-workout is to weigh yourself before you begin your training and then again after your training session has concluded. For every pound that you loose during your workout you should drink 16 ounces (two cups) of water after your workout. You should definitely still be hydrating during your workout as well, but most of us are unable to keep up with our fluid losses during training so we must take extra care to make sure we re-hydrate well post-workout.

A lot of people like to drink Gatorade post-workout as a way of rehydrating, but there is a problem with that. Unless you've been training outside under the blazing sun for more than 90 minutes you really don't need to be drinking Gatorade. While Gatorade can be seen as a good source of those simple sugars that you want post-workout, it also has a very high fructose content, which, as was mentioned before, takes longer to digest. Therefore, in writing this I'm assuming that you're drinking Gatorade *in addition* to your post-workout carbs. In fact, the best time to drink Gatorade would be *during* your workout when it lasts more than 90 minutes. This would be to replenish the glycogen stores, sodium, and potassium that you burn through and loose while you workout so that you can continue to train at a high level. A better option than Gatorade if you are looking to replace electrolytes is Pedialyte. The Pedialyte Freeze Pops are portable solutions to your electrolyte deficiencies that you may encounter during or after a workout. The Free Pops contain a gram and a half of sugar, six calories, 211 mg of sodium, and 94 mg of potassium per 2.1 oz freeze pop.[1] Compare this to Gatorade's 34 grams of sugar, 125 calories, 275 mg of sodium, and 75 mg of potassium per 20 oz bottle and you realize that with Pedialyte Freeze Pops you get a significantly more potent electrolyte replacement with only 4% of the sugar content.[2]

So, when thinking about post-workout nutrition, remember that timing is everything. Not only do you need to eat foods that are fast digesting, but you also have to eat them as soon as possible after your workout. Eating the right amounts of these foods, as well as drinking proper amounts of fluids to rehydrate, will not only allow you to recover more quickly so you can work out harder the next time you're in the gym, but it will also ensure that you are getting everything out of your training that you are putting in to it.

Get big or die tryin'.

Charlie Cates
Self Made, owner

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[1] http://www.thedailyplate.com/nutrition-calories/food/pedialyte/freeze-pops
[2] http://www.thedailyplate.com/nutrition-calories/food/gatorade/fruit-punch-thirst-quencher