

Protein and Carbohydrates for Endurance Exercise Recovery - What Does the Science Say?

You are probably well aware that recovery from prolonged and strenuous exercise requires protein and carbohydrates. How Much Do I Need and When Do I Need It?

WILMINGTON, NC, UNITED STATES, May 11, 2020 /EINPresswire.com/ -- Whether you are a runner or an endurance athlete of another sport, and whether you are elite or recreational in your achievement level, you are probably well aware that recovery from prolonged and strenuous exercise requires protein and carbohydrates.

Protein for muscle repair and synthesis, and carbohydrates for energy production and for restoring liver and skeletal muscle glycogen.



Runners Essentials LONG RUN RECOVERY Nutritional Shake - Optimize Your Long Run Recovery | Runners and Endurance Athletes

For these reasons, most of us drink a dedicated recovery beverage or protein shake at some point after our workout. And it usually contains, at a minimum, both protein and carbohydrates. (By the way, beer doesn't count as recovery nutrition... emotional nutrition, maybe).

Many of us have a favorite recovery drink based on taste, packaging, or even on a slick, non-scientific marketing campaign, as poor a set of criteria as this may be.

And more than a few very dedicated athletes have no real idea of what they are drinking, or why.

- "I don't really know what's in it, but it's supposed to be good for you!"
- "It's got a gazillion grams of protein in it, so it must be good!"
- "A guy from the Amazon rainforest invented it, it's all-natural!"

You can do better than that.

There is scientific data you need to know if you are serious about your recovery. And you should be, because without the proper physiologic recovery, you have wasted the hard work you put in during the workout itself.

Your progress and your improvement comes from rest, repair, and recovery. Not during the workout, right?

So the questions you should be asking are:

oWhat quantity (or how many grams) of protein and carbohydrates do I really need for the best recovery? Is more protein better? Hint: 12 Tylenol for a headache is not better than 2.

oWhen is the best time to consume protein and carbs after a long workout? Hint: Don't wait until after an ice bath and a long nap.

oWhat is the optimum ratio of carbohydrates to protein that has been shown to promote recovery? Hint: It makes a difference.

Here is what the real scientific evidence tells us.

According to the review, "Nutrition to Support Recovery from Endurance Exercise: [Optimal Carbohydrate and Protein Replacement](#)", published in Current Sports Medicine Reports 2015,

With respect to quantity and timing:

Protein:

oA single 20-gram dose (or 0.25mg/kg) of high-quality protein such as whey is sufficient to maximize muscle protein synthesis after exercise, with higher amounts of protein simply oxidized as a source of fuel.

oIngestion immediately after endurance exercise is critical to enhancing muscle protein synthesis, with a delay as little as 3 hours showing a markedly reduced effect.

Carbohydrate:

oConsuming carbohydrates immediately after exercise resulted in an approximately 45% greater rate of glycogen re-synthesis compared to a delay of 2 hours.

oThe maximal rate of glycogen re-synthesis during the early recovery occurred with intake of 1.1 g/kg, or approximately 75 grams for a 150 lb. athlete.

According to the article, "[International Society of Sports Nutrition Position Stand: Nutrient Timing](#)", published in the Journal of the International Society of Sports Nutrition 2017,

For rapid replacement of glycogen stores and efficient muscle protein synthesis:

oThe optimum ratio of carbohydrate to protein is 3-4 to 1, or 60-80 grams of carbohydrate to 20 grams protein.

These are excellent guidelines for your post-endurance exercise nutrition, but of course, they are guidelines only. Your needs may be slightly different depending on your body weight and the intensity and duration of your training sessions.

The most important general take-home messages are:

1. Sooner is better
2. Massive quantities of protein aren't necessary
3. Aim for a ratio of 3 or 4 grams of carb for each 1 gram of protein

As a dedicated runner or endurance athlete, you can now evaluate your carbohydrate and protein recovery shake supplement fact panel with a more scientifically informed and critical eye. And you can rest, repair, and recover with science on your side.

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