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# THE CrossFit JOURNAL

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## Hey, Smoothie!

E.M. Burton and David "Chef" Wallach go over the finer points of a post-workout or meal-replacement shake.

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All images: E.M. Burton

CrossFit teaches a way of eating that considers both macronutrient balance and food quality. As most athletes know, by weighing and measuring intake and recording it using various metrics, you can tweak your diet to check and improve its effect on your performance.

I have been blending up a version of this smoothie nearly daily for years, having discovered its overall benefits when I was focusing my nutritional goals in preparation for pregnancy. I like it at breakfast, but with some adjustments it could make the base for a recovery shake or mid-afternoon snack.

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It's also good for people who happen to like blenders in general, or even those of us who just like to watch things spin around.

In the video below, I explore the humorous side of weighing and measuring and respond to the oft-heard comment, "Oh, I am so not gonna weigh and measure my food, dude," making a case for the necessity of measuring.

Video: [HD](#) [SD](#) [WMV](#)

Ingredients	Blocks
1 cup almond milk	1 CHO, 2 FAT
½ cup blueberries	1 CHO
3 inches of banana	1 CHO
21 grams protein, powdered (7 g = 1B PRO)	3 PRO
¼ tsp. sunflower seeds	1 FAT
2 tsp. pumpkin seeds	1 FAT
Fish oil (your daily dose)	

It's OK to go over on the fat blocks; I would triple those quantities. Also, if you're measuring your performance in any way, be precise with unfavorable carbohydrates (banana, for example) or eliminate them completely. Reintroduce them later and test your results against their inclusion.

Depending on your individual nutritional needs and interests, you can add just about anything to this as a booster. I often add a teaspoon of powdered minerals and a green powder, such as spirulina, and active culture capsules.

### Protein Powder?

This smoothie makes use of protein powder, a substance with which many athletes are familiar, but to which I hadn't given much thought until recently.

Protein powder is derived from many possible sources, and one might consider timing as a factor in the selection of protein source. According to Wikipedia—and bodybuilders everywhere—whey-based protein supplements are best to take directly following a workout, while casein-based supplements are best taken before bed because they are more slowly digested.

I use whey protein powder, and it seems as if it's a general choice, as "hydrolysed whey protein is the most popular protein hydrolysate among athletes. Whey protein has been singled out as the ultimate source of protein on the basis of an excellent amino acid profile" (3).

I'm still curious, however. My friend David "Chef" Wallach knows way more about this stuff than I do, so I sought his wise counsel. He owns CrossFit Rubicon in Vienna, Va.

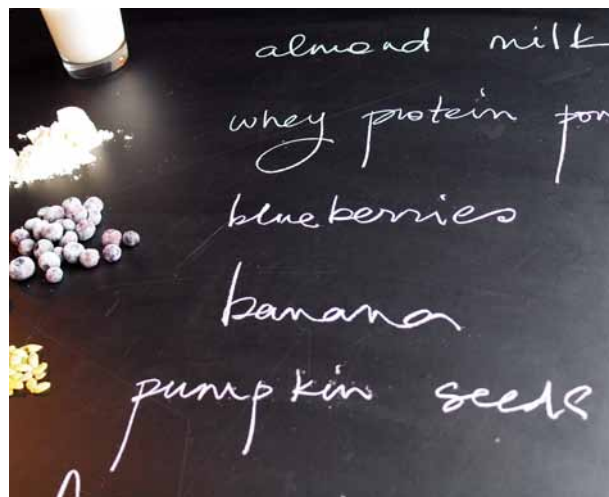
We come at performance nutrition from different backgrounds: he with his many years of clinical experience with performance nutrition, and I with all my years of experience eating. Together, we cover a wide spectrum.

I'm not sure, but I think I even taunted Chef with the mention of soy. I suggested that one could use soymilk as an alternate. What matters most was what he said next.

**Chef:** Why almond milk and not grass-fed, raw milk? If the option is available, milk is a far better choice across the board.

**Me:** Hey, wait. I thought dairy was bad and inflammatory and all that?

**Chef:** Dairy is inflammatory "and all that stuff" only when it's factory-raised, grain-fed dairy. Grass-fed dairy and its constituent fats are health promoting. And why are your ratios nearly even? Since when do CrossFitters eat balanced block ratios? In Nicole Carroll's *CrossFit Journal* piece [Getting off the Crack](#), she notes that as a population we would be far better off eating anywhere from two to five times the fat for a meal replacement (MRP) version of this shake. This particular shake at 3-3-3 is fructose-heavy and would have to be completely rewritten to be of use post-workout.



**Just as you measure your workouts, so should you measure your nutrition.**



*For a post-workout shake, consider scaling down the fructose-heavy fruit and introducing some sweet potato.*

**Me:** <Silent whimper>

(He's right, of course. I go way high on the fat for myself but was gunning for "pure" balance in the recipe.)

**Chef:** After a workout, you require a simple starch/sugar, the majority of which should not be fructose. Dextrose, waxy maize, sweet potato—all are fine, but not all fruit. PWO (post-workout) will also require no fat. Also, I tell my athletes daily that if they want to celebrate their diversity, they may use the word "smoothie" twice per class; otherwise, it's a "shake." And "shake" means creamy, smooth, frozen deliciousness—not room-temp, watery Neandercrap ... . And for the love of all that is good and right in this world, please do not mix, eat or drink this in a locker room. I can think of a dozen better places to have my PWO nutrition than in a room full of naked, sweaty men. But if that works for you, fly your flag high.

Thankfully, Chef was happy to share his shake recipe.

**Chef:** Here is a quick and nearly perfect PWO choice that takes advantage of the heightened insulin sensitivity PWO, shuttling these structural and enzymatic proteins right to where you want them most. You want to avoid the preferred path of fructose right to the replenishment of liver glycogen and let the simple starch in the yam go to muscle-glycogen stores where you most need it. This starts the repair process and acts as the appropriate shuttle, preparing the cycle for the next workout directly.

### Chef Shake

The ratio of carbohydrates and protein should reflect what kind of workout you just did. After a long-haul slogger that took an hour (like heavy Murph), go with 4:1. A max-effort deadlift day with a single Tabata session should be as low as 2:1. Duration, tempo, intensity, volume and load all play a part in choosing the right amount of protein and the right ratio.

### Ingredient Choices

Whey protein or egg whites—Egg whites are the least expensive quality protein on Earth. Both can be grass-fed and eco-organic. If you choose freeze-dried animal protein, that's your call.

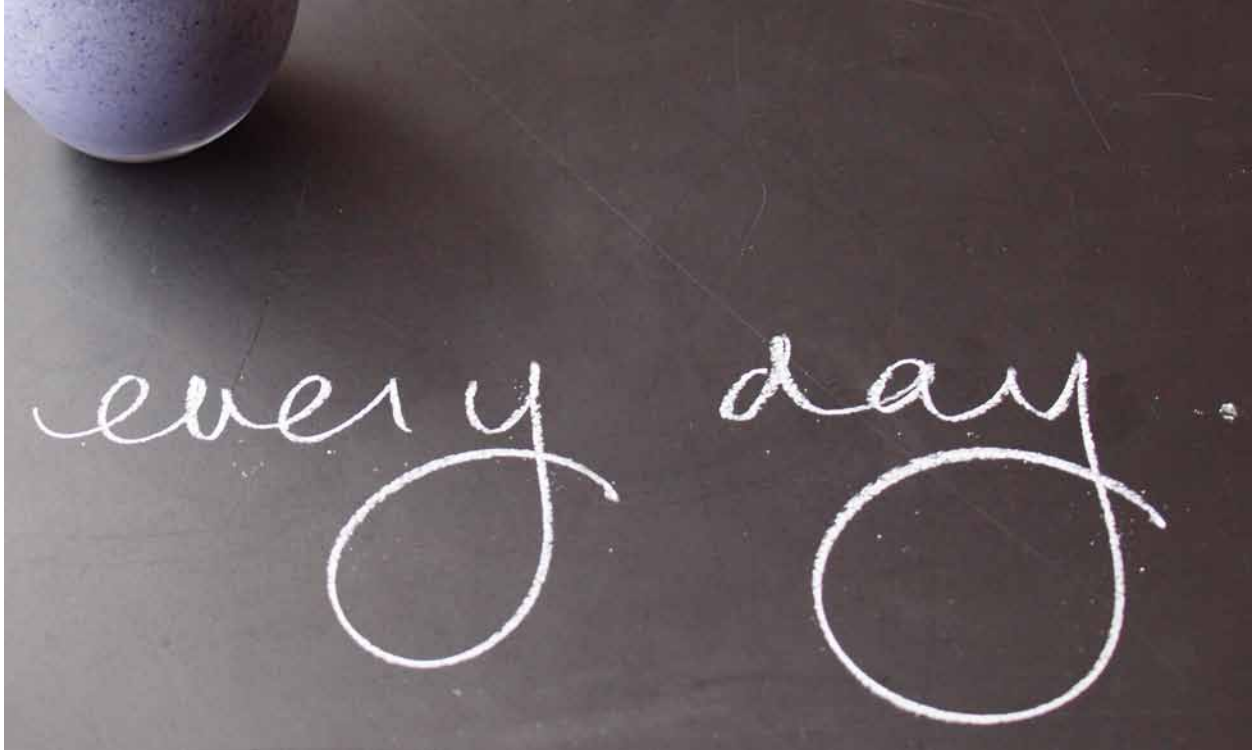
Sweet potato—The right kind of carbohydrate and happens to be delicious.

Coconut water—Not the perfect sugar, but its mineral balance is good, and it adds a lot of good flavor to the mix. Don't like this choice? Use plain water.

Coffee cubes—Do not throw out that last pot of coffee; freeze it into ice cubes. There is decent science that PWO caffeine can do good things with protein synthesis and act as both a vasodilator to get goodies where they need to go and cool you down faster. It's a minor benefit, perhaps, but a very real one.

Cinnamon—A whole teaspoon for flavor. Cinammon tastes great and is a good glucose partitioner. Of course, you could do 60 mg of R-ALA 10 minutes before the shake and get the best legal glucose partitioner you can buy.

Flavors—Add a big pinch of dried orange rind or a tiny pinch of grated orange zest and you have a PWO treat.



*If you change the ingredients depending on your workout, this smoothie can be a daily treat.*

### Notes

No fat in a PWO shake. An hour after your workout, sure, fat is your friend. But you do not want to slow down the gastric-emptying process PWO; it's the only time of the day you want to digest this luscious treat as fast as you can. If you want to get this engineered for an MRP-styled shake quickly, add your favorite fat. Most lean toward nut and seed fats, and macadamia butter is great with this one.

**Chef:** The fact that it's pretty damn primal is cool, too. It works, tastes great and avoids processed proteins and "value-added" crap that you don't need, as well as the huge profit made by those who process and market it for you. Be very careful taking protein-source advice from anyone who sells it.

### References

1. Bucci LR and Unlu L. Protein and amino acid supplements in exercise and sport. In: *Energy-Yielding Macronutrients and Energy Metabolism in Sports Nutrition*. Wolinsky I, Driskell JA, eds. Boca Raton, Fla.: CRC Press, 2000. pp.191–212.
2. Ha E and Zemel MB. Functional properties of whey, whey components, and essential amino acids: Mechanisms underlying health benefits for active people. *J Nutr Biochem* 14: 251–8, 2003.
3. Manninen AH. Hyperinsulinaemia, hyperaminoacidaemia and post-exercise muscle anabolism: The search for the optimal recovery drink. *Br J Sports Med* 40: 900–905, 2006.

