

START Nutrition™: PROTEIN 202

By Dr. Robert Portman

You've already passed Protein 101. You know that protein is important for muscle growth, and that protein needs increase with exercise. Now it's time for Protein 202—five beyond-the-basics protein facts that will help you use protein more effectively to build muscle and even burn fat. Here they are:

1. Not all proteins are equal.

There's a lot of talk about "good fats" and "bad fats" and about "good carbs" and "bad carbs," but some proteins are better than others, as well. Animal foods (meat, fish, eggs, dairy) are better protein sources than plant foods (vegetables, grains, legumes) for three reasons. First, animal foods contain much larger amounts of protein. In addition, animal proteins are more complete—meaning they contain more of the essential amino acids the body cannot manufacture on its own.

Finally, due to the high fiber content of many plant foods, the proteins in plant foods are not absorbed as well as those in animal foods. Only 78 percent of the protein contained in high-fiber legumes is actually digested, compared to 97 percent of the protein contained in animal foods. For this reason, vegetarians are advised to consume 10 percent more total protein on a daily basis than meat eaters to account for the inferior "bioavailability" of plant proteins.

2. Protein is great for weight loss.

Protein is more satiating, or filling, than carbohydrate and fat. Therefore maintaining a high-protein diet is an effective way to reduce hunger, eat fewer total calories, and shed excess body fat. A recent study from the University of Washington School of Medicine found that subjects voluntarily reduced their daily eating by 441 calories per day and lost almost 11 pounds, on average, when they switched from a low-protein diet (15 percent of calories) to a high-protein diet (30 percent of total calories).

Just as some proteins are higher in quality than others, some proteins are more filling

than others. Soy and dairy proteins are among the most filling, while egg proteins are the least filling.

3. Timing of protein intake is important.

It's not only the quality of the proteins you consume that determines how they affect your body. It's also when you consume them. The most beneficial times to consume protein are immediately before and immediately after workouts. A much higher percentage of consumed proteins are used to create muscle tissue when they are made available to the muscles during exercise stress and the recovery period following exercise.

A recent Australian study found that men gained more muscle mass over the course of a 10-week strength-training program when they consumed protein immediately before and immediately after workouts than they did when they consumed the same protein supplement in the morning and in the evening.

4. Protein during exercise improves performance and recovery.

Most people think of carbohydrate as the nutrient that boosts performance when consumed during exercise—and it's true: carbohydrate sports drinks and energy gels increase endurance and maximum exercise intensity significantly when consumed during prolonged or interval-type workouts. But, new research has also shown that sports drinks containing a little protein along with carbohydrate increase endurance even more, while also drastically reducing muscle damage, as well as resulting in faster recovery and better performance in the next workout.



The key to these benefits is the right combination of carbohydrate and protein. The ideal ratio is 4:1, or 4 grams of carbohydrate to 1 of protein. Sports drinks containing this ratio have also been shown to improve rehydration over water and conventional sports drink as well.

5. There's such a thing as protein overkill.

Many guys who work out regularly like to follow each session by consuming a protein shake containing huge amounts of protein and little or no carbohydrate. This is a mistake, because research has shown that most of this protein is either converted to fat or excreted in the urine. To maximize muscle protein synthesis after exercise, it's actually better to consume a supplement containing a fairly large amount of carbohydrate and only a modest amount of protein. This is because carbohydrate stimulates the transport and metabolic mechanisms that allow muscle protein synthesis to occur.

In a recent study from the University of Texas Health Science Center, scientists evaluated the effects of an amino acid [i.e. protein] supplement and an amino acid/carbohydrate supplement on protein synthesis. They found that the carbohydrate–amino acid supplement was 38 percent more effective than the amino acid supplement in building muscle.

Congratulations! You've graduated Protein 202. Now, go ahead and apply this knowledge to build a leaner, stronger body. **GX**



If you have a question about nutrition in general or sports nutrition in particular, please e-mail Dr. Robert Portman at askthetrainer@startfitness.com. He will answer selected questions in an upcoming column. For more information on Dr. Portman and his health products, please refer to pacifichealthlabs.com/site/index_ntscp.html.