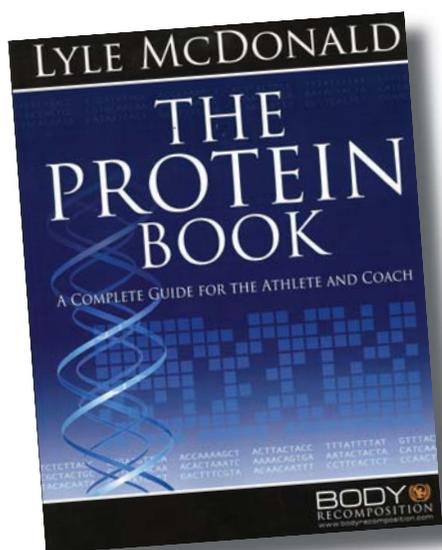


# What Athletes Need to Know about *Protein*



Lyle McDonald dispels common myths about this essential macronutrient

Virtually every athlete who wants to gain muscle is concerned about protein. Whether it's by eating large quantities of beef or drinking protein milkshakes with raw eggs, the focus is on adding quality protein to the diet – and lots of it. But are all these protein drinks and extra food necessary, or is there something to all those colorful ads in fitness magazines with pro bodybuilders endorsing the latest protein powder? We wanted some reliable answers, and the person with those answers is Lyle McDonald.

McDonald is a physiologist who is best known for his research on low-carbohydrate diets, but recently he has turned his attention to protein. The result is *The Protein Book: A Complete Guide for the Athlete and Coach*.

With more than 500 references to scientific studies, McDonald's new book examines protein nutrition for both endurance athletes and strength/power athletes. In this exclusive interview, McDonald shares his knowledge about this important macronutrient and dispels some common myths.

**BFS:** Why did you write this book?

**LM:** I had written a fairly extensive series of articles on protein for a website, and it seemed logical to expand that series (which makes up most of the technical information in this book) into a more comprehensive book.

**BFS:** Who is the book written for?

Does the reader need a basic background in nutrition to understand it?

**LM:** Like my first book, *The Ketogenic Diet*, which focused on carbohydrate diets, this one is a bit on the technical end of things. But I've done my best to explain any difficult scientific concepts as I went along. Some background in nutrition wouldn't hurt but shouldn't be required to understand the information in the book.

**BFS:** Most athletes and coaches believe that protein builds muscle and carbohydrates provide energy. Is this true?

**LM:** Essentially, yes; protein provides the building blocks for skeletal muscle, but energy is also required. This can come from either carbohydrates or dietary fat.

**BFS:** How much protein does an athlete need, and does a strength athlete such as a weightlifter need much more protein than an endurance athlete such as a distance runner?

**LM:** Assuming sufficient calories, a protein intake of roughly 1.2-1.5 g/lb for strength/power athletes and perhaps 0.9 g/lb for endurance athletes should be sufficient.

**BFS:** Do protein needs decrease or increase during dieting?

**LM:** We've known for 30 years that protein requirements go up as calories go down. Additionally, recent research is finding that increased dietary protein while dieting spares muscle loss, helps to keep blood glucose stable, keeps people fuller and keeps the metabolic rate from dropping as much.

**BFS:** Is it important to consume protein immediately after a workout to prevent muscle tissue from breaking down?

**LM:** Yes; in fact, while early work focused only on nutrients taken immediately after training, there is now research suggesting that carbs/protein taken before and/or during workouts can have benefits as well.

While it's currently unclear what the best pattern of nutrient intake around training is, I do think it's important for athletes to consume something before and/or after training to promote optimal recovery, growth and adaptations to training.

**BFS:** Is there a limit to how much protein can be consumed in one meal? Many nutritionists recommended that to gain muscle an athlete should have 6-8 protein meals a day because the body cannot assimilate a large amount of protein in one sitting.

**LM:** This is an interesting question, and there are a few different ways to look at it.

Lyle McDonald's new book about protein is an outstanding reference on all aspects of optimal protein nutrition for athletes. His book is available through [www.bodyrecomposition.com](http://www.bodyrecomposition.com).

On one hand, there's no validity to the idea that the body can only use so much of a given nutrient per meal. What happens, rather, is that the body simply slows digestion, and bigger meals just sit in the stomach longer to ensure that everything eventually gets absorbed and digested. So from that standpoint there's no real reason to think that there's a limit on the amount of protein per meal.

Some recent research has suggested a couple of odd things that might actually support the old empirical idea. The first is that there may be a maximal anabolic response to a given meal; that is, protein beyond a certain level may not provide any further benefit. That amount turns out to be in the 30-to-40-gram range or so. This would tend to suggest that eating smaller amounts more frequently is of benefit.

However, there's another odd data point that would appear to contradict that. Research (primarily using infusion of amino acids, meaning that it's unclear how this applies to *eating* protein) suggests that skeletal muscle can actually become "resistant" to further stimulation of protein synthesis. That is, eating too frequently might actually be detrimental to growth.

At this point I consider the issue unresolved; frankly, eating relatively more protein slightly less frequently will probably work about the same as eating less protein slightly more frequently.

**BFS:** Can an athlete get too much protein? It's been said that too much protein can harm the kidneys.

**LM:** This claim is based on the idea that people with pre-existing kidney problems have to restrict protein; somehow this got turned around to suggest that eating protein could damage the kidneys, but there is in fact no research to support this idea. At least one study using fairly high protein intakes in bodybuilders found no evidence of damage or other discernable effects to the kidneys, and I consider it a nonconcern.

**BFS:** How do you determine the value of protein, and what are the best sources of protein from food?

**LM:** Protein-quality assessment has been an area of debate for many years, and, frankly, I don't consider most of those assessments that relevant to athletes. Protein quality is hugely important for people eating small amounts of low-quality protein but not so relevant for people eating large amounts of protein from high-quality/mixed sources.

As far as "best" protein sources go, all proteins tend to have their pros and cons. Red meat is an excellent source of iron, B12 and zinc but can carry a lot of fat. Fish is an excellent low-fat source of protein (even the fattier cuts have the healthier fats), but there is concern over the mercury content. It's hard to go wrong with lean chicken, and I think dairy is an excellent protein source.

**BFS:** Because they don't eat meat, do vegetarians have problems with protein deficiency?

**LM:** A lot of it will depend on how strict a vegetarian they are. Individuals who eat eggs and milk (lacto-ovo vegetarians) shouldn't have much problem getting sufficient protein, and many vegetarians will eat fish or chicken (but no red meat). Strict vegans usually find it impossible to get sufficient protein without supplementation.

**BFS:** What is the value of protein drinks? Isn't it better to get protein from whole food?

**LM:** In general, I'd rather see athletes eating whole food for their protein, but protein drinks can offer advantages such as convenience (e.g., it may allow hard-training athletes a way to get protein when they can't fit in a meal), cost (many protein powders are actually cheaper than whole food), etc. Since most athletes will have problems eating whole foods around training, protein powders tend to play the

biggest role there. Eating a chicken breast right before training is usually just a good way to throw up, and whey may be a better choice.

**BFS:** There are so many types of protein drinks, such as soy, whey, milk, egg, rice. Can you give our readers some advice on which are the best?

**LM:** As above, it's hard to say which protein drink is "best"; they all tend to have pros and cons. Whey has an excellent amino acid profile (with the highest amounts of the branched chain amino acids) and is very rapidly digested; this is beneficial right around training (especially before and after) but may not be the best at other times of the day. Casein (milk) protein also has an excellent amino acid profile, but the slow digestion makes it inappropriate right around training.

Soy protein seems to have the most controversy surrounding it right now; while it has a good amino acid profile and is fairly inexpensive, the phytoestrogen content is of concern to some and it doesn't appear to promote protein synthesis as well as other proteins (such as dairy protein).

Egg protein powders are mostly just cheap, and I'm not that impressed by most of the other vegetarian protein powders (rice, hemp, pea); their main advantage is cheapness, which is not the best indicator of quality in a nutritional product. I'd stick with the higher-quality protein. **BFS**



Lyle McDonald is a competitive speed skater who also works with elite athletes. Two of his other books, *The Rapid Fat Loss Handbook* and *A Guide to Flexible Dieting*, were featured in **BFS**

magazine and provided sound, scientifically backed advice on how to lose weight quickly and safely.