



## INNOVATION.



V-1000 X-Treme Multi-Sport Goggle

## QUALITY.



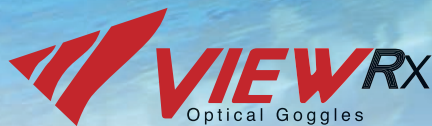
V-820 Selene Women's Goggle

## PERFORMANCE.



V-130 Shinari Racing Goggle

SINCE 1952.



viewswimming.com



## Myth Buster:

**Is protein really needed during endurance events?**

*By Salvatore J. Tirrito M.D., F.A.C.C.*

Although carbohydrates and fatty acids are the primary sources of fuel for endurance events, there has been a lot of data that support protein supplementation. In the past few years, clinical trials have demonstrated that a protein/carbohydrate drink enhances performance when compared to a carbohydrate drink alone.

The reasons for this effect are manifold and somewhat elusive. It is unlikely that the small amount of additional calories gained by drinking a carbohydrate/protein drink plays a significant role. More likely, it has to do with the fact that during prolonged exercise, as glycogen levels become depleted, the body undergoes a process called gluconeogenesis that results in the generation of glucose from non-carbohydrate substrates such as pyruvate, lactate, glycerol and amino acids. Gluconeogenesis is an energy-intensive process that can accelerate muscle breakdown in order to liberate amino acids to drive the gluconeogenic process. Small amounts of protein may help fuel the gluconeogenic process with

enough protein to allow the body to avoid breaking down muscle.

However, this is still probably not the core reason that a protein/carbohydrate drink enhances performance over a carbohydrate drink. Another, more important reason is that a protein/carbohydrate drink appears to help stem cortisol release better than a carbohydrate-only drink. Cortisol is a so-called "stress hormone" that is released in large quantities during intense exercise (a very stressful state for the body).

Normal cortisol release helps restore homeostasis, or normal baseline physiological functions, after stress. But for the endurance athlete, high levels of cortisol release may have grave consequences. Although cortisol increases the concentration of circulating glucose in the blood, which is desirable, it does this mainly by increasing the supply of amino acids for gluconeogenesis by inhibiting collagen formation, decreasing amino acid uptake in the muscles, and inhibiting protein synthesis. Also, more important to the endurance athlete, cortisol increases gastric acid secretion and potassium loss and is a potent diuretic. Therefore, a steady supply of protein — ultimately amino acids — from a protein/carbohydrate drink may stem the release of cortisol and spare valuable muscle protein.

Lastly and more widely accepted, protein with carbohydrates simply aids recovery. But when does recovery start? The notion that recovery starts with the cessation of exercise is arbitrary. For the endurance athlete recovery happens before, during and after exercise. Exercise is a highly catabolic process. It only makes sense to start rebuilding muscle (or at least slow down muscle breakdown) at the beginning of exercise, and consuming protein during exercise is proven to do that.

As for the question of how much protein you should consume during exercise, no one really knows. It's probably not very much (a few grams per hour). Protein is much harder to digest than carbohydrates. (Try eating a steak and than going for a run.) So, if you have too much protein during an endurance event you risk some serious GI distress. But take in too little and you won't get any benefit. ▲

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