

Protein Intake During Prolonged Exercise

When exercise extends beyond about two hours, your body begins to utilize some protein to fulfill its energy requirements. This metabolic process, called gluconeogenesis, allows for the synthesis of glucose from protein, helping to satisfy anywhere from 5-15% of your body's energy needs. If you fail to supply your body with protein from your fuel, it has only one other choice: your own muscle! Called "lean muscle tissue catabolism" or "muscle cannibalization," this process devastates performance through muscle deterioration and increased fatigue-causing ammonia accumulation, and also negatively affects the immune system and recovery. Carbohydrates are still the primary component of your fuel, but it should include a small amount of protein when training sessions or races last longer than two to three hours. We believe soy protein's amino acid profile is ideal for use during exercise, which is why the Hammer Nutrition fuels, Perpetuem and Sustained Energy, contain soy as the protein source. For instance, compared to whey protein (which is ideal for recovery), soy protein has higher levels of phenylalanine, which may aid in maintaining alertness during ultra-distance races.

Soy protein has higher amounts of histidine, which is part of the beta-alanyl l-histidine dipeptide known as carnosine, which has antioxidant/acid buffering benefits. Finally, soy protein has higher levels of aspartic acid, which plays an important role in energy production via the Krebs Cycle. Dr. Bill Misner writes, "Soy's remarkable donation to endurance performance is deserving of our review. Soy has been observed to produce a higher degree of uric acid content than whey proteins. Uric Acid is reduced by excessive free radicals produced during exercise. When uric acid levels are higher, that is an indication of less free radical release due to antioxidant influence of the isoflavones found exclusively in soy. This is one reason why soy may be the preferred dietary protein application during endurance exercise demand."

Using Perpetuem or Sustained Energy as your primary fuel during workouts and races longer than two to three hours will satisfy energy requirements from a precise ratio of complex carbohydrates and soy protein, the latter of which helps protect against excess muscle breakdown. You stay healthier, reduce soreness, and decrease recovery time.