

## **Protein Assimilation, Usage and Storage**

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*Category: Master*

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### ABSTRACT

Common concerns among athletes regarding protein consumption are the following: what protein type(s) is best suited for their particular needs; what amounts of protein should be consumed for their supplementation; and lastly, what should the timing of protein consumption be, for prime utilization in the body? There is a recommended daily allowance (RDA) by the National Institute of Health (NIH). The NIH recommends that an individual should be ingesting 0.8g/kg of body weight a day. Active individuals who include resistance training into their daily regime may need more than the RDA. The purpose of this study is to determine if 4.4 grams of protein per kilogram of body weight for is adequate, inadequate or in excess for the body to utilize for recovery or muscle hypertrophy during a five (5) week training intervention. This study utilized 2 male subjects that volunteered and were considered trained athletes with a minimum of one-year experience in lifting weights. Prior to testing, each subject signed an informed consent form approved by the Institutional Review Board (IRB) for humans as subjects at Midwestern State University and a physical activity readiness questionnaire (PAR-Q™). Resting measures included: height (cm), weight (kg), body fat analysis through skinfold (3 site, %), anthropometric circumference measures at the abdomen, biceps, hips, gastrocnemius, forearm, upper thigh, mid-thigh and waist. During the intervention, each subject was given 4.4 g/kg/day of protein based on a daily nutritional analysis and supplementation of whey protein. Pre and post strength tests were the following: 1 repetition maximal (RM) bench press, latissimus pull down, squat, leg extension and leg curl. After a 5-week intervention with protein and supervised weight training sessions, all results were recorded and analyzed. Averages from every exercise from each week were charted to be analyzed to see progress throughout the intervention and compared to one another. For both subjects, body weight and all circumference measures increased after the 5 week intervention of training and high protein intake. Additionally, body fat percentage was reduced in both subjects following the intervention. Strength improvements through 1RM testing was shown in both subjects for the following: latissimus pull down, squat, leg extension and leg curl. It is concluded that a 5 week intervention of training and high protein intake facilitates strength and lean muscle mass.