

GOT SKIM MILK?

Research on skim milk and muscle recovery

By Jim Brown, PhD, Executive Editor, Sports Performance Journal

Resistance trainers who drink skim milk after an exercise session build approximately twice as much muscle tissue as those who rely on soy beverages, according to a study conducted at McMaster University and published in the April 2007 issue of the *American Journal of Clinical Nutrition*.

A research team headed by Dr. Stuart M. Phillips set out to determine how soy would compare to skim milk in regard to protein balance after resistance training. Eight weightlifters were given a soy beverage or powdered skim milk after performing a series of exercises with one leg. For a period of three hours after the workout, muscle uptake of amino acids was significantly greater when the men drank milk than when they consumed a soy product. The measurements were taken after a single workout, but the authors suggest that the protein action would result in muscle mass gains twice as great with milk as with soy after a 10-week period. They also found evidence that milk may also benefit athletes after exhaustive endurance exercise, such as cycling.

Dr. Phillips points out milk is much less expensive and much more available than supplements designed specifically for muscle recovery. He calculates that one ounce of milk costs 20-30 times less than most protein supplements.

Whey and soy result in a rapid, but temporary increase of amino acids into the bloodstream and produce building blocks for muscle tissue. Proteins that take longer to digest (such as those found in milk) produce a gradual, but longer-lasting increase of amino acids in the bloodstream. These slower acting proteins do not promote the growth of new muscle tissue, but they do slow down or prevent the breakdown of muscle tissue.

[SPJ comments from Megan Mangano, RD, Performance Nutritionist at Athletes' Performance: "The most important point is that athletes should have a recovery snack within a half-hour after a workout that includes carbohydrates and protein to help maximize recovery and reduce muscle breakdown. Whey protein, casein protein, and soy protein supplements all can provide benefits for post-workout recovery. A mixture of all three is great. Whey is broken down the quickest, soy is in the middle, and casein is the slowest. However, low-fat chocolate milk can be a great recovery drink after exercise due to its ideal carbohydrate and protein content/ratio, too. The decision depends more on personal preference, tolerance, convenience, and health goals.]

Dr. Jim Brown is the executive editor of The Sports Performance Journal, an online publication hosted by Athletes' Performance (AP) from which this article is adapted. AP is the worldwide leader in integrated performance training and performance therapy. The Journal provides athletes and exercisers with research-based, timely, and practical information regarding sports performance, training methods, injury treatment and prevention, nutrition, psychology, and more. SPJ content is based on the expertise and experience of the AP Performance Team and other nationally recognized authorities, and on reports of findings published in scientific periodicals.