

MILK: Nature's Sports Drink

Research Overview on the Benefits
of Milk for Sports Recovery



Milk provides many important nutrients needed for overall health. Recently, a number of studies have shown that milk's powerful nutrient package has several benefits for post-exercise recovery. In fact, this emerging research shows that drinking milk after exercise can be as effective as some sports drinks in helping the body refuel, recover and rehydrate. Below are summaries of key studies and a review paper highlighting milk's benefits following exercise.

Milk, the new sports drink? A Review.

Roy BD. A review. J Int Soc Sports Nutr. 2008;5:15.

Summary: This review discusses the use of milk as an exercise recovery beverage. Milk has emerged as an effective post-workout recovery drink due to its powerful nutrient package that supplies the nutrition the body needs after a workout. The carbohydrates in milk help refuel the body, protein helps reduce muscle breakdown and stimulate growth, and fluid and electrolytes aid in rehydration. Routinely drinking milk after a resistance training workout has been shown to help improve body composition. In addition, research shows that milk supports endurance exercise performance when consumed between two intensive workouts.

Drinking milk has been shown to be an excellent way to replace fluid that is lost during exercise.

Milk as an effective post-exercise rehydration drink.

Shirreffs SM, et al. Br J Nutr. 2007;98:173.

Summary: In this study, 11 young men and women consumed one of four beverages (fat-free milk, fat-free milk plus sodium chloride, a carbohydrate-electrolyte sports drink or water) immediately following a 1.8% loss of body weight from exercising in the heat. Fluid balance was assessed before the exercise and during five hours of recovery. Consuming the milk drinks resulted in less urine output during the recovery compared to the sports drink or water. Subjects who consumed the sports drink or water returned to a negative fluid balance one hour after drinking the beverage. However, those who drank milk remained in either a positive or neutral fluid balance throughout the entire five-hour recovery period.



Drinking milk after a workout may help reduce muscle damage and improve recovery, which in turn may help the body perform better during its next workout.

Improved endurance capacity following chocolate milk consumption compared with 2 commercially available sports drinks.

Thomas K, et al. Appl Physiol Nutr Metab. 2009;34:78-82.

Summary: In this study, male cyclists performed a glycogen depleting exercise session and four hours later performed a second cycling exercise. Immediately after the first cycling exercise, and again two hours later, subjects consumed either chocolate milk, a carbohydrate replacement drink or a fluid replacement drink. Consumption of chocolate milk resulted in subjects cycling 51% longer in the second exercise session than after the carbohydrate replacement drink and 43% longer than after the fluid replacement drink.

Acute milk-based protein-CHO supplementation attenuates exercise-induced muscle damage.

Cockburn E, et al. Appl Physiol Nutr Metab. 2008;33:775.

Summary: In this study, 24 healthy men who regularly competed in team sports were asked to perform a hamstring resistance exercise designed to induce acute muscle damage. Immediately following the workout and again within two hours of completing the exercises, participants consumed 500 mL of either water, a low-fat chocolate milkshake, low-fat milk or a carbohydrate sports drink. Drinking low-fat milk or a low-fat chocolate milkshake after exercise was shown to decrease markers of muscle damage compared to a carbohydrate beverage.

Drinking milk as a post-workout beverage can increase the body's ability to make new muscle and may help improve body composition over time.

Consumption of fat-free fluid milk after resistance exercise promotes greater lean mass accretion than does consumption of soy or carbohydrate in young, novice, male weightlifters.

Hartman JW, et al. Am J Clin Nut. 2007;86:373.

Summary: In this study, 56 previously untrained, healthy, young males consumed 500 mL of either fat-free milk, fat-free soy protein or a carbohydrate drink immediately and one hour after resistance training five days a week for 12 weeks. At the end of 12 weeks, the group consuming milk had greater increases in lean mass and greater increases in Type II muscle fiber area than those in the soy or carbohydrate groups. Type I muscle fiber area increased in both the milk and soy groups, with the milk group increases significantly greater than the carbohydrate group. There were no differences in strength between the three groups.

Body composition and strength changes in women with milk and resistance exercise.

Josse A, et al. Med Sci Sports Exerc. 2009 Dec 9. [Epub ahead of print]

Summary: In a study design similar as above, 20 young untrained women consumed either 500 mL of fat-free milk or a carbohydrate drink immediately and one hour after resistance exercise, five days a week for 12 weeks. Following the 12 weeks of training and supplementation, the women who drank milk had greater gains in lean mass, decreased fat mass and greater improvements in isotonic strength for some exercises. These findings suggest that routinely consuming milk during recovery from resistance exercise supports body composition changes in both men and women.