MILK

Nature's Sports Drink

A Research Overview on the Benefits of Milk for Sports Recovery

Milk provides many important nutrients for overall health. Studies have shown that milk's powerful nutrient package has several benefits for post-exercise recovery. In fact, this emerging research shows 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 highlighting milk's benefits following exercise.

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

Rehydration and nutrition immediately following exercise may help with recovery and improve future exercise performance.

This study investigated whether drinking milk after a bout of dehydrating exercise helps to restore fluid balance better than a drink consisting of just carbohydrates and electrolytes or water in seven healthy men. The researchers found that likely due to the nutrient package it provides, gradually drinking milk restored fluid balance better than water or the carbohydrate-electrolyte drink.

The researchers suggest this may be due to the differences in how the three beverages are digested. Milk is released more slowly from the stomach compared to water or a traditional sports drink comprised of carbohydrates and electrolytes. The higher calorie content and presence of dairy proteins (casein and whey) in milk contribute to this effect. *Seery S and Jakeman P. Br J Nutr. 2016;116(6):1013-21.*

Effect of drinking milk on rehydration in youth following exercise in the heat.

Researchers found that drinking fat-free milk resulted in greater fluid balance and retention compared to water or the carbohydrate/electrolyte drink following a bout of exercise in the heat in children (7-11 years) and adolescents (14-17 years). Similar to the previous study, they concluded that drinking skim milk was more effective than water or a carbohydrate/electrolyte drink at replacing sweat losses and promoting rehydration. *Volterman KA, et al. Appl Physiol Nutr Metab. 2014;39(11):1257-64.*

Studies show drinking milk after a workout may help improve recovery, which in turn may help the body perform better during its next workout.

Recovery and subsequent endurance performance can be enhanced with carbohydrate-protein supplementation.

In a study looking at ten cyclists, researchers found those who drank low-fat chocolate milk after a workout had better subsequent performance and stimulation of muscle protein synthesis immediately following and again two hours after exercise than those who drank a carbohydrate containing beverage with the same amount of calories or a placebo. The researchers stated that activation of protein synthesis – or the buildup of muscle protein - is an important metabolic response during recovery and a key component for muscle tissue repair and adaptation to training. This research suggests low-fat chocolate milk may help improve future exercise performance and provide a stronger signal to the muscles to start rebuilding and repairing themselves when consumed following exercise compared to a carbohydrate-only based beverage. *Ferguson-Stegall L, et al. J Strength Cond Res. 2011;25(5):1210-24.*

Chocolate milk and endurance exercise recovery: protein balance, glycogen, and performance.

This study examined the impact of drinking chocolate fat-free milk following endurance exercise on markers of protein breakdown, energy stored in the muscle, and subsequent performance in male runners. Compared to a carbohydrate-only beverage, drinking fat-free chocolate milk was shown to have unique benefits on enhancing recovery, including greater muscle protein synthesis and increasing time to exhaustion. *Lunn WR, et al. Med Sci Sports Exerc. 2012;44(4):682-91.*

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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.

Drinking fat-free milk immediately post-resistance exercise may promote greater lean body mass development than a soy protein or a carbohydrate drink.

This study looked at the impact of drinking fat-free milk, fat-free soy protein, and a comparable carbohydrate beverage immediately following and then one-hour post resistance exercise on 56 healthy young men who participated in a twelve week resistance exercise program. Researchers found that those who regularly drank milk following resistance exercise had greater increase in muscle fiber size, lean mass and improvements in body composition. *Hartman JW, et al. Am J Clin Nutr. 2007;86(2):373-81.*

Carbohydrate-protein supplementation and muscle recovery post resistance exercise.

A study showed that in 32 untrained subjects, those who drank low-fat chocolate milk had significantly greater improvements in their ability to adapt to cycling through a 4.5-week aerobic exercise workout regimen compared to those who drank an isocaloric carbohydrate-based beverage or placebo. Maximal oxygen consumption (VO2 max) was significantly greater in the chocolate milk group compared to the carbohydrate or placebo groups. Additionally, improvements in body composition, as evidenced by lean and fat mass, were found among those drinking chocolate milk compared to the carbohydrate beverage. The researchers concluded that drinking chocolate milk post-resistance exercise improved the subjects' ability to exercise at higher intensity more effectively than a carbohydrate beverage alone. *Ferguson-Stegall L, et al. J Nutr Metab. 2011:623182.*

- Questions?-

Still have lingering questions about milk? Or are you looking to connect with your *state/regional dairy council*?

Contact Allison Koch (*Allison.Koch@dairy.org*) at National Dairy Council today!

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