



Milk – The New Post-Exercise Recovery Drink

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Nutritional intake is important for optimizing sport and exercise performance. Furthermore good nutrition is important in optimizing adaptations to training. For example, the ancient Greeks believed that high protein intakes were important for athletes, and these athletes would consume diets that contained excessive amounts of meat. Such ideas are still pervasive today, especially with resistance based sports such as body building. It is common for resistance athletes to consume diets that are more than double the recommended levels of dietary protein. In addition, athletes who participate in body building and similar sports are bombarded with marketing for various supplements, many of which are very high in protein. Research has clearly demonstrated that such excessively high protein intakes aren't necessary to facilitate the adaptations that occur with resistance training. Research has also established that the timing of nutritional intake is also very important in optimizing the adaptations to this form of exercise, as well as recovery from both resistance and endurance exercise. Finally, the nutrient composition of post-exercise nutritional intake has also been shown to be important in the recovery from endurance exercise and adaptations/recovery from resistance exercise.

Bovine based milk and milk products represent a very good source of proteins, lipids, amino acids, vitamins and minerals. The health benefits of milk have been well established and have been extensively reviewed elsewhere. Low-fat milk has a number of characteristics that theoretically make it a potentially good recovery beverage (Table 1). Firstly, it contains carbohydrates (lactose) in amounts similar to many commercially available sports drinks (glucose, maltodextrin). Milk contains casein and whey proteins in a ratio of 3:1 which provides for slower digestion and absorption of these proteins resulting in sustained elevations of blood amino acid concentrations. Another advantage is that whey protein also contains a large proportion of branched chain amino acids which have an integral role in muscle metabolism and protein synthesis. Finally, milk also has naturally high concentrations of electrolytes, which are naturally lost through sweating during exercise. The high concentrations of these electrolytes should aid in fluid recovery following exercise. Based on these characteristics of milk, there has been growing sport nutrition research interest in milk and its possible roles as an exercise beverage for both resistance and endurance sports and training.

Conclusion

There is growing scientific evidence to support the use of low-fat milk following exercise by both individuals and athletes who habitually undertake strength or endurance training. There is data which suggests that fat free milk is as effective as, and possibly even more effective than, commercially available sports drinks at promoting recovery from strength and endurance exercise. Milk also has the added benefit of providing additional nutrients and vitamins that are not present in commercial sports drinks. In conclusion, fat free milk is a safe and effective post-

exercise beverage that has been shown to promote recovery from exercise and should be considered as a viable alternative to commercial sports drinks by lactose tolerant individuals.

Nutrient Information for milk and various sports drinks

	Whole Milk (3.25%)	Partly Skimmed (2%)	Partly Skimmed (1%)	Skim Milk (0.1%)	Chocolate Milk, Partly Skimmed* (2%)	Gatorade Thirst Quencher®	Gatorade Endurance Formula®	Accelerade®
Kcal	159	128	108	90	189	52	53	85
kJ	663	536	453	380	793	218	221	354
Protein (g)	9	9	9	9	8	0	0	4
Fat (g)	9	5	3	trace	5	0	0	0
Carbohydrate (g)	12	12	12	13	27	15	15	16
Sodium (mg)	126	129	129	133	159	115	211	127
Potassium (mg)	391	398	402	431	446	31	95	16

All presented information is based on a 250 mL serving of each of the different beverages. Data is from <http://www.dairynutrition.ca>, <http://www.gatorade.com>, and <http://www.accelerade.com>. *Chocolate milk has added sucrose and cocoa and the macronutrient composition of chocolate milk varies depending on the specific manufacturer.

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**Remember to

1. Always plan ahead for what you are going to eat
2. Obtain adequate amounts of protein
3. Work on Flexibility
4. Supplement your diet with a fish oil and multi-vitamin

Let me know if I can help. Email me at architechsports@gmail.com

God Bless,

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