

Chocolate milk is good for exhausted muscles

Indiana University Bloomington physiologist Joel Stager has found that drinking chocolate milk is one of the best things an athlete can do to recover shortly after a rigorous practice. Chocolate milk, as opposed to white milk, has a high carbohydrate and protein content, ideal for exhausted muscles. It also replaces fluids lost as sweat during workouts. Stager is a professor in the Department of Kinesiology in IUB's School of Health, Physical Education and Recreation and is the director of the Counsilman Center for the Science of Swimming. Stager also coaches swimmers. He first tested his "recovery by chocolate milk" theory several years ago on his swimmers, who had been struggling with their twice-a-day practices. The results were so promising that he and his doctoral students, led by Jason Karp, conducted a study involving cyclists in a more controlled environment. The chocolate milk proved to be just as effective a recovery product as one commercial sports drink and almost twice as effective as another commercial sports drink. Stager said chocolate milk would be particularly helpful for athletes such as swimmers, long-distance runners and cyclists enduring long or intense practices, and for other athletes who practice more than once a day. An athlete of average weight could drink around two 8-ounce glasses of chocolate milk each hour for four to six hours following a rigorous workout, according to research-based recommendations for maximum recovery. Stager added that milkshakes are a good alternative for athletes who don't like chocolate milk. The research was funded by Dairy and Nutrition Council Inc. For more information, contact Stager at 812-855-1637 and stagerj@indiana.edu and Karp at 812-332-3653 and runman@indiana.edu.

(WebMD) During a 2004 Summer Olympics awash in controversies over steroids and supplements, one sportswriter wryly noticed that top American swimmer Michael Phelps was playing it safe ~ he preferred to drink Carnation Instant Breakfast between races. Now it appears that the six-time gold medalist may have been onto something. A new study shows that plain old chocolate milk may be as good ~ or better ~ than sports drinks like Gatorade at helping athletes recover from strenuous exercise. The study, published in the *International Journal of Sport Nutrition and Exercise Metabolism*, was small in scale; it was partially funded by the dairy industry. But dietitians say the study should help to counter the notion that high-tech, expensive supplements are better than whole foods when it comes to athletic performance. They also note that milk contains key nutrients, such as calcium and vitamin D, in quantities that sports drinks can't match.

"[Milk] is a sports drink 'plus,'" Keith Ayoob, EdD, a registered dietitian and associate professor of pediatrics at the Albert Einstein College of Medicine, tells WebMD. "It will supply you with things you need whether or not you're working out."

The study builds on findings that intense endurance exercise reduces the muscles' supply of stored glucose, or glycogen, a key source of fuel for exercise. To maximize glycogen replacement, the American College of Sports Medicine and the American Dietetic Association recommend taking in a serving of carbohydrates within 30 minutes after a long and vigorous workout.

Milk vs. Sports Drinks

Common sports drinks such as Gatorade supply those carbs, as well as fluids and electrolytes lost through sweat. However, more recent research suggests that adding protein to the mix may further hasten recovery. Hence the new wave of drinks such as Endurox R4 that include protein as well as higher doses of carbs.

In the study, nine male cyclists rode until their muscles were depleted of energy, then rested four hours and biked again until exhaustion. During the rest period, the cyclists drank low-fat chocolate milk, Gatorade, or Endurox R4. During a second round of exercise, the cyclists who drank the chocolate milk were able to bike about 50% longer than those who drank Endurox, and about as long as those who drank the Gatorade.

The findings suggest that chocolate milk has an optimal ratio of carbohydrates to protein to help refuel tired muscles, researcher Joel M. Stager, PhD, Indiana University kinesiology professor, tells WebMD.

But the most puzzling result of the study, experts say, was why Endurox ~ which has the same carb-to-protein ratio as the chocolate milk ~ fared so poorly. Researcher Jeanne D. Johnston, MA, tells WebMD it may have to do with the different composition of the sugars in the milk. Another theory is that the sugars in the milk may be better absorbed in the gut than those in the Endurox.

Edward F. Coyle, PhD, a researcher on exercise and hydration at the University of Texas, tells WebMD the trial would have been stronger if the researchers had also tested the effect of flavored water or another dummy (placebo) drink.

The study was partly funded by the Dairy and Nutrition Council, an industry group. Coyle says that the study's reliance on industry funding is not unusual in the world of sports research, as federal funding for such research is hard to come by.

A Cheaper Alternative?

While rapid nutrient replacement may not be important for casual exercisers, it can make a big difference in performance for competitive athletes who work out vigorously once or twice a day, says Roberta Anding, a sports dietitian and spokeswoman for the American Dietetic Association.

Anding has long recommended chocolate milk for young athletes who come to her practice at Texas Children's Hospital in Houston. For children and teenagers from lower-income families, it doesn't make sense to spend serious money on sports drinks when they can get milk as part of a subsidized lunch program, she tells WebMD. The only advantage of sports drinks, she notes, is that they never spoil.

Ayoob estimates that more than two-thirds of teenagers should be drinking more milk anyway because they don't get enough calcium in their diets. He also recommends milk for its vitamin D and potassium content. "For me, this is a no-brainer," he says.