



### **GEORGIA TECH VIDEO:**

## **"SPORTS DRINKS" MAY BE BETTER THAN WATER FOR SOME SKILLED ATHLETES**

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Georgia Tech research shows carbohydrate-electrolyte "sports drinks" are more effective than water for boosting performance and preventing hypoglycemia, or low blood glucose.

Dr. Mindy Millard-Stafford, associate professor in the Department of Health and Performance, said consuming sports drinks had no negative effects on runners

participating in the Georgia Tech study, contrary to earlier research findings. In fact, the findings contradict earlier beliefs that water is the best liquid for athletes to consume while exercising in the heat.

### **VISUALS AVAILABLE:**

- \*Runners circling track, being handed sports drinks while running.**
- \*Collecting exhaled air samples from runners while on treadmill.**
- \*Blood samples being drawn.**
- \*Blood pressure being tested.**
- \*Runners weighing in for experiment.**
- \*Interview with Dr. Mindy Millard-Stafford.**
- \*Runners drinking sports drink.**

Many athletes have been urged to drink only water or highly diluted glucose solutions during exercise since the mid-1970s. Studies at that time showed that commercial sports drinks stayed in the stomach longer than water, leading researchers to believe they might move too slowly through the body. However, subsequent studies have suggested that sports drinks make

up for lost time by moving rapidly through the body after leaving the stomach.

The tests, run during August 1990 and 1991 in Atlanta, involved 19 athletes who averaged running 40 miles per week and had completed a 20-mile run during the month before the testing. The athletes ran two 40-kilometer, or about 25-mile, routes during the experiment and drank a prescribed amount of fluid during exercise.

**-OVER-**

The athletes arrived for each run after fasting overnight and consuming only water for breakfast. They drank 400 milliliters of the sports drink or of a water placebo, had blood samples drawn and weighed in. The placebo included water plus non-caloric flavoring and color identical to those in the sports drink -- supplied by the drink manufacturer -- along with non-caloric sweetener.

The athletes then began the run. At the 5-, 15-, 25- and 35-kilometer points researchers checked the runners' body temperatures and had them run on a treadmill while breathing through a tube into a large meteorological balloon. The exhaled air was tested to determine whether the athletes were burning carbohydrates or fat, and to check the percentage of their maximum aerobic capacity at which they were running. Blood samples were taken halfway through and immediately following the run.

The athletes also consumed about eight ounces of the sports drink or the water placebo every three miles, based on American College of Sports Medicine guidelines.

Although the runners did not know at each test whether they were consuming the sports drink or a water placebo, six out of eight noticed a dramatic improvement in performance when using the sports drink. Many were hypoglycemic, dizzy and nauseated when they completed the run having had the water placebo. Two runners were unable to complete the race when they consumed water.

Stafford said the findings have several applications. Workers in fields such as construction and road building/repair who work long days in the heat might benefit from the results, as might military personnel who work in hot environments wearing heavy clothes and toting weighty gear.

Athletes preparing for the 1996 Summer Olympics in Atlanta might benefit, as well, she noted. The results, however, cannot be generalized to all athletes.

The researchers hope to pursue their studies in this area. Currently, they are collecting additional data on female runners to see if gender differences exist in fluid requirements or metabolism and efficiency of sports drinks. The researchers also hope to establish more specific fluid consumption recommendations for highly trained athletes competing in the heat.

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