

Beverage Choice Can Affect the Odds of a Pit Stop



By Ruth Kava — April 27, 2016



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There are times, as endurance athletes are aware, when stopping what you're doing for a bathroom break is *not* what you want to do. But staying well hydrated during exercise (for example, during a marathon run) is also crucial for well-being. So what should you drink before or during exercise to achieve these aims — water or orange juice or energy drinks or maybe milk? The possibilities are endless.

A recent [study](#) [2] led by Dr. Ronald J. Maughan of the School of Sport, Exercise and Health Sciences, Loughborough University, UK, compared the effects of 13 different commonly consumed beverages on urine output and fluid balance of 72 healthy, well-hydrated, physically active men between the ages of 18 and 35 years. The researchers then established a Beverage Hydration Index (BHI) as the volume of urine produced after drinking a beverage compared to the volume produced after drinking water.

The experimental procedure involved having each person participate in a maximum of four experimental trials of water plus three other test drinks. After an overnight fast, the participants drank 500 ml (about 17 fluid ounces) of still water within 15 minutes. On arrival in the laboratory, blood samples were withdrawn. Thirty minutes later they drank one liter (about 34 ounces) of the assigned experimental beverage, and immediately emptied their bladders. After each hour they again emptied their bladders for a total of four hours.

There were 12 test beverages plus water assessed. These included:

- sparkling water
- cola
- diet cola
- sports drink
- oral rehydration solution (ORS)

- orange juice
- lager
- coffee
- tea
- cold tea
- full fat milk
- skim milk.

The investigators then assessed the participants' urine output and fluid balance and used this information to construct their BHIs.

Two hours after drinking the test beverages, the BHI values (corrected for each drink's water content) for full-fat milk, skimmed milk, and ORS were significantly greater than that for water. These beverages' BHI were still significantly greater at four hours, as was that of orange juice. Cumulative urine output at four hours weren't different than that of water for colas, teas, coffee, lager, orange juice, sparkling water or a sports drink.

Thus, these data suggested that if one wants to avoid pit stops during sporting events, these latter beverages would serve the purpose better than milk or ORS. Of course, this conclusion might not be applicable to women or men of different ages, or to people whose hydration status isn't normal — that remains for further research to discover.

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