Rehydration After Exercise in the Heat: A Comparison of 4 Commonly Used Drinks

Susan M. Shirreffs, Luis F. Aragon-Vargas, Mhairi Keil, Thomas D. Love, and Sian Phillips

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To determine the effectiveness of 3 commonly used beverages in restoring fluid and electrolyte balance, 8 volunteers dehydrated by 1.94% ± 0.17% of body mass by intermittent exercise in the heat, than ingested a carbohydrate-electrolyte solution (Gatorade), carbonated water/apple-juice mixture (Apfelschorle), and San Benedetto mineral water in a volume equal to 150% body-mass loss. These drinks are all are perceived to be effective rehydration solutions, and their effectiveness was compared with the rehydration effectiveness of Evian mineral water, which is not perceived in this way by athletes. Four hours after rehydration, the subjects were in a significantly lower hydration status than the pretrial situation on trials with Apfelschorle (-365 ± 319 mL, \( P = 0.030 \)), Evian (-529 ± 319 mL, \( P < 0.0005 \)), and Dan Benedetto (-401 ± 353 mL, \( P = 0.016 \)) but were in the same hydration status as before the dehydration exercise on Gatorade (-201 ± 388 mL, \( P = 0.549 \)). Sodium balance was negative on all trials throughout the study; only with Apfelschorle did subjects remain in positive potassium balance. In this scenario, recovery of fluid balance can only be achieved when significant, albeit insufficient, quantities of sodium are ingested after exercise. There is a limited range of commercially available products that have a composition sufficient to achieve this, even though the public thinks that some of the traditional drinks are effective for this purpose.