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**SHARP RL , et al.****Role of sodium in fluid homeostasis with exercise.**

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This paper provides a review of recent literature concerning the interactive effects of sodium and fluid ingestion in maintaining fluid homeostasis during and following exposure to heat and exercise. Heavy sweating during exercise combined with heat exposure commonly produces fluid deficits corresponding to 1-8% loss in body mass. Thus, a great deal of attention has been focused on developing fluid replacement guidelines and products for active people. Recently, there have been reports of more frequent cases of hyponatremia among individuals who tend to over-ingest water during exercise lasting more than four hours, and inclusion of sodium chloride in the fluid replacement beverage is often suggested as a potential means of reducing risk of hyponatremia. Although hyponatremia is not likely to be a major risk factor for the general population, ultra-endurance athletes and people with occupational physical activity and heat exposure may benefit from these recommendations. Replacement of fluid deficits after exercise and heat exposure is another area that has received considerable attention. Studies in this area suggest that if water is consumed, the volume ingested needs to exceed the fluid deficit by approximately 150% to compensate for the urinary losses that will occur with water ingestion. Inclusion of sodium chloride and other solutes in the rehydration beverage reduces urinary water loss, leading to more rapid recovery of the fluid balance. Data are presented in this paper that suggest a quantifiable interactive relationship between sodium content and fluid volume in promoting rapid recovery of fluid balance after exercise and thermal-induced dehydration.

PMID: 16772634

MeSH terms: Dehydration, Exercise, Humans, Hyponatremia, Rehydration Solutions, Sodium, Sodium Chloride, Water, Water-Electrolyte Balance

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