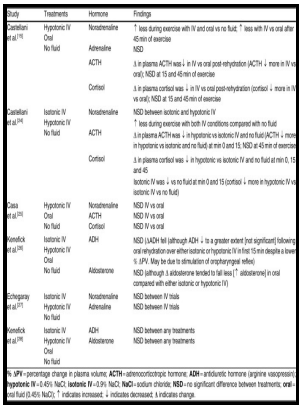
Intravenous versus oral rehydration during a brief period - responses to subsequent exercise in the heat

- - Intravenous versus oral rehydration during a brief period: Responses to subsequent exercise in the heat — Arizona State University



Study	Treatments	Hormone	Findings
Carrollani et al.[19]	Hypotonic IV Oral No fluid	Noradrenaline	↑ less during exercise with IV and oral vs no fluid; ↑ less with IV vs oral after 45 min of exercise
		Adrenaline	NSD
		ACTH	Δ in plasma ACTH was ↓ in IV vs oral post-rehydration (ACTH ↓ more in IV vs oral); NSD at 15 and 45 min of exercise
		Cortisol	Δ in plasma cortisol was ↓ in IV vs oral post-rehydration (cortisol ↓ more in IV vs oral); NSD at 15 and 45 min of exercise
Carrollani et al.[24]	Isotonic IV Hypotonic IV No fluid	Noradrenaline	NSD between isotonic and hypotonic IV
		ACTH	↑ less during exercise with both IV conditions compared with no fluid Δ in plasma ACTH was ↓ in hypotonic vs isotonic IV and no fluid (ACTH ↓ more in hypotonic vs isotonic and no fluid) at min 0 and 15; NSD at 45 min of exercise
		Cortisol	Δ in plasma cortisol was ↓ in hypotonic vs isotonic IV and no fluid at min 0, 15 and 45 Isotonic IV was ↓ vs no fluid at min 0 and 15 (cortisol ↓ more in hypotonic IV vs isotonic IV vs no fluid)
Casa et al.[20]	Hypotonic IV Oral No fluid	Noradrenaline	NSD IV vs oral
		ACTH	NSD IV vs oral
		Cortisol	NSD IV vs oral
Kovacick et al.[24]	Isotonic IV Hypotonic IV Oral No fluid	ADH	NSD (↓ADH fell (although ADH ↓ to a greater extent [not significant] following oral rehydration over either isotonic or hypotonic IV in first 15 min despite a lower % ΔPV. May be due to stimulation of oropharyngeal reflex)
		Aldosterone	NSD (although Δ aldosterone tended to fall less [↑ aldosterone] in oral compared with either isotonic or hypotonic IV)
Schoeguray et al.[21]	Isotonic IV Hypotonic IV No fluid	Noradrenaline	NSD between IV trials
		Adrenaline	NSD between IV trials
Kovacick et al.[24]	Isotonic IV Hypotonic IV Oral No fluid	ADH	NSD between any treatments
		Aldosterone	NSD between any treatments

% ΔPV = percentage change in plasma volume; **ACTH** = adrenocorticotropic hormone; **ADH** = antidiuretic hormone (arginine vasopressin); **hypotonic IV** = 0.45% NaCl; **isotonic IV** = 0.9% NaCl; **NaCl** = sodium chloride; **NSD** = no significant difference between treatments; **oral** = oral fluid (0.45% NaCl); ↑ indicates increased; ↓ indicates decreased; Δ indicates change.

Description: -
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Intravenous versus Oral Rehydration during a Brief Period: Stress Hormone Responses to Subsequent Exhaustive Exercise in the Heat in: International Journal of Sport Nutrition and Exercise Metabolism Volume 10 Issue 4 (2000)

METHODS We used a randomized, crossover, controlled comparison. Varying responses were identified with previous IV versus OR REHY comparisons.

Could Kool Aid be Better Than IV Rehydration in Dehydrated Athletes?

The thermophysiology of exercising in a hot climate. Limitations to fluid replacement during exercise.

Intravenous versus oral rehydration during a brief period: responses to subsequent exercise in the heat

Casa, Elaine Lee, Linda Yamamoto, Kathleen Beasley, Holly Emmanuel, Jeffrey Anderson, Linda Pescatello, Lawrence E. After breakfast, participants had 20-gauge Teflon cannulas inserted into both arms at the antecubital veins that were kept patent with normal saline and heparin 9:1. Oral rehydration with an inexpensive homemade Kool Aid solution effectively rehydrates athletes, improves physiological parameters, and shows a trend to increase performance.

Could Kool Aid be Better Than IV Rehydration in Dehydrated Athletes?

Heat Stress Aoyagi Y, McLellan TM, Shephard RJ.

Intravenous fluids and their use in sport: A position statement from the Australian Institute of Sport

Role of dehydration in heat stress-induced variations in mental performance.

Heat Stress

For 30 minutes post-REHY, the participant was observed.

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