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The impact of a 17 km recreational walk on measures of body composition and hydration in a group of walkers aged >40 years

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Walking is practised by three times as many individuals (44.5%) as the next-most-popular activity swimming (15%) and about thirty-eight million adults claim to walk >3.2 km (2 miles) for pleasure at least once monthly⁽¹⁾. Walking appeals to both genders, young and old, is often very prolonged and can take place in severe weather. There are many health benefits claimed for regular walking but also risks, e.g. falls, hypothermia, dehydration⁽²⁾, especially in the young and elderly. Strenuous walks, especially in hot weather, may compromise water and electrolyte balance, but this outcome may depend on knowledge of risks and requirements and experience. Most studies are of young fit individuals under extreme conditions. The present pilot study aimed to determine whether a recreational walk posed a challenge to the water and electrolyte balance of older walkers.

The five male and eight female subjects (mean age 56 (SD 7.54) years) were a self-declared healthy and fit convenience sample of adults known to the authors. The walk was flat, along the river Mersey promenade, and three groups undertook the walk on different days at their own pace with self-determined stops. Intake was not controlled. All measurements were made in a laboratory before and after the walk.

	Baseline		Follow-up		Change		95% CI
	Mean	SD	Mean	SD	Mean	SD	
Height (m)	1.68	0.09					
Weight (kg)	71.2	10.5	70.8	10.5	-0.37	0.38	-0.14, -0.60
BMI (kg/m ²)	25.2	2.58	25.1	2.58	-0.10	0.12	-0.03, -0.17
Fat (%)	30.0	8.69	29.1	7.87	-0.90	1.40	-0.05, -1.75
Fat (kg)	20.9	5.70	20.3	5.28	-0.67	0.99	-0.07, -1.27
Lean (%)	70.1	8.69	71.0	7.87	0.90	1.40	1.75, 0.05
Lean (kg)	50.3	11.6	50.6	10.9	0.37	1.01	0.98, -0.24
Water (%)	53.8	5.58	54.7	5.05	0.85	1.32	1.65, 0.06
Water (l)	38.4	7.58	38.8	7.02	0.38	0.92	0.93, -0.18
Bioimpedance (Ω)	528	77.6	515	67.5	-13.5	24.3	1.20, -28.1
Pulse (beats per min)	66.1	8.90	75.2	9.68	8.92	9.28	14.8, 3.02
Systolic BP (mmHg)	124	17.2	119	13.4	-4.92	14.0	3.53, -13.4
Diastolic BP (mmHg)	85.4	14.2	83.0	13.3	-1.92	12.0	5.31, -9.16
Blood glucose (mmol/l)	6.24	0.81	5.84	0.89	-0.37	1.17	0.38, -1.11
Hb (g/l)	126	14.2	128	13.0	2.0	15.1	11.1, -7.1
PCV (%)	43.3	3.51	41.1	2.72	-2.38	2.75	-0.54, -4.23
Urine specific gravity (g/ml)	1.01	0.006	1.02	0.007	0.005	0.006	0.008, 0.001
Urine Na (mmol/l)	81.5	36.0	91.2	34.9	9.69	24.0	24.2, -4.82
Urine K (mmol/l)	51.6	23.1	94.7	35.3	43.1	31.1	61.9, 24.3
Urine Na:K	1.71	0.70	1.06	0.43	-0.64	0.62	-0.27, -1.02
Reaction test (s)	0.26	0.13	0.26	0.09	0.003	0.14	0.09, -0.08
Fluid available (kg)	1.10	0.53	0.28	0.37	-0.81	0.52	-0.50, -1.13

BP, blood pressure; PCV, packed cell volume.

This group of fit experienced walkers lost a significant amount of weight despite intake of fluid (and food). The estimates of change in body composition based on bioimpedance seem to be unreliable. PCV fell and Hb concentration was unchanged but changes in urine indicated that hypohydration occurred. Reaction time was unaffected. Hypohydration is a likely consequence of even modest recreational walks in experienced walkers in non-extreme weather.

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1. Ramblers' Association (2005) Walking is Britain's most popular outdoor activity. www.ramblers.org.uk (accessed November 2005).
2. Yorimoto A, Nishikawa N & Sakate S (2006) *Jpn J Phys Fitness Sports Med* 55, 75–79.