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Fruit and vegetable intake of a British Army Battalion deployed to Afghanistan – preliminary findings

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Understanding the nutritional demands placed on serving military personnel is critical to inform training and food provision. Soldiers deployed to Afghanistan face austere living and working environments. It has been purported that deployment can result in detrimental changes to dietary intake,[(1)] body composition[(2)] and subsequent health. A diet that is insufficient in fruit and vegetables (F&V) reflects poor dietary quality and has been shown to result in higher estimates of net endogenous acid production (NEAP),[(3)] which may result in negative effects on musculoskeletal health[(4,5)] and increased risk of chronic disease.[(6)]

F&V intakes of soldiers (*n* 20) from a British Army battalion were assessed pre and during a deployment to Afghanistan, and examined relative to NEAP estimates and changes in body composition. Dietary intakes were recorded using 4-day food diaries, from which F&V intakes were calculated using standard portion sizes. NEAP estimates were determined from protein and potassium intakes. Body composition changes were assessed from skinfold measurements, and Body Mass Index (BMI) was calculated from body mass and height measurements. Differences between pre and during deployment measures were assessed by Wilcoxon matched pairs tests.

Soldiers' intakes of F&V were below the recommended five portions per day[(7)] ($P<0.001$) and below the national average intake in the UK.[(8)] Intakes did not differ between pre and during deployment (Table 1). Estimated dietary NEAP was higher during deployment than pre-deployment ($P<0.001$). This was associated with a decrease in potassium intake ($P<0.001$) rather than a change in protein consumption. No associations were evident between F&V intakes and dietary acid load pre or during deployment. These dietary behaviours were evident in the face of decreases ($P<0.001$) in body mass, BMI and skinfold thickness between pre and during deployment, but static lift strength improved ($P<0.01$).

Table 1. Comparison between fruit and vegetable intakes before and during deployment

	n	Mean	SD	Median	IQR	*P*
Pre deployment (portions.day^{-1})	20	2.88	1.89	3.13	2.99	0.50
During deployment (portions.day^{-1})	20	3.04	1.71	2.92	3.17	

F&V intake of deploying soldiers was less than current Government guidelines.[(7)] Estimated NEAP increased and physical status decreased during deployment compared with pre-deployment; ongoing research is evaluating the physiological significance of these findings in a larger study sample. Ministry of Defence nutritional education initiatives are promoting improvements in dietary intake of personnel to support both operational capability, and longer term health.

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