

Validation of a bespoke food record card as a method of recording dietary intake in Royal Marine recruits

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The high-tempo environment of Royal Marine (RM) recruit training is such that standard methods of dietary assessment are inappropriate. A novel approach is required that is: (1) quick and simple to complete; (2) reflects available food choices at main meals; (3) reliably records actual food intake.

A food record card (FRC) was designed for each of the four main meals taken by RM recruits in 24 h. The FRC requires recruits to identify the number of standard servings of each food item constituting their meal, how much was leftover and any snacks consumed between meals. The mean mass of a serving (e.g. serving spoonful, ladle, scoop or tongs) was estimated from a combination of weighing recruits' plates after each food was added at the servery and by the double-plating method. Twenty-five injured recruits double-plated meals for 24 h and completed an FRC at each main meal. The utility of the FRC was assessed via a questionnaire.

Macronutrient intakes determined by weighed food intake and FRC, shown in the Table, were not significantly different. Portion sizes estimated from the FRC correlated with actual portion sizes by the double-plating method (r 0.87, $P < 0.05$). The FRC method over-estimated actual energy intake by approximately 5% but the proportions of macronutrients (expressed as % energy) were similar between the two methods. Recruits reported that the FRC was easy and quick to complete. The portion sizes of RM recruits were not consistent with standard portion sizes⁽¹⁾ (either greater or less than the standard, depending on food type).

	Energy (MJ)		CHO (% energy)		Fat (% energy)		Protein (% energy)		Vitamin C (mg)		Ca (mg)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Weighed food intake	14.6	3.0	49.1	6.1	34.5	6.0	15.5	3.9	205	137	1211	434
FRC	15.2	3.4	48.4	5.5	35.2	5.1	15.6	3.7	221	139	1261	460

CHO, carbohydrate.

The overestimation of energy intake was a result of under-reporting of leftovers and small discrepancies between actual and estimated serving sizes. The utility of the FRC was suitable for use with RM recruits in a busy military training establishment but a clear brief is required before administration of the FRC in order to emphasise the importance of accurate recording of food descriptions, quantity of food plated and the nature and extent of leftovers. The discrepancies between portion sizes highlight the importance of tailoring a dietary assessment tool to the specific population.

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1. Food Standards Agency (2002) *Food Portion Sizes*, 3rd ed. London: The Stationery Office.