

Over- and undernutrition: challenges and approaches. 29 June–2 July 2009

Macro and micro-nutrient intakes of Royal Marine recruits during 32 weeks of military training

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Royal Marine (RM) recruit training is widely acknowledged to be one of the most physically arduous military programmes. Young men (16–33 years) undergo 32 weeks of intense training, with energy requirements estimated to be 17.6 MJ (4200 kcal)/d⁽¹⁾. Adequate nutrition may play an important role in reducing illness and injury, thus contributing to a successful training outcome.

RM recruits commencing training at the Commando Training Centre Royal Marines, Lympstone, Devon, UK were given an initial study brief, after which 545 recruits from eleven troops consented to participate. Dietary intake was recorded using the food record card (FRC)⁽²⁾ over 4 d (including one weekend day) at the start, middle and end of training.

Macro- and micronutrient intakes are shown in the Table. The energy intake of recruits at the start and middle of training was consistent with the estimated energy requirements of RM training⁽¹⁾. However, the mean energy intake at the end of training was 21% less than the intake earlier in training ($P < 0.05$). The mean percentage energy from CHO was consistently lower than that recommended for physically-active individuals. Mean Fe, Ca and vitamin C intakes of recruits were above the reference nutrient intakes⁽³⁾ but consistent with values for young men routinely involved in strenuous physical training.

Stage of training	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
Start (n 528)	16.8	3.6	43.6	4.5	39.8	3.8	15.7	1.9	101	42.6	1276	370
Middle (n 308)	16.8	4.1	45.3	4.9	39.0	4.5	15.1	2.1	104	52.8	1439	497
End (n 198)	13.9*	3.2	44.8	8.6	37.7	7.5	14.6	3.2	93.3	55.9	1111	431

CHO, carbohydrate. Mean value was significantly lower the required intake: * $P < 0.05$.

The final week of RM training is deemed to be less physically demanding as recruits have passed the Commando Tests and have earned the coveted 'green beret'. However, the recruits' working day continues to be long, combined with the need to recover from the Commando Tests, such that nutritional requirements will remain high. Food provision to recruits has not changed, which suggests that improved education may be required to encourage recruits to maintain their volitional dietary intake to better support this phase of training.

The authors would like to thank colleagues at the Commando Training Centre Royal Marines, Lympstone, Devon for their support and assistance.

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