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## An investigation into food provision and consumption in a care home setting in the UK

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In the UK, the ‘risk of’ malnutrition in individuals admitted to care homes is reported to be 42%<sup>(1)</sup>. It is recognised that food and fluid provision have a central role to play in the management of malnutrition within institutions. Nutrient and food-based guidance for food provision in care homes in the UK<sup>(2)</sup> has been published to assist care homes meet care standards<sup>(3,4)</sup>. The aim of this study was to evaluate food provision and consumption in a care home setting and determine the role different eating occasions play in energy and nutrient intakes in this setting.

Three-day weighed plate-wastage method was used to assess food provision and consumption for a sample of residents in a private *n* 130 bed care home in the East of Scotland. A bulk-food service was in operation. Three main meals and three snacks were provided daily with midday and evening meals consisting of two courses. All foods provided over a 3-d period were weighed prior to being served and any left-over items were weighed after the resident had finished eating. Snacks and drinks consumed were observed and recorded. Estimated intakes were converted to energy and nutrient intakes using WinDiets dietary analysis software and these were compared against standards for food provision in care homes in the UK<sup>(2)</sup> using one-sample *t*-test. Consumption figures were determined for each eating occasion as a proportion of food provided.

Food provision and consumption were assessed for 25 residents (>65 years; 3 male, 22 female).

Meal	FSA guidance (%) <sup>(4)</sup>	Provision			Consumption			
		Mean (SEM) energy	Mean (SEM) protein (g)	% Contribution to total energy provision	Mean (SEM) energy	Mean (SEM) protein (g)	% Contribution to total energy consumption	% of energy provision
Breakfast	20	1895.35 (179.91) kJ (453(43) kcal)	13(1.7)	22.6	1640.13 (179.91) kJ (392(43) kcal)	11(1.6)	24.0	86(4)
Midday	30	2280.28 (158.99) kJ (545(38) kcal)	21(1.5)	27.2	1694.52 (179.91) kJ (405(43) kcal)	16(1.8)	24.8	75(5)
Evening	30	2564.79 (104.6) kJ (613(25) kcal)	27(1.9)	30.6	1924.64 (112.97) kJ (460(27) kcal)	20(1.8)	28.1	77(5)
Snacks	20	1631.76 (117.15) kJ (390(28) kcal)	9(0.7)	19.5	1577.37 (121.34) kJ (377(29) kcal)	8(0.7)	23.1	96(2)
Totals		8372.18 (246.86) kJ (2001(59) kcal)	70(3.2)		6836.66 (301.25) kJ (1634(72) kcal)	55.4(3.4)		82(3)

Food provided within the care home is meeting recommendations for the provision of energy (mean difference 192.46 kJ/d (+46 kcal/d)) and protein (mean difference +20 g/d)<sup>(4)</sup>. The amounts provided at each eating occasion are in line with recommended proportions<sup>(4)</sup>. However, not all food provided is consumed, and thus there is the potential that individual residents’ nutrient requirements are not being met. More than 95% of snacks provided are consumed and these food items are providing almost one-quarter of total energy intakes which is comparable to the contribution from breakfast and the midday meal. However, snacks only provide 15% of total protein intakes in contrast with 29% from the midday meal, 36% from the evening meal.

Reconsideration of conventional food provision (i.e. three main meals with three small snacks) to more frequent, smaller ‘meals’ with higher protein content may help to maximise food and nutrient intakes, reduce plate-wastage costs and may also reduce deterioration in nutritional status.

1. Russell CA & Elia M (2009) Nutrition Screening Survey in the UK in 2008. Hospitals, care homes and mental health units. BAPEN.
2. Food Standard Agency (2007) Guidance on food served to older people in residential care.
3. Care Commission (2007) National Care Standards for care homes for older people in Scotland.
4. Department of Health (2000) *Care Homes for Older People: National Minimum Standards Care Homes Regulations*, 3rd ed.