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Dietary intakes of geriatric patients in hospital. By ELIZABETH EVANS and ANNE L. STOCK, *Queen Elizabeth College, University of London, London, W8*

The provision of adequate diets for elderly patients living in institutions demands special attention, since the well-documented problems of large-scale catering (Platt, Eddy & Pellett, 1963) are combined with the attendant problems of old age which range from mechanical difficulties of feeding to anorexia.

Individual weighed food intakes have been obtained over an 8-day period, from fourteen men (age range 63-91 years) and twenty-five women (age range 61–94 years) all of whom were resident in three geriatric wards in an Essex hospital. Nutrient intakes have been computed using McCance & Widdowson (1960) food composition tables and are shown in the table.

Table 1. *Mean daily nutrient intakes per head in three geriatric wards in the same hospital*

	Rehabilitation ward	Medical ward	Long-stay ward
Calories (kcal)	1320	1410	1560
Protein (g)	41	49	61
NDpCal%	8·5	9·3	9·9
Fat (g)	49	55	67
Iron (mg)	5·3	8·1	8·5
Calcium (mg)	790	750	880
Vitamin B_1 (mg/1000 kcal)	0·40	0·37	0·45
Vitamin B_2 (mg/1000 kcal)	0·82	0·71	0·78
Nicotinic acid (mg/1000 kcal)	3·04	3·44	4·94
Vitamin A (i.u.)	1310	1760	3500
Vitamin D (i.u.)	26	48	112
Vitamin C (mg)*	27 (7)	30 (7)	40 (9)
Number	16	14	9
Mean age (years)	80	78	77
Daytime activity	Sitting in day-room	Mostly lying in bed; some active	Occasionally sitting in chairs

* Values in parentheses obtained by chemical analysis of food samples.

Calorie intakes were low compared with those obtained by Brown (1968) and were lowest for patients with the highest energy requirements as judged by activity. Protein intakes *per se* were adequate (Berry, 1968) and protein quality expressed as net dietary protein calories % was similar to that found in other hospitals (Pellett & Eddy, 1964). However maximum protein utilization may have been limited by calorie restriction (Miller & Payne, 1961). Fat-soluble vitamin intakes were generally low; vitamin A intake was correlated with total protein intake ($r=0{\cdot}78$, $P<0{\cdot}00001$) and

with vegetable consumption ($r=0{\cdot}5$, $P=0{\cdot}0013$). Low consumption of fortified cereals accounted for poor intakes of iron and nicotinic acid, while consumption of 400 ml milk per head per day was largely responsible for satisfactory riboflavine and calcium intakes.

Contrary to expectation, the long-term chronically ill patients who required the most nursing care and help with feeding had the highest nutrient intakes. Patients who were capable and therefore allowed to feed themselves made the poorest choice of food and consumed the least.

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The effect of altitude on thermogenesis in man. By D. S. MILLER and M. J. STOCK, *Department of Nutrition, Queen Elizabeth College, London, W8*

An early report by Giaja (1938) suggests that specific dynamic action (i.e. the thermic effect of feeding) is considerably reduced in rats exposed to low barometric pressures. During a recent expedition to Ethiopia the opportunity arose to investigate the effect of low barometric pressure on the thermic response to meals both in men normally resident at sea-level and in those native to high altitude.

The thermic responses were measured in exercising subjects by an experimental design previously described (Miller, Mumford & Stock, 1967). Energy expenditures on this occasion were measured with the Max Planck respirometer (Müller & Franz, 1952). The difference between the energy cost of a simple task (twelve steps of 9 in./min for 30 min) measured before and after an 800 kcal breakfast (Mueseli and instant milk) was estimated. Young males (age range 15–27 years) from two villages in the Simien region of Ethiopia were used for the tests. One village (Debarec) was at an altitude of *ca.* 10000 ft, whilst the other (Adai Arkai) was below the Simien Escarpment at *ca.* 5000 ft. Ten subjects were studied in Debarec and six in Adai Arkai. In addition, the same measurements were made on the five European male members of the expedition at both villages and in London. Some duplicate determinations were made when time permitted and have been included in the summary of results shown in the table.