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Nutrient intake of South Asian children compared with UK recommendation

F. Ashkanani¹ and S. Khokhar¹

¹School of Food Science and Nutrition, University of Leeds, Leeds, LS2 9JT, UK

South Asians represent the largest ethnic minority group in the UK and have been reported to have greater risk of chronic diseases compared with Caucasians⁽¹⁾. South Asians also experience the double burden of malnutrition, and also presenting deficiencies as well as over-nutrition⁽²⁾. Because early nutrition is one of major determinant of health and well being in later years thus, the purpose of this study was to assess the nutritional adequacy of South Asian children's diets compared with UK dietary recommendation.

A cross sectional study of South Asian children ($n = 150$, 65 boys and 85 girls) aged 4 to 11 years ($7.18 \text{ yrs} \pm 1.87 \text{ SD}$) was conducted. Parents/guardians completed three multiple pass 24-hour recalls on non-consecutive days including one weekend. Food portion sizes were estimated using household measurements and a newly developed South Asian Photographic Booklet. Nutrient contents were calculated using COMP-EAT software and UK's South Asian food composition data⁽³⁾. The study was approved by the Ethics Committee of University of Leeds, UK.

A total of 450 24-hour recalls interviews were conducted. Mean energy intake for children were 1624 kcal per day and the intake of energy for boys and girls was close to estimated average requirements (EAR). Total fat provided 34.7% of contributed energy intake but the energy intake from saturated fat 12.1% exceeded the recommendation in all age groups. The average protein intake was well above the Reference Nutrient Intake (RNI). The average intakes of most vitamins and minerals, except for zinc in girls, were well above the RNIs. However, 5% of children had Zinc below the Lower Reference Nutrient Intake (LRNI), 12% and 3% of children aged 7 to 10 years had vitamin A and Selenium below LRNI, respectively. Furthermore, Girls in this age group had 2% and 9% of Riboflavin and Iodine below LRNI, respectively. Mean intakes of vitamin D in all age groups were considerably low 1.7 $\mu\text{g/day}$ compared with WHO recommendation of 5 $\mu\text{g/day}$ ⁽⁴⁾.

Gender	Boys		Girls		Gender	Boys		Girls	
	4–6%RNI	7–10%RNI	4–6%RNI	7–10%RNI		Age in years	4–6%RNI	7–10%RNI	4–6%RNI
Vitamins					Minerals				
Thiamin	149	166	149	166	Calcium	213	198	207	185
Riboflavin	215	192	214	192	Magnesium	182	161	176	145
Niacin	186	194	186	196	Sodium	243	229	246	209
Vitamin B ₆	163	153	150	155	Potassium	212	182	205	163
Vitamin B ₁₂	564	525	540	500	Iron	143	138	142	132
Folate	181	161	172	152	Zinc	103	100	99	98
Vitamin C	238	238	237	238	Copper	144	140	142	139
Vitamin A	125	113	123	114	Selenium	149	138	151	125
Vitamin D*	36	36	36	36	Iodine	192	173	182	161

*WHO recommended nutrient intake⁽⁴⁾.

It is concluded that energy intake of South Asian children was close to UK's EAR. Whereas, vitamins and minerals exceeded UK's RNIs and were similar to intakes reported in the National Diet and Nutrition Survey⁽⁵⁾. It is also recommended that longitudinal studies are needed to establish ethnic-specific requirements for these groups.

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