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Energy and nutrient intake, and number of steps taken per day according to body mass index of girls aged 8–11 years in Saudi Arabia

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Obesity is a serious health problem in Saudi Arabia. Over 30 % of female adults and about 30 % of children are either overweight or obese⁽¹⁾. Excessive food intake and lack of activity contribute to the high incidence of obesity amongst Saudi children^(2, 3), but little is known about the diet quality and amount of activity undertaken by girls. Therefore the aim of this study was to characterise the dietary intake and amount of activity undertaken in girls aged 8–11 years old according to body mass index.

Girls (n = 234) participated from different schools (private n = 4 and public n = 3). Height and weight were measured and BMI was calculated. Girls were classified as obese, overweight, healthy weight and underweight according to BMI centile charts (CDC). Dietary intake was measured via a 4 day food diary and number of steps/d was measured using either a pedometer or an accelerometer (WGT3X-BT Actigraph, Fort Walton, Florida). Dietary data was analysed using Arab Food Analysis Programme 1st version 2007 analysis package. Data were statistically analysed using ANOVA on SPSS version 21.

There was a significant difference in energy and nutrient intake between BMI categories (Table). Also obese girls had greater sugary drink consumption (124.2 ml/d) and savoury snack intake (37 g/d) compared to underweight girls (64.4 ml/d) (1.5 g/d) with (P = .003) (P = .012) respectively. In contrast, the number of steps/d did not differ between the BMI categories, although girls from public schools had a higher number of steps daily than those from private schools 7416, 6518 steps/d respectively (P = 0.039). Even though participants from public schools recorded a higher number of steps/d, the amount was substantially less than 10,000–12,000 steps/d, which is the daily recommended level number of steps for children⁽⁴⁾. Moreover, there was a significant difference in the energy intake between girls from private and public schools 2183, 1583 kcal/d respectively (p < 0.001).

	Under weight		Healthy weight		Over weight		Obese		P value
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Energy kcal	1412	291	1806	403	2489	887	2677	804	.000
Protein (g/d)	52.9	19	66.3	24	79.1	39	87.8	35	.002
Fat (g/d)	50.5	11	68.8	24.3	104.5	39	108.2	44	.000
CHO (g/d)	199.2	42.4	236.5	62.3	347.4	109.9	362	93	.000
Fruit (g/d)	28.9	39.5	35.2	43.5	29.5	54.8	32.9	72.7	.977
Veg (g/d)	18.3	22	52.3	44.4	105	114.7	84.3	73.8	.002
Sweets (g/d)	59.2	37.5	98.5	53.4	129.9	67.4	147.7	97.7	.001
Sugary drink (ml/d)	64.4	40.6	84.6	51	104.4	70.4	124.2	52.2	.003
Savoury Snacks (g/d)	1.5	3.5	20	24.5	22.7	3.6	37	44	.012
steps	6406	2805.7	6773	1788	6097	2324.5	5969	1786.6	.460

Energy and macronutrient intake increased with increasing BMI, but no relationship was found between the daily number of steps and BMI.

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