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The contribution of food groups to energy and nutrient intakes in children aged 1–3 years attending a childcare centre in Dublin

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Diet in the early years is an important modifiable factor to ensure that children receive the right balance of foods and nutrients to support healthy growth and development⁽¹⁾.

The main aim of this study was to investigate the contribution of food groups to the energy and macronutrient intakes of 40 healthy pre-school children aged 1–3 years and then examine energy and nutrient intakes across tertiles of whole cows’ milk intake. Parents/guardians provided written consent for their child to take part in the study. Food and beverage intake was recorded by parents/guardians/staff as appropriate, using a 3-day food diary. Dietary intake data was analysed using Dietplan 6 (Forestfield Software Ltd, UK)⁽²⁾.

(n = 40)	Percentage contribution of the top 3 food groups to energy and macronutrient intake
Energy	Whole cows’ milk (18%), Meat, meat dishes & products (13%), Breakfast cereals (10%)
Protein	Meat, meat dishes & products (28%), Whole cows’ milk (22%), Breakfast cereals (7%)
Total Fat	Whole cows’ milk (28%), Meat, meat dishes & products (16%), Cheese (7%)
Saturated Fat	Whole cows’ milk (37%), Meat, meat dishes & products (14%), Cheese (9%)
Carbohydrate	Fruit & fruit juices (19%), Rice & pasta (15%), Whole cows’ milk (13%)

This study found that whole cows’ milk is one of the main contributors to energy and macronutrient intakes, in particular saturated fat intake (37%). Furthermore, increasing consumption of whole cows’ milk can negatively contribute towards displacing the intake of key nutrients in the toddler diet. Further analysis of a small sub-group who also consumed a toddler specific fortified milk, showed a trend towards more favourable intakes of key nutrients.

	Intake of whole cows’ milk (consumers, n = 38)						Toddler milk (consumers, n = 10)	
	Low		Medium		High		Mean	SD
	Mean	SD	Mean	SD	Mean	SD		
Total intake: 3 days (ml)	418.8	198.6	970.2	125.6	1577.8	464	607.0	292.4
Energy and Macronutrients	1087.1	153.5	1237.1	225.3	1231	308.7	1239.2	170.4
Energy (kcal)								
Protein (g)	43.4	5.8	48.1	7.2	49.3	9.7	49.4	6.3
Fat (% Energy)	30.8	3.8	35.3	6.1	35.8	4.6	32.4	3.9
Saturated Fat (% Energy)	14.3	2.2	15.9	2.5	17.9	1.8	14.0	2.6
Carbohydrate (% Energy)	50.9	3.4	45	7.2	45.5	6.1	49.0	3.1
Micronutrients[^]								
Sodium (mg)	1144.3	249.1	1254	256.9	1338.4	468.3	1205.9	287.4
Calcium (mg)	767.9	218.7	846.2	240.3	944.5	232.4	941.7	270.8
Iron (mg)	8.4	2.3	8.6	3.6	7.8	3.5	10.9	2.7
Vitamin D (ug)	4.5	3.9	2.1	1.7	1.8	2	6.5	4.2
Vitamin C (mg)	72.9	33.5	59.6	24.8	57.7	30.6	105.4	33.8

[^]All sources including dietary supplements.

Identifying the underlying factors associated with energy and nutrient intake patterns in the diets of toddlers aged 1–3 years, is vital for the development of effective food-based treatment and prevention strategies.

1. Department of Health and Children. Food and Nutritional Guidelines for Pre-school Services. Dublin: Health Promotion Unit, 2004. Available from: www.dohc.ie.
2. Food Standards Agency. McCance and Widdowson’s The Composition of Foods, 6th Edition. Cambridge: Royal Society of Chemistry, 2002.