

Figure, Supplemental Digital Content 1. Flow chart of participants

Supplementary Material

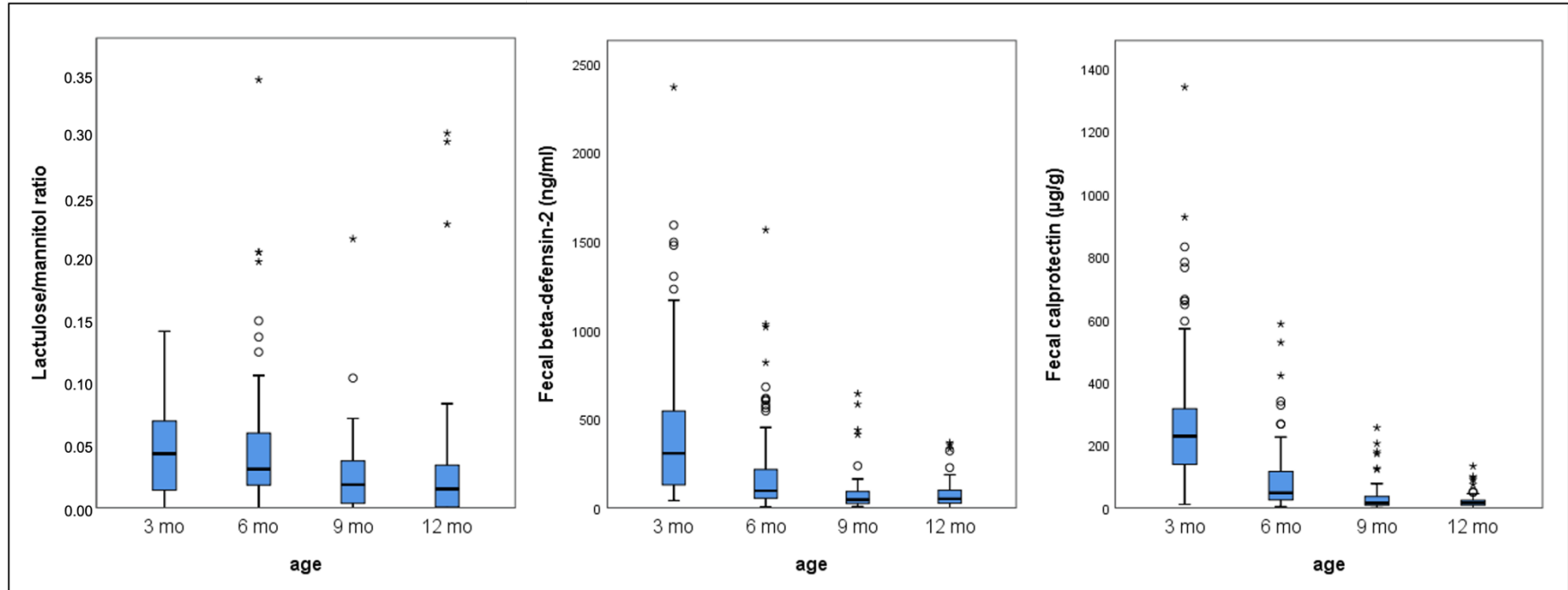
Infant feeding, gut permeability, and gut inflammation markers. Koivusaari K, Niinistö S, Nevalainen J, Honkanen J, Ruohtula T, Koreasalo M, Ahonen S, Åkerlund M, Tapanainen H, Siljander H, Miettinen ME, Alatossava T, Ilonen J, Vaarala O, Knip M, Virtanen SM. *Journal of Pediatric Gastroenterology and Nutrition*

Table, Supplemental Digital Content 2. Characteristics of the study participants.

	n	Percentage of total
Total n	73	100.0
Sex		
Male	35	47.9
Female	38	52.1
Delivery route		
Vaginal	66	90.4
Cesarean section	7	9.6
Maternal BMI		
Under- or normal weight	39	53.4
Overweight or obese	30	41.1
Missing	4	5.5
Antibiotics		
before the age of 3 months	3	4.1
at the age of 3–5.9 months	7	9.6
at the age of 6–8.9 months	15	20.5
at the age of 9–11.9 months	22	30.1
Gastroenteritis		
before the age of 3 months	0	0.0
at the age of 3–5.9 months	3	4.1
at the age of 6–8.9 months	3	4.1
at the age of 9–11.9 months	11	15.1

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Figure, Supplemental Digital Content 3. Gut permeability (lactulose/mannitol ratio) and gut inflammation marker (fecal beta defensin-2 and fecal calprotectin) concentrations at the age of 3, 6, 9, and 12 months.

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Table, Supplemental Digital Content 4. The association between the intake of foods and intestinal permeability (lactulose/mannitol ratio), and human betadefensin-2 and calprotectin concentrations during the first year of life. The unstandardized beta coefficients, 95% confidence intervals (CI), and P-values are presented based on the main effects model. Another P-value is given for the age*food interaction (IA), based on the interaction model. The outcome variables were transformed into logarithmic scale.

	Permeability			Human betadefensin-2			Calprotectin		
	Unstandardized beta coefficient (95% CI)	P for overall	P IA	Unstandardized beta coefficient (95% CI)	P for overall	P IA	Unstandardized beta coefficient (95% CI)	P for overall	P IA
Breast milk									
Lowest group	Reference			Reference			Reference		
Middle group	0.069 (0.005, 0.132)	.097	.904	0.188 (-0.106, 0.482)	.139	.018	0.231 (-0.097, 0.523)	<.001	.012
Highest group	0.057 (-0.017, 0.131)			0.394 (0.005, 0.782)			0.604 (0.337, 0.871)		
Extensively hydrolyzed infant formula									
Lowest group	Reference			Reference			Reference		
Middle group	-0.062 (-0.199, 0.076)	.003	.089	0.245 (-0.150, 0.640)	.074	<.001	0.040 (-0.463, 0.543)	.878	.162
Highest group	-0.140 (-0.223, -0.056)			-0.165 (-0.476, 0.146)			0.096 (-0.276, 0.467)		
Conventional infant formula									
Lowest group	Reference			Reference			Reference		
Middle group	-0.073 (-0.158, 0.012)	.246	.109	-0.251 (-0.696, 0.194)	.543	.022	-0.307 (-0.701, 0.086)	.072	.500
Highest group	-0.035 (-0.117, 0.046)			-0.060 (-0.376, 0.256)			-0.406 (-0.820, 0.008)		
Meat									
Lowest group	Reference			Reference			Reference		
Middle group	-0.045 (-0.130, 0.040)	.037	.023	-0.131 (-0.454, 0.193)	.287	.571	0.220 (-0.168, 0.608)	.455	.694
Highest group	-0.083 (-0.151, -0.015)			-0.302 (-0.680, 0.076)			0.232 (-0.149, 0.613)		
Vegetables									
Lowest group	Reference			Reference			Reference		

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	Middle group	-0.052 (-0.149, 0.045)	.041	.002	-0.369 (-0.633, -0.104)	<.001	.029	-0.559 (-0.860, -0.258)	<.001	<.001
	Highest group	-0.101 (-0.183, -0.018)			-0.636 (-0.948, -0.324)			-0.723 (-1.077, -0.369)		
Fruits and juices										
	Lowest group	Reference			Reference			Reference		
	Middle group	-0.070 (-0.140, 0.000)	.001	.265	-0.565 (-0.834, -0.296)	<.001	.329	-0.364 (-0.622, -0.105)	<.001	.408
	Highest group	-0.130 (-0.199, -0.061)			-0.899 (-1.308, -0.490)			-1.032 (-1.368, -0.697)		
Potatoes										
	Lowest group	Reference			Reference			Reference		
	Middle group	-0.011 (-0.107, 0.084)	.317	<.001	-0.017 (-0.369, 0.336)	.597	.550	-0.123 (-0.468, 0.221)	.007	<.001
	Highest group	-0.060 (-0.143, 0.024)			-0.163 (-0.526, 0.200)			-0.479 (-0.825, -0.132)		
Gluten-containing cereals¹										
	Lowest group	Reference			Reference			Reference		
	Middle group	-0.021 (-0.089, 0.048)	.814	.576	-0.034 (-0.407, 0.338)	.252	<.001	0.363 (-0.005, 0.731)	.092	.313
	Highest group	0.002 (-0.080, 0.084)			-0.281 (-0.662, 0.099)			0.056 (-0.278, 0.390)		
Oat										
	Lowest group	Reference			Reference			Reference		
	Middle group	-0.052 (-0.131, 0.028)	.289	.398	-0.469 (-0.746, -0.191)	.003	.354	-0.117 (-0.449, 0.214)	.253	.863
	Highest group	-0.068 (-0.154, 0.018)			-0.480 (-0.906, -0.055)			-0.275 (-0.600, 0.050)		

¹wheat, rye, barley