

# Title: Association between diet and fecal microbiota along the first year of life

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**Supplementary Table 1**

Target	Primers sequence (5' – 3')	T (°C)	Reference
<i>Bacteroides</i> group	F: GAGAGGAAGGTCCCCAC R: CGCKACTTGGCTGGTTCAG	60	(Arboleya et al., 2012)
<i>Bifidobacterium</i>	F: GATTCTGGCTCAGGATGAACGC R: CTGATAGGACGCGACCCCAT	60	(Arboleya et al., 2012)
Enterobacteriaceae	F- CATTGACGTTACCCGCGAGAAGAAGC R-CTCTACGAGACTCAAGCTTGC	63	(Bartosch, Fite, Macfarlane, & McMurdo, 2004)
<i>Clostridia</i> cluster IV	F: TTAACACAATAAGTWATCCACCTGG R: ACCTTCCTCCGTTTTGTCAAC	60	(Arboleya et al., 2012)

**Supplementary Table 2**

		Acetate								Propionate							
		15 days N = 79		90 days N = 83		180 days N = 78		365 days N = 68		15 days N = 79		90 days N = 83		180 days N = 78		365 days N = 68	
		N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD
Gender	Male	48	46.19 ± 27.53	48	62.54 ± 28.30	44	76.34 ± 33.46	41	76.50 ± 29.80	48	7.25 ± 8.54*	48	8.87 ± 6.86	44	15.32 ± 12.22	41	20.63 ± 13.03
	Female	31	36.56 ± 19.44	35	66.91 ± 35.83	34	76.28 ± 33.39	27	76.93 ± 28.41	31	2.71 ± 3.40	35	6.96 ± 6.40	34	12.23 ± 9.62	27	15.78 ± 9.69
Delivery	Vaginal	63	43.87 ± 25.21	65	61.93 ± 29.67	62	78.46 ± 33.67	54	76.28 ± 27.89	63	5.65 ± 7.67	65	8.02 ± 7.13	62	15.30 ± 11.92*	54	18.77 ± 11.93
	C-section	16	36.68 ± 24.03	18	73.25 ± 37.21	16	67.99 ± 30.95	14	78.18 ± 34.26	16	4.74 ± 5.80	18	8.22 ± 5.00	16	8.82 ± 5.48	14	18.44 ± 12.64
Type of feeding	BF	51	42.20 ± 27.80	41	49.97 ± 26.02*	29	65.46 ± 29.99*	16	82.02 ± 35.00	51	3.17 ± 5.32*	41	4.89 ± 5.53*	29	10.48 ± 9.61*	16	18.48 ± 15.09
	IF	28	42.81 ± 19.30	42	78.46 ± 30.34	49	82.74 ± 33.64	41	74.17 ± 28.25	28	9.66 ± 8.57	42	11.16 ± 6.33	49	16.04 ± 11.65	41	18.99 ± 11.61
	None <sup>a</sup>	0		0		0		11	78.23 ± 23.40	0		0		0		11	17.96 ± 8.98
Living area	Urban	30	43.56 ± 29.63	33	55.30 ± 30.61*	28	72.97 ± 29.04	22	78.09 ± 35.28	30	3.09 ± 4.76*	33	5.70 ± 5.20*	28	13.62 ± 11.19	22	19.74 ± 15.01
	Rural	49	41.71 ± 21.98	50	70.38 ± 31.02	50	78.19 ± 35.47	46	76.00 ± 25.95	49	6.93 ± 8.20	50	9.62 ± 7.15	50	14.17 ± 11.31	46	18.21 ± 10.39
Maternal pre-pregnancy BMI	Underweight (<18.5 kg/m <sup>2</sup> )	2	31.38 ± 8.08	2	34.91 ± 13.71	1	89.42	1	53.50	2	0.83 ± 0.39	2	0.87 ± 0.45	1	14.62	1	10.92
	Normal weight (18.5–24.9 kg/m <sup>2</sup> )	54	43.24 ± 25.04	55	64.25 ± 33.04	54	76.77 ± 33.92	44	78.51 ± 29.57	54	5.73 ± 7.51	55	8.25 ± 6.69	54	15.24 ± 12.63	44	17.25 ± 12.02
	Overweight (25.0-29.9 kg/m <sup>2</sup> )	17	44.97 ± 23.33	18	70.72 ± 31.67	15	77.93 ± 32.78	15	72.00 ± 31.26	17	4.98 ± 7.37	18	8.33 ± 7.32	15	11.55 ± 7.71	15	23.02 ± 11.54
	Obese (>30.0 kg/m <sup>2</sup> )	6	31.41 ± 33.47	8	58.41 ± 19.72	8	68.59 ± 34.27	8	78.25 ± 24.54	6	5.98 ± 7.13	8	8.01 ± 5.92	8	9.89 ± 2.93	8	19.61 ± 12.57
Antibiotics intrapartum	No	61	43.23 ± 25.85	64	63.70 ± 30.61	59	77.20 ± 31.76	52	75.67 ± 27.48	61	5.56 ± 7.57	64	8.16 ± 7.14	59	14.38 ± 12.04	52	18.65 ± 10.94
	Yes	18	39.63 ± 22.27	19	66.67 ± 35.35	19	73.58 ± 38.19	16	79.95 ± 34.44	18	5.17 ± 6.53	19	7.75 ± 5.09	19	12.70 ± 8.20	16	18.88 ± 15.32

Supplementary Table 2. Cont.

		Isobutyrate								Butyrate							
		15 days		90 days		180 days		365 days		15 days		90 days		180 days		365 days	
		N = 79		N = 83		N = 78		N = 68		N = 79		N = 83		N = 78		N = 68	
		N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD
Gender	Male	48	0.95 ± 0.20	48	1.13 ± 0.47*	44	1.51 ± 0.92	41	2.01 ± 1.12*	48	2.11 ± 2.72	48	3.39 ± 3.16	44	5.08 ± 3.89	41	14.08 ± 11.76
	Female	31	0.99 ± 0.33	35	1.04 ± 0.37	34	1.40 ± 0.86	27	1.41 ± 0.53	31	2.15 ± 3.66	35	2.26 ± 2.03	34	4.69 ± 4.12	27	10.98 ± 6.72
Delivery	Vaginal	63	0.95 ± 0.22	65	1.11 ± 0.47	62	1.47 ± 0.93	54	1.80 ± 1.05	63	1.74 ± 2.14	65	2.61 ± 2.66*	62	4.54 ± 3.71	54	13.09 ± 10.40
	C-section	16	1.00 ± 0.38	18	1.04 ± 0.19	16	1.43 ± 0.75	14	1.66 ± 0.63	16	3.66 ± 5.28	18	4.01 ± 3.01	16	6.37 ± 4.70	14	11.90 ± 9.28
Type of feeding	BF	51	0.97 ± 0.29	41	0.95 ± 0.22*	29	1.29 ± 0.79*	16	1.98 ± 1.34	51	1.63 ± 3.02*	41	1.82 ± 2.16*	29	3.66 ± 3.63*	16	13.75 ± 10.26
	IF	28	0.95 ± 0.18	42	1.24 ± 0.53	49	1.56 ± 0.94	41	1.72 ± 0.86	28	3.03 ± 3.10	42	3.98 ± 2.92	49	5.65 ± 4.01	41	12.09 ± 10.91
	None <sup>a</sup>	0		0		0		11	1.68 ± 0.78	0		0		0		11	14.37 ± 6.81
Living area	Urban	30	0.94 ± 0.19	33	0.99 ± 0.18*	28	1.22 ± 0.59*	22	1.77 ± 1.09	30	1.85 ± 3.62*	33	2.29 ± 2.78*	28	3.62 ± 2.99*	22	11.71 ± 9.26
	Rural	49	0.98 ± 0.29	50	1.17 ± 0.52	50	1.59 ± 1.01	46	1.78 ± 0.93	49	2.30 ± 2.76	50	3.32 ± 2.73	50	5.64 ± 4.28	46	13.39 ± 10.56
Maternal pre-pregnancy BMI	Underweight (<18.5 kg/m <sup>2</sup> )	2	0.68 ± 0.32	2	0.70 ± 0.35	1	1.85	1	0.91	2	0.70 ± 0.35	2	0.73 ± 0.39	1	3.12	1	9.62
	Normal weight (18.5–24.9 kg/m <sup>2</sup> )	54	0.95 ± 0.19	55	1.11 ± 0.46	54	1.37 ± 0.86	44	1.67 ± 0.98	54	1.90 ± 2.32	55	2.95 ± 3.02	54	4.80 ± 3.69	44	13.77 ± 10.95
Maternal pre-pregnancy BMI	Overweight (25.0-29.9 kg/m <sup>2</sup> )	17	1.05 ± 0.42	18	1.15 ± 0.40	15	1.41 ± 0.77	15	1.99 ± 0.99	17	3.39 ± 5.14	18	3.29 ± 2.32	15	5.53 ± 5.63	15	9.55 ± 4.54
	Obese (>30.0 kg/m <sup>2</sup> )	6	0.91 ± 0.00	8	0.97 ± 0.13	8	2.10 ± 1.19	8	2.02 ± 0.96	6	1.13 ± 0.51	8	2.33 ± 2.22	8	4.72 ± 2.26	8	14.38 ± 13.05
Antibiotics intrapartum	No	61	0.98 ± 0.29	64	1.12 ± 0.48	59	1.51 ± 0.86	52	1.84 ± 0.95	61	2.21 ± 3.32	64	2.96 ± 2.84	59	5.08 ± 4.05	52	12.05 ± 7.92
	Yes	18	0.91 ± 0.00	19	1.02 ± 0.17	19	1.32 ± 1.00	16	1.57 ± 1.06	18	1.85 ± 2.25	19	2.75 ± 2.64	19	4.40 ± 3.77	16	15.43 ± 15.33

Supplementary Table 2. Cont.

		Isovalerate								Valerate							
		15 days		90 days		180 days		365 days		15 days		90 days		180 days		365 days	
		N = 79		N = 83		N = 78		N = 68		N = 79		N = 83		N = 78		N = 68	
		N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD
Gender	Male	48	1.06 ± 0.58	48	1.35 ± 0.85	44	2.00 ± 1.62	41	2.68 ± 1.67*	48	0.89 ± 0.41	48	0.99 ± 0.66	44	1.20 ± 1.38	41	1.45 ± 1.50
	Female	31	1.23 ± 1.07	35	1.34 ± 0.94	34	1.66 ± 1.21	27	1.71 ± 0.90	31	0.85 ± 0.22	35	0.83 ± 0.17	34	0.98 ± 0.64	27	1.03 ± 0.50
Delivery	Vaginal	63	1.19 ± 0.89	65	1.36 ± 0.96	62	1.89 ± 1.51	54	2.36 ± 1.63	63	0.89 ± 0.39	65	0.96 ± 0.58	62	1.17 ± 1.25	54	1.33 ± 1.33
	C-section	16	0.86 ± 0.18	18	1.30 ± 0.56	16	1.72 ± 1.28	14	2.02 ± 0.68	16	0.81 ± 0.00	18	0.81 ± 0.00	16	0.83 ± 0.11	14	1.11 ± 0.65
Type of feeding	BF	51	1.19 ± 0.95	41	1.16 ± 0.73*	29	1.53 ± 1.03	16	2.55 ± 1.81	51	0.84 ± 0.21	41	0.84 ± 0.28*	29	1.02 ± 0.70	16	1.43 ± 1.73
	IF	28	1.01 ± 0.43	42	1.53 ± 0.98	49	2.04 ± 1.64	41	2.25 ± 1.47	28	0.93 ± 0.51	42	1.01 ± 0.67	49	1.15 ± 1.31	41	1.20 ± 1.09
	None <sup>a</sup>	0		0		0		11	2.06 ± 1.04	0		0		0		11	1.36 ± 0.78
Living area	Urban	30	1.11 ± 1.01	33	1.27 ± 0.78	28	1.45 ± 0.97	22	2.25 ± 1.53	30	0.85 ± 0.22	33	0.81 ± 0.00	28	0.85 ± 0.23	22	1.25 ± 1.42
	Rural	49	1.13 ± 0.67	50	1.40 ± 0.95	50	2.08 ± 1.64	46	2.32 ± 1.49	49	0.88 ± 0.41	50	1.00 ± 0.66	50	1.24 ± 1.37	46	1.30 ± 1.13
Maternal pre-pregnancy BMI	Underweight (<18.5 kg/m <sup>2</sup> )	2	1.59 ± 1.18	2	0.59 ± 0.30	1	2.76	1	1.35	2	0.61 ± 0.29	2	0.57 ± 0.24*	1	0.81	1	0.81
	Normal weight (18.5–24.9 kg/m <sup>2</sup> )	54	1.21 ± 0.93	55	1.43 ± 0.95	54	1.79 ± 1.52	44	2.14 ± 1.43	54	0.89 ± 0.40	55	0.96 ± 0.59	54	1.11 ± 1.24	44	1.40 ± 1.42
	Overweight (25.0-29.9 kg/m <sup>2</sup> )	17	0.88 ± 0.25	18	1.30 ± 0.81	15	1.67 ± 1.30	15	2.60 ± 1.54	17	0.85 ± 0.20	18	0.90 ± 0.41	15	0.92 ± 0.47	15	1.11 ± 0.87
	Obese (>30.0 kg/m <sup>2</sup> )	6	0.88 ± 0.21	8	1.06 ± 0.44	8	2.52 ± 1.31	8	2.68 ± 1.81	6	0.81 ± 0.00	8	0.81 ± 0.00	8	1.41 ± 1.20	8	1.01 ± 0.35
Antibiotics intrapartum	No	61	1.09 ± 0.77	64	1.40 ± 0.98	59	1.92 ± 1.35	52	2.39 ± 1.54	61	0.89 ± 0.40	64	0.94 ± 0.57	59	1.20 ± 1.27	52	1.28 ± 1.09
	Yes	18	1.25 ± 0.94	19	1.18 ± 0.42	19	1.63 ± 1.78	16	1.98 ± 1.32	18	0.81 ± 0.00	19	0.88 ± 0.30	19	0.80 ± 0.03	16	1.29 ± 1.61

Supplementary Table 2. Cont.

		Caproate								Total SCFAs							
		15 days		90 days		180 days		365 days		15 days		90 days		180 days		365 days	
		N = 79		N = 83		N = 78		N = 68		N = 79		N = 83		N = 78		N = 68	
		N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD	N	Mean ± SD
Gender	Male	48	0.78 ± 0.13	48	0.77 ± 0.06	44	0.79 ± 0.09	41	0.84 ± 0.51	48	59.23 ± 31.79	48	79.04 ± 34.09	44	102.24 ± 42.56	41	118.20 ± 47.17
	Female	31	0.98 ± 0.94	35	0.80 ± 0.13	34	0.87 ± 0.53	27	0.77 ± 0.03	31	45.46 ± 19.92	35	80.15 ± 41.19	34	98.10 ± 38.37	27	108.60 ± 36.63
Delivery	Vaginal	63	0.88 ± 0.67	65	0.78 ± 0.11	62	0.84 ± 0.40	54	0.83 ± 0.44	63	55.18 ± 28.12	65	76.77 ± 35.74	62	103.66 ± 41.16	54	114.47 ± 41.40
	C-section	16	0.78 ± 0.00	18	0.78 ± 0.00	16	0.77 ± 0.02	14	0.76 ± 0.04	16	48.52 ± 29.87	18	89.41 ± 40.82	16	87.94 ± 36.80	14	114.06 ± 51.54
Type of feeding	BF	51	0.91 ± 0.75	41	0.77 ± 0.06	29	0.88 ± 0.58	16	0.96 ± 0.78	51	50.89 ± 29.88	41	60.39 ± 29.78*	29	84.33 ± 34.89*	16	121.18 ± 58.17
	IF	28	0.78 ± 0.00	42	0.80 ± 0.12	49	0.79 ± 0.09	41	0.75 ± 0.05	28	59.17 ± 25.17	42	98.17 ± 33.94	49	109.97 ± 41.01	41	111.18 ± 40.54
	None <sup>a</sup>	0		0		0		11	0.83 ± 0.25	0		0		0		11	116.48 ± 27.69
Living area	Urban	30	0.99 ± 0.96	33	0.78 ± 0.00	28	0.78 ± 0.00	22	0.77 ± 0.03	30	52.39 ± 30.45	33	67.13 ± 34.48*	28	94.51 ± 34.73	22	115.57 ± 56.28
	Rural	49	0.78 ± 0.13	50	0.79 ± 0.13	50	0.85 ± 0.45	46	0.83 ± 0.48	49	54.71 ± 27.38	50	87.68 ± 36.67	50	103.75 ± 43.49	46	113.82 ± 36.15
Maternal pre-pregnancy BMI	Underweight (<18.5 kg/m <sup>2</sup> )	2	0.58 ± 0.28	2	0.54 ± 0.21*	1	0.78	1	0.78	2	36.37 ± 8.52	2	38.91 ± 15.65	1	113.36	1	77.89
	Normal weight (18.5–24.9 kg/m <sup>2</sup> )	54	0.89 ± 0.72	55	0.79 ± 0.11	54	0.79 ± 0.08	44	0.78 ± 0.13	54	54.82 ± 27.26	55	79.75 ± 38.19	54	101.87 ± 42.41	44	115.51 ± 45.78
	Overweight (25.0–29.9 kg/m <sup>2</sup> )	17	0.82 ± 0.19	18	0.78 ± 0.00	15	0.77 ± 0.03	15	0.96 ± 0.81	17	56.96 ± 29.44	18	86.46 ± 37.60	15	99.77 ± 39.23	15	111.24 ± 39.34
	Obese (>30.0 kg/m <sup>2</sup> )	6	0.78 ± 0.00	8	0.78 ± 0.00	8	1.17 ± 1.10	8	0.73 ± 0.05	6	41.89 ± 39.97	8	72.36 ± 25.91	8	90.40 ± 35.48	8	118.67 ± 41.23
Antibiotics intrapartum	No	61	0.89 ± 0.68	64	0.78 ± 0.11	59	0.84 ± 0.41	52	0.83 ± 0.45	61	54.84 ± 29.35	64	79.06 ± 36.73	59	102.12 ± 39.53	52	112.71 ± 37.86
	Yes	18	0.78 ± 0.00	19	0.78 ± 0.00	19	0.77 ± 0.03	16	0.76 ± 0.04	18	50.39 ± 25.47	19	81.02 ± 38.94	19	95.20 ± 44.38	16	119.86 ± 58.68

Values presented as mean ± standard deviation. Results derived from U-Mann Whitney or Kruskal-Wallis test. BF, breastfeeding; BMI, body mass index; IF, infant formula; SCFAs, short-chain fatty acids. <sup>a</sup>None of the above categories are taken. \* *p* value < 0.05.

