

Additional file 1. Associations between exposure variables and baseline food intake tertiles

Supplementary Table 1a Associations between exposure variables and baseline food intake tertiles in females

	Parental educ. ¹		Family income level ¹			School level ¹		Puberty ¹		BMI ²	Screen time ¹	
	lower	higher	lower	med	higher	lower	higher	yes	no		lower	higher
N	178	445	168	229	195	210	386	294	339	589	578	53
Fruit												
T1	39.3	31.2	38.7	34.5	26.2	41.9	30.8	36.7	31.3	17.0 (2.4)	31.1	54.7
T2	31.5	34.4	31.0	32.8	37.4	34.3	31.1	29.9	36.9	16.6 (2.4)	33.9	30.2
T3	29.2	34.4	30.4	32.8	36.4	23.8	38.1	33.3	31.9	16.6 (2.3)	34.9	15.1
p-value	0.147		0.144			0.001*		0.153		0.285	0.001*	
Vegetable												
T1	41.0	30.8	33.9	36.2	31.3	38.1	31.1	33.0	33.6	16.7 (2.4)	31.3	52.8
T2	32.6	33.5	35.1	34.9	29.2	34.3	33.4	34.4	33.0	16.9 (2.3)	34.8	22.6
T3	26.4	35.7	31.0	28.8	39.5	27.6	35.5	32.7	33.3	16.6 (2.3)	33.9	24.5
p-value	0.026*		0.199			0.100		0.941		0.644	0.006*	
Starchy vegetables												
T1	23.6	37.5	29.8	35.4	36.4	25.2	36.8	34.0	33.0	16.8 (2.4)	34.3	28.3
T2	36.0	31.7	35.7	31.4	31.8	33.8	33.9	35.7	31.3	16.3 (1.8)	33.4	30.2
T3	40.4	30.8	34.5	33.2	31.8	41.0	29.3	30.3	35.7	17.1 (2.7)	32.4	41.5
p-value	0.003*		0.705			0.004*		0.305		0.008*	0.389	
Wholegrain												
T1	41.6	30.1	35.7	31.4	31.3	45.2	28.0	27.9	38.1	16.5 (2.4)	32.5	39.6
T2	30.3	35.3	31.5	37.1	33.3	29.5	35.2	36.7	30.7	16.8 (2.5)	33.6	35.8
T3	28.1	34.6	32.7	31.4	35.4	25.2	36.8	35.4	31.3	16.9 (2.2)	33.9	24.5
p-value	0.023*		0.707			<0.001*		0.025*		0.351	0.349	
Refined grain												
T1	41.6	29.7	37.5	28.4	33.8	37.6	32.4	33.7	32.4	16.5 (2.3)	32.7	37.7
T2	29.8	35.1	29.8	34.5	35.4	32.9	34.5	32.3	34.5	16.8 (2.4)	33.7	28.3
T3	28.7	35.3	32.7	37.1	30.8	29.5	33.2	34.0	33	16.9 (2.4)	33.6	34.0
p-value	0.017*		0.301			0.416		0.842		0.214	0.669	
Meat												
T1	26.4	35.7	29.2	35.4	33.8	27.6	35.5	31.6	34.8	16.4 (1.9)	33.6	34.0
T2	34.3	33.5	36.3	27.9	37.9	30.0	35.5	31.0	35.4	16.7 (2.3)	34.6	17.0
T3	39.3	30.8	34.5	36.7	28.2	42.4	29.0	37.4	29.8	17.1 (2.8)	31.8	49.1
p-value	0.046*		0.126			0.004*		0.125		0.013*	0.012*	
Fish												
T1	32.0	33.7	28.6	37.6	31.3	34.8	33.9	28.2	37.2	16.4 (2.2)	34.8	20.8
T2	33.7	33.7	35.7	30.6	33.8	29.5	35.5	33.0	33.6	16.7 (2.2)	32.2	43.4
T3	34.3	32.6	35.7	31.9	34.9	35.7	30.6	38.8	29.2	17.1 (2.6)	33.0	35.8
p-value	0.897		0.415			0.274		0.017*		0.019*	0.091	
Egg												
T1	30.9	33.7	31.0	36.2	32.8	36.2	31.9	33.7	33.0	16.7 (2.4)	32.4	41.5
T2	37.1	31.9	36.3	31.4	31.3	34.3	33.4	33.0	33.3	16.6 (2.3)	33.7	32.1
T3	32.0	34.4	32.7	32.3	35.9	29.5	34.7	33.3	33.6	16.9 (2.4)	33.9	26.4
p-value	0.465		0.696			0.385		0.986		0.446	0.352	
Nuts												
T1	38.2	31.7	31.0	34.1	34.9	33.8	33.7	33.0	33.9	16.9 (2.6)	32.5	45.3
T2	29.2	35.1	36.3	32.8	29.7	33.3	32.4	31.6	34.5	16.6 (2.2)	33.0	30.2
T3	32.6	33.3	32.7	33.2	35.4	32.9	33.9	35.4	31.6	16.7 (2.2)	34.4	24.5

p-value	0.231		0.760			0.958		0.571		0.297	0.143	
Butter												
T1	50.0	26.5	33.3	34.9	29.7	45.2	27.5	33.0	33.3	17.0 (2.7)	32.5	47.2
T2	25.3	36.9	33.9	29.7	39.5	27.6	36.0	31.3	35.7	16.7 (2.4)	33.6	30.2
T3	24.7	36.6	32.7	35.4	30.8	27.1	36.5	35.7	31.0	16.5 (2)	33.9	22.6
p-value	<0.001*		0.338			<0.001*		0.372		0.098	0.077	
Margarine												
T1	21.3	37.8	28.0	35.4	32.3	27.6	35.5	35.0	31.3	16.5 (2.1)	34.8	18.9
T2	35.4	32.4	36.9	29.3	36.9	32.9	33.4	33.0	33.6	16.7 (2.2)	33.0	34.0
T3	43.3	29.9	35.1	35.4	30.8	39.5	31.1	32.0	35.1	17.1 (2.7)	32.2	47.2
p-value	<0.001*		0.303			0.066		0.562		0.044*	0.031*	
Oil												
T1	39.3	31.2	31.5	32.8	35.4	37.1	31.3	31.0	35.4	17.0 (2.5)	33.6	35.8
T2	36.5	31.9	29.8	34.9	33.3	32.9	34.2	36.1	31.6	16.8 (2.5)	33.7	34.0
T3	24.2	36.9	38.7	32.3	31.3	30.0	34.5	33.0	33.0	16.5 (2.0)	32.7	30.2
p-value	0.009*		0.569			0.323		0.391		0.093	0.919	
Dairy												
T1	36.0	32.8	38.1	34.5	29.2	39.5	29.8	32.3	35.1	16.7 (2.5)	32.2	47.2
T2	34.3	33.3	30.4	32.8	35.9	30.0	35.0	32.3	33.3	16.8 (2.3)	33.4	34.0
T3	29.8	33.9	31.5	32.8	34.9	30.5	35.2	35.4	31.6	16.7 (2.2)	34.4	18.9
p-value	0.582		0.505			0.055		0.577		0.786	0.033*	
Sugar-sweetened food												
T1	30.3	34.2	31.5	31.4	38.5	27.6	35.0	35.7	31.3	16.7 (2.2)	34.1	18.9
T2	32.6	33.7	28.0	37.6	30.8	31.9	34.2	33.3	33.3	16.9 (2.4)	33.0	39.6
T3	37.1	32.1	40.5	31.0	30.8	40.5	30.8	31.0	35.4	16.6 (2.4)	32.9	41.5
p-value	0.464		0.085			0.045*		0.393		0.447	0.077	
Caloric drinks												
T1	32.0	34.2	33.9	37.6	29.7	34.3	31.9	32.7	34.2	17.0 (2.5)	34.3	22.6
T2	27.5	35.3	35.7	31.0	32.8	31.4	35.0	35.7	31.3	16.7 (2.2)	34.1	28.3
T3	40.4	30.6	30.4	31.4	37.4	34.3	33.2	31.6	34.5	16.6 (2.3)	31.7	49.1
p-value	0.045*		0.376			0.670		0.486		0.282	0.032*	
Tea [g/d]												
T1	39.3	31.2	27.4	39.3	30.8	38.6	30.6	33.3	33.6	16.8 (2.4)	33.2	32.1
T2	32.0	33.7	33.3	33.2	33.8	31.9	35.5	34.4	32.4	16.8 (2.5)	33.2	37.7
T3	28.7	35.1	39.3	27.5	35.4	29.5	33.9	32.3	33.9	16.7 (2.2)	33.6	30.2
p-value	0.125		0.061			0.140		0.861		0.846	0.787	
Water [g/d]												
T1	39.3	31.7	31.5	30.1	39.0	34.3	32.4	33.7	32.7	16.2 (2.0)	31.8	50.9
T2	28.1	35.7	35.1	32.3	32.3	31.9	33.4	30.3	36.6	16.8 (2.6)	34.8	20.8
T3	32.6	32.6	33.3	37.6	28.7	33.8	34.2	36.1	30.7	17.2 (2.3)	33.4	28.3
p-value	0.111		0.243			0.883		0.195		<0.001*	0.014*	
Protein												
T1	33.1	33.9	35.7	31.9	31.8	32.9	34.7	32.0	34.8	16.1 (1.9)	33.0	37.7
T2	30.3	34.6	32.7	33.2	34.4	30.5	35.2	31.3	34.8	16.7 (2.3)	34.4	22.6
T3	36.5	31.5	31.5	34.9	33.8	36.7	30.1	36.7	30.4	17.4 (2.7)	32.5	39.6
p-value	0.426		0.915			0.235		0.238		<0.001*	0.215	
Fat												
T1	33.7	33.5	31.0	32.3	34.9	30.0	33.7	32.3	33.9	16.6 (2.3)	33.7	28.3
T2	33.7	32.6	31.5	31.9	39.0	31.9	35.5	32.0	34.8	16.9 (2.2)	33.6	32.1
T3	32.6	33.9	37.5	35.8	26.2	38.1	30.8	35.7	31.3	16.7 (2.5)	32.7	39.6
p-value	0.942		0.148			0.199		0.488		0.504	0.559	
Carbohydrates												
T1	34.8	33.0	36.9	38.0	25.1	36.2	32.4	35.7	31.9	16.9 (2.6)	33.2	35.8

T2	30.9	33.9	31.5	28.4	42.1	32.9	33.9	31.6	34.5	16.8 (2.2)	33.0	37.7
T3	34.3	33.0	31.5	33.6	32.8	31.0	33.7	32.7	33.6	16.5 (2.3)	33.7	26.4
p-value	0.765		0.015*			0.625		0.567		0.282	0.547	
n3 PUFA												
T1	31.5	33.9	31.0	33.6	34.4	30.5	33.9	28.6	36.9	16.5 (2.2)	32.5	37.7
T2	34.3	32.6	32.7	32.3	35.4	35.2	33.7	35.7	31.3	16.7 (2.2)	34.3	26.4
T3	34.3	33.5	36.3	34.1	30.3	34.3	32.4	35.7	31.9	17.0 (2.6)	33.2	35.8
p-value	0.833		0.789			0.689		0.086		0.076	0.499	
n6 PUFA												
T1	32.0	33.9	29.2	34.5	36.4	29.5	35.2	29.3	36.6	16.5 (2)	34.8	20.8
T2	31.5	33.7	30.4	29.3	37.4	33.8	33.7	33.0	33.6	16.9 (2.5)	33.0	37.7
T3	36.5	32.4	40.5	36.2	26.2	36.7	31.1	37.8	29.8	16.8 (2.5)	32.2	41.5
p-value	0.610		0.043*			0.270		0.062		0.206	0.109	
Retinol [mg/d]												
T1	25.8	36.2	29.8	28.8	40.0	27.6	35.2	33.7	33.9	16.7 (2.4)	33.2	34.0
T2	34.3	32.6	36.9	34.5	29.2	34.3	33.9	32	33.3	16.7 (2.3)	33.2	37.7
T3	39.9	31.2	33.3	36.7	30.8	38.1	30.8	34.4	32.7	16.8 (2.3)	33.6	28.3
p-value	0.030*		0.113			0.101		0.899		0.977	0.702	
Beta Carotene [mg/d]												
T1	42.1	29.9	37.5	31.0	34.4	38.1	31.1	28.9	38.1	16.9 (2.5)	31.5	54.7
T2	37.1	32.6	30.4	34.9	29.7	33.8	32.6	35.0	31.6	16.6 (2.2)	33.2	32.1
T3	20.8	37.5	32.1	34.1	35.9	28.1	36.3	36.1	30.4	16.7 (2.3)	35.3	13.2
p-value	<0.001*		0.616			0.092		0.05		0.382	0.001*	
Vitamin C [mg/d]												
T1	32.0	33.5	34.5	34.5	32.8	34.8	33.2	30.6	36.3	16.8 (2.2)	32.2	49.1
T2	34.8	32.6	33.3	35.8	30.8	34.8	31.3	36.7	30.1	16.7 (2.5)	33.9	22.6
T3	33.1	33.9	32.1	29.7	36.4	30.5	35.5	32.7	33.6	16.6 (2.3)	33.9	28.3
p-value	0.861		0.666			0.448		0.162		0.713	0.040*	
alpha tocopherol [mg/d]												
T1	34.3	32.1	34.5	30.6	33.8	32.9	33.2	29.6	36.6	16.7 (2.3)	33.4	35.8
T2	29.2	35.3	28.0	35.8	35.4	30.5	35.5	33.7	33.3	16.8 (2.4)	32.7	39.6
T3	36.5	32.6	37.5	33.6	30.8	36.7	31.3	36.7	30.1	16.7 (2.3)	33.9	24.5
p-value	0.340		0.422			0.337		0.110		0.944	0.354	

¹ Presented as percentage and tested using Pearson's χ^2 test for count data; ² Presented as mean (standard deviation) and tested using one-way analysis of variance; *p-value <0.05

Supplementary Table 1b Associations between exposure variables and baseline food intake tertiles in males

	Parental educ. ¹		Family income level ¹			School level ¹		Puberty ¹		BMI ²	Screen time ¹	
	lower	higher	lower	med	higher	lower	higher	yes	no		lower	higher
N	211	357	166	196	174	215	337	63	516	527	523	61
Fruit												
T1	39.3	30.8	41.0	33.2	27.6	38.6	29.4	36.5	33.1	16.8 (2.3)	31.0	52.5
T2	33.6	33.3	28.9	33.2	34.5	30.2	34.4	27.0	34.1	16.9 (2.3)	34.0	27.9
T3	27.0	35.9	30.1	33.7	37.9	31.2	36.2	36.5	32.8	16.7 (2.3)	35.0	19.7
p-value	0.049*		0.138			0.079		0.526		0.726	0.002*	
Vegetable												
T1	33.6	34.5	38.6	34.7	28.2	38.1	30.0	28.6	34.1	16.7 (2.3)	31.4	49.2
T2	38.4	30.3	33.7	31.6	32.2	33.5	33.5	36.5	32.8	16.9 (2.1)	33.8	27.9
T3	28.0	35.3	27.7	33.7	39.7	28.4	36.5	34.9	33.1	16.9 (2.5)	34.8	23.0
p-value	0.088		0.164			0.073		0.668		0.579	0.017*	
Starchy vegetables												
T1	27.0	37.5	28.9	34.2	35.6	30.2	35.9	49.2	31.4	16.4 (2.1)	34.0	29.5
T2	31.3	34.5	34.9	32.1	33.9	28.4	35.6	23.8	34.7	16.8 (2.1)	33.3	32.8
T3	41.7	28.0	36.1	33.7	30.5	41.4	28.5	27.0	33.9	17.4 (2.6)	32.7	37.7
p-value	0.002*		0.675			0.007*		0.017*		<0.001*	0.687	
Wholegrain												
T1	44.1	27.7	37.3	31.1	33.3	42.8	28.2	27.0	34.7	16.9 (2.3)	31.2	52.5
T2	33.2	33.3	31.3	33.2	33.9	31.6	34.1	31.7	32.9	16.8 (2.4)	34.6	24.6
T3	22.7	38.9	31.3	35.7	32.8	25.6	37.7	41.3	32.4	16.7 (2.1)	34.2	23.0
p-value	<0.001*		0.776			0.001*		0.310		0.742	0.004*	
Refined grain												
T1	33.2	33.6	30.1	33.2	32.8	34.4	32.6	28.6	34.1	16.7 (2.4)	33.8	31.1
T2	36.5	31.7	37.3	30.1	33.9	40.0	29.7	31.7	33.3	16.8 (2.2)	32.9	36.1
T3	30.3	34.7	32.5	36.7	33.3	25.6	37.7	39.7	32.6	17.0 (2.3)	33.3	32.8
p-value	0.425		0.691			0.006*		0.494		0.542	0.866	
Meat												
T1	27.5	36.4	33.7	35.2	31.0	27.0	37.1	30.2	33.3	16.3 (2.0)	34.0	29.5
T2	35.1	31.7	32.5	31.6	37.4	33.5	33.2	33.3	33.5	16.9 (2.4)	32.9	34.4
T3	37.4	31.9	33.7	33.2	31.6	39.5	29.7	36.5	33.1	17.3 (2.3)	33.1	36.1
p-value	0.089		0.805			0.020*		0.834		<0.001*	0.772	
Fish												
T1	32.7	33.6	33.1	31.1	33.9	35.3	32.0	34.9	32.8	16.6 (2.1)	33.3	31.1
T2	32.2	34.5	33.7	35.2	32.8	31.2	35.9	25.4	34.7	17.1 (2.4)	32.7	41.0
T3	35.1	31.9	33.1	33.7	33.3	33.5	32.0	39.7	32.6	16.8 (2.4)	34.0	27.9
p-value	0.732		0.982			0.502		0.305		0.086	0.404	
Egg												
T1	35.5	31.9	30.7	35.2	32.2	36.7	31.5	34.9	33.3	17.0 (2.4)	32.5	41.0
T2	30.8	35.3	31.9	34.2	32.8	33.0	33.2	30.2	33.3	16.6 (2.1)	33.8	27.9
T3	33.6	32.8	37.3	30.6	35.1	30.2	35.3	34.9	33.3	16.9 (2.4)	33.7	31.1
p-value	0.510		0.738			0.348		0.880		0.187	0.393	
Nuts												
T1	37.0	31.1	34.3	31.1	32.2	39.5	29.4	27.0	34.1	16.9 (2.4)	32.1	44.3
T2	31.3	33.9	30.1	35.2	33.3	32.1	34.1	38.1	33.1	16.9 (2.4)	33.8	27.9
T3	31.8	35.0	35.5	33.7	34.5	28.4	36.5	34.9	32.8	16.7 (2.1)	34.0	27.9
p-value	0.356		0.895			0.033*		0.511		0.822	0.164	
Butter												
T1	48.8	24.9	39.8	31.6	32.2	44.7	26.1	27.0	34.1	17.0 (2.4)	31.9	47.5
T2	29.4	35.6	31.9	32.7	32.2	31.6	33.8	44.4	32.0	16.9 (2.4)	33.3	31.1

T3	21.8	39.5	28.3	35.7	35.6	23.7	40.1	28.6	33.9	16.5 (2.0)	34.8	21.3
p-value	<0.001*		0.413			<0.001*		0.138		0.097		0.030*
Margarine												
T1	23.2	38.7	27.7	39.3	35.1	23.3	40.4	38.1	32.8	16.7 (2.1)	34.4	23.0
T2	33.6	32.8	31.9	29.6	35.6	36.3	31.5	33.3	33.1	16.7 (2.2)	32.9	37.7
T3	43.1	28.6	40.4	31.1	29.3	40.5	28.2	28.6	34.1	17.1 (2.5)	32.7	39.3
p-value	<0.001*		0.085			<0.001*		0.608		0.189		0.195
Oil												
T1	41.7	29.1	39.8	34.7	24.1	40.5	29.4	22.2	34.7	16.7 (2.3)	32.7	42.6
T2	33.6	33.1	33.1	30.6	38.5	34.0	32.6	38.1	32.9	17.0 (2.4)	32.7	37.7
T3	24.6	37.8	27.1	34.7	37.4	25.6	38.0	39.7	32.4	16.8 (2.2)	34.6	19.7
p-value	0.001*		0.024*			0.004*		0.137		0.539		0.058
Dairy												
T1	37.0	31.9	34.9	33.2	31.6	34.0	32.6	41.3	32.9	16.9 (2.4)	32.3	42.6
T2	33.2	31.9	34.9	31.6	34.5	31.6	34.7	27.0	33.9	16.7 (2.3)	33.3	32.8
T3	29.9	36.1	30.1	35.2	33.9	34.4	32.6	31.7	33.1	16.9 (2.2)	34.4	24.6
p-value	0.272		0.848			0.753		0.369		0.617		0.190
Sugar-sweetened food												
T1	26.1	37.3	25.9	35.2	41.4	30.2	36.2	41.3	32.6	17.1 (2.3)	34.2	27.9
T2	33.6	33.1	33.1	33.7	33.3	30.7	34.7	30.2	33.3	16.9 (2.1)	34.2	26.2
T3	40.3	29.7	41.0	31.1	25.3	39.1	29.1	28.6	34.1	16.5 (2.4)	31.5	45.9
p-value	0.009*		0.013*			0.050		0.376		0.057		0.078
Caloric drinks												
T1	32.2	34.5	30.7	34.2	31.0	32.1	34.1	33.3	33.5	16.8 (2.3)	34.2	24.6
T2	32.7	33.1	37.3	31.6	32.8	31.6	34.4	38.1	32.8	16.9 (2.3)	32.5	39.3
T3	35.1	32.5	31.9	34.2	36.2	36.3	31.5	28.6	33.7	16.8 (2.3)	33.3	36.1
p-value	0.793		0.767			0.500		0.628		0.867		0.298
Tea [g/d]												
T1	36.5	30.8	28.9	34.7	35.1	39.5	30.9	30.2	33.9	16.9 (2.4)	32.7	39.3
T2	34.6	33.6	37.3	28.6	32.8	33.5	32.3	30.2	33.7	16.9 (2.4)	33.1	36.1
T3	28.9	35.6	33.7	36.7	32.2	27.0	36.8	39.7	32.4	16.7 (2.1)	34.2	24.6
p-value	0.210		0.415			0.034*		0.507		0.595		0.302
Water [g/d]												
T1	39.3	30.0	41.6	28.1	33.9	37.7	30.6	28.6	34.5	16.5 (2.3)	33.5	37.7
T2	30.3	35.0	28.9	38.3	33.3	28.8	36.8	34.9	32.9	16.8 (2.2)	33.1	34.4
T3	30.3	35.0	29.5	33.7	32.8	33.5	32.6	36.5	32.6	17.2 (2.4)	33.5	27.9
p-value	0.073		0.105			0.106		0.633		0.035*		0.657
Protein												
T1	30.3	34.7	36.7	32.7	32.2	30.2	35.3	25.4	34.3	16.4 (2.1)	33.3	34.4
T2	34.1	33.3	33.7	33.7	33.3	33.0	33.8	30.2	33.9	16.7 (2.2)	32.5	41.0
T3	35.5	31.9	29.5	33.7	34.5	36.7	30.9	44.4	31.8	17.4 (2.5)	34.2	24.6
p-value	0.517		0.847			0.299		0.117		<0.001*		0.256
Fat												
T1	34.1	32.2	29.5	38.8	31.6	29.8	34.7	28.6	33.7	16.6 (2.3)	33.3	34.4
T2	33.2	33.3	36.1	31.1	36.8	32.1	35.0	36.5	33.1	17.1 (2.4)	33.5	32.8
T3	32.7	34.5	34.3	30.1	31.6	38.1	30.3	34.9	33.1	16.8 (2.1)	33.3	32.8
p-value	0.874		0.387			0.153		0.707		0.083		0.984
Carbohydrates												
T1	34.6	33.6	31.9	27.6	38.5	36.3	31.8	42.9	32.4	17.1 (2.3)	33.7	31.1
T2	33.2	33.6	34.9	38.3	28.7	35.8	32.0	33.3	33.5	16.9 (2.3)	33.3	34.4
T3	32.2	32.8	33.1	34.2	32.8	27.9	36.2	23.8	34.1	16.4 (2.2)	33.1	34.4
p-value	0.972		0.200			0.129		0.161		0.019*		0.926
n3 PUFA												

T1	31.8	34.5	33.1	35.7	31.6	30.2	36.2	31.7	33.5	16.4 (1.9)	32.3	42.6
T2	30.3	35.0	35.5	31.6	33.3	31.6	32.3	34.9	33.1	16.9 (2.4)	34.0	27.9
T3	37.9	30.5	31.3	32.7	35.1	38.1	31.5	33.3	33.3	17.3 (2.4)	33.7	29.5
p-value	0.189		0.868			0.210		0.948		0.001*	0.267	
n6 PUFA												
T1	28.9	35.9	27.7	36.2	36.8	30.2	36.2	28.6	33.7	16.4 (2.1)	33.3	36.1
T2	36.5	31.7	35.5	32.1	28.7	33.0	32.0	31.7	33.7	16.8 (2.3)	32.9	36.1
T3	34.6	32.5	36.7	31.6	34.5	36.7	31.8	39.7	32.6	17.2 (2.4)	33.8	27.9
p-value	0.220		0.337			0.303		0.504		0.005*	0.644	
Retinol [mg/d]												
T1	32.7	34.2	33.1	32.7	35.1	34.0	33.2	31.7	33.1	16.5 (2.1)	32.9	37.7
T2	31.8	33.1	31.3	32.7	35.1	30.2	36.5	28.6	33.9	16.8 (2.4)	34.2	26.2
T3	35.5	32.8	35.5	34.7	29.9	35.8	30.3	39.7	32.9	17.1 (2.4)	32.9	36.1
p-value	0.796		0.824			0.249		0.530		0.045*	0.451	
Beta Carotene [mg/d]												
T1	39.3	30.3	34.3	30.6	34.5	43.7	26.7	27.0	33.7	16.7 (2.3)	31.5	47.5
T2	35.5	32.8	36.1	34.7	28.7	33.0	34.1	41.3	32.4	17.2 (2.2)	32.9	36.1
T3	25.1	37.0	29.5	34.7	36.8	23.3	39.2	31.7	33.9	16.6 (2.3)	35.6	16.4
p-value	0.010*		0.469			<0.001*		0.335		0.057	0.006*	
Vitamin C [mg/d]												
T1	37.0	31.7	36.1	37.2	28.2	37.7	31.2	30.2	33.9	16.6 (2.2)	32.7	36.1
T2	31.8	34.7	30.7	32.1	37.4	30.7	35.3	23.8	34.7	16.8 (2.1)	33.1	36.1
T3	31.3	33.6	33.1	30.6	34.5	31.6	33.5	46.0	31.4	17.1 (2.5)	34.2	27.9
p-value	0.431		0.369			0.268		0.053		0.073	0.609	
alpha tocopherol [mg/d]												
T1	36.5	31.4	31.3	38.8	31.6	35.8	33.2	31.7	33.5	16.6 (2.2)	32.7	37.7
T2	34.1	33.9	36.1	31.6	32.2	33.5	32.3	19.0	34.9	16.8 (2.3)	33.8	29.5
T3	29.4	34.7	32.5	29.6	36.2	30.7	34.4	49.2	31.6	17.1 (2.3)	33.5	32.8
p-value	0.332		0.432			0.651		0.009*		0.136	0.695	

¹ Presented as percentage and tested using Pearson's χ^2 test for count data; ² Presented as mean (standard deviation) and tested using one-way analysis of variance; *p-value <0.05