

Table S1 Missing data for key variables in the study population

Variable	Total (n=2521)	Breast =0 (n=2430)	Breast =1 (n=91)
Age	0 (0%)	0 (0%)	0 (0%)
Ratio of family income to poverty	339 (13.4%)	330 (13.6%)	9 (9.9%)
Race	0 (0%)	0 (0%)	0 (0%)
Education level	6 (0.2%)	6 (0.2%)	0 (0%)
Marital status	3 (0.1%)	3 (0.1%)	0 (0%)
Drinking	218 (8.6%)	211 (8.7%)	7 (7.7%)
Age at Menarche	250 (9.9%)	241 (9.9%)	9 (9.9%)
Menopausal hormone therapy (HRT) use	236 (9.4%)	229 (9.4%)	7 (7.7%)
Smoking	0 (0%)	0 (0%)	0 (0%)
BMI	37 (1.5%)	34 (1.4%)	3 (3.3%)
Number of Pregnancies	226 (9%)	219 (9%)	7 (7.7%)
Had a hysterectomy	239 (9.5%)	232 (9.5%)	7 (7.7%)
Had both ovaries removed	269 (10.7%)	259 (10.7%)	10 (11%)
Oral contraceptive use	231 (9.2%)	224 (9.2%)	7 (7.7%)
Sleep Disorders	2 (0.1%)	2 (0.1%)	0 (0%)
Hypertension	107 (4.2%)	106 (4.4%)	1 (1.1%)
Hyperglycemia	101 (4%)	95 (3.9%)	6 (6.6%)
Diet Inflammatory Index (DII)	0 (0%)	0 (0%)	0 (0%)
Minutes sedentary activity	22 (0.9%)	22 (0.9%)	0 (0%)
Vitamin C	157 (6.2%)	150 (6.2%)	7 (7.7%)
Alpha-carotene	313 (12.4%)	298 (12.3%)	15 (16.5%)
Alpha-cryptoxanthin	248 (9.8%)	235 (9.7%)	13 (14.3%)
Beta-cryptoxanthin	251 (10%)	240 (9.9%)	11 (12.1%)
Gamma-tocopherol	165 (6.5%)	158 (6.5%)	7 (7.7%)
Lutein and zeaxanthin	230 (9.1%)	219 (9%)	11 (12.1%)
Retinol	135 (5.4%)	129 (5.3%)	6 (6.6%)
Alpha-tocopherol	191 (7.6%)	178 (7.3%)	13 (14.3%)
Total Lycopene	273 (10.8%)	264 (10.9%)	9 (9.9%)

Table S2 Results of the balance test

Variable	Type	Unadjusted		Adjusted	
		SMD	VR	SMD	VR
distance	Distance	0.802	3.118	0.042	1.222
Age	Contin.	1.413	0.461	-0.002	0.961
Family_income_to_poverty	Contin.	0.182	1.080	-0.012	1.106
Race_0	Binary	-0.027	-	0.011	-
Race_1	Binary	-0.061	-	-0.003	-
Race_2	Binary	0.218	-	0.005	-
Race_3	Binary	-0.050	-	-0.025	-
Race_4	Binary	-0.080	-	0.011	-
Education_level_0	Binary	-0.055	-	0.008	-
Education_level_1	Binary	0.019	-	0.003	-
Education_level_2	Binary	-0.005	-	-0.005	-
Education_level_3	Binary	-0.002	-	0.008	-
Education_level_4	Binary	0.043	-	-0.014	-
Marital_status_0	Binary	-0.173	-	0.000	-
Marital_status_1	Binary	0.311	-	-0.022	-
Marital_status_2	Binary	-0.138	-	0.022	-
Drinking_0	Binary	0.001	-	0.019	-
Drinking_1	Binary	0.114	-	0.003	-
Drinking_2	Binary	-0.115	-	-0.022	-
Age_at_Menarche	Contin.	0.034	1.171	0.050	1.339
HRT_use	Binary	0.030	-	-0.044	-
Smoking_0	Binary	0.010	-	0.033	-
Smoking_1	Binary	0.040	-	-0.019	-
Smoking_2	Binary	-0.050	-	-0.014	-
BMI	Contin.	-0.175	0.586	-0.058	0.732
Number_of_Pregnancies	Contin.	0.173	0.855	-0.012	0.855
Had_a_hysterectomy	Binary	0.153	-	-0.005	-
Had_both_ovaries_removed	Binary	0.075	-	-0.025	-
Oral_contraceptive_use	Binary	0.020	-	-0.036	-
Sleep_Disorders	Binary	0.057	-	-0.019	-
Hypertension	Binary	0.214	-	0.000	-
Hyperglycemia	Binary	0.120	-	0.005	-
DII	Contin.	0.073	0.852	0.010	0.959
Minutes_sedentary_activity	Contin.	0.045	0.843	-0.013	0.999

- denotes no data available.