

Supplemental Table S1. Characteristics of study population (n=789, HUMIS cohort).

Characteristic	N	Mean	SD	Min	Max
Maternal age at pregnancy starts (years)	789	29.6	4.7	16.0	43.0
Maternal height (cm)	777	167.3	6.2	149.0	199.0
Pre-pregnancy BMI (kg/m ²)	761	25.0	4.8	16.4	47.9
Gestational weight gain (kg)	756	15.1	6.0	-7.0	38.0
Total fatty fish dinners in one-year (servings) ¹	731	26.0	28.2	0	282.3

¹Defined as total fatty fish dinners in past year.

Supplemental Table S2. Percentages of the major PC species in all samples and comparison of the percentages between the lowest and highest-fat quartiles.

%PCs	Total sample (n=664)	Lowest FA quartile (n=166)	Highest FA quartile (n=166)	<i>p</i> -value
presumably containing only saturated FAs				
PCaa.C32:0 (16:0/16:0)	14.77±3.72	15.33±3.82	14.47±3.26	0.026
PCaa.C34:0(16:0/18:0)	13.52±4.65	14.20±4.70	13.02±4.41	0.019
PCaa.C36:0 (18:0/18:0)	0.53±0.20	0.56±0.23	0.50±0.17	0.004
presumably containing monounsaturated FAs				
PCaa.C32:1 (16:0/16:1)	1.29±0.39	1.28±0.35	1.29±0.29	0.723
PCaa.C34:1 (16:0/18:1)	11.00±2.15	10.66±2.19	11.38±1.94	0.002
PCaa.C36:1 (18:0/18:1)	6.30±1.15	6.41±1.27	6.35±1.13	0.612
PCaa.C38:1 (20:0/18:1)	0.59±0.40	0.60±0.40	0.56±0.37	0.315
presumably containing polyunsaturated FAs				
PCaa.C34:2 (16:0/18:2)	6.97±1.96	6.46±1.91	7.35±1.96	3.90 × 10⁻⁴*
PCaa.C36:2 (18:0/18:2)	25.22±5.47	24.60±5.40	25.88±4.80	0.024
PCaa.C38:2 (20:0/18:2)	2.00±0.82	2.07±0.81	1.90±0.60	0.028
PCaa.C38:3 (20:0/18:3)	1.75±0.44	1.76±0.46	1.75±0.37	0.806
PCaa.C36:3 (18:0/18:3)	2.37±0.86	2.12±0.80	2.60±0.80	1.00 × 10⁻⁶*
presumably containing LCPUFAs				
PCaa.C36:4 (16:0/20:4)	0.58±0.26	0.50±0.23	0.64±0.22	2.56 × 10⁻⁸*
PCaa.C38:4 (18:0/20:4)	1.38±0.36	1.32±0.37	1.44±0.34	0.002

*Significant with a Bonferroni adjusted *p*-value≤0.001. Data presented as mean±SD. Values are expressed as mol% of total phosphatidylcholine. PCs: phosphatidylcholine species, FA: fatty acid, LCPUFAs: long chain polyunsaturated FAs.

Supplemental Table S3. Percentages of the major SM species in all samples and comparison of the percentages between the lowest and highest FA quartiles.

%SM	Total sample (n=664)	Lowest FA quartile (n=166)	Highest FA quartile (n=166)	p-value
presumably containing saturated FAs				
SM.C32:1(18:1/14:0)	0.81±0.29	0.85±0.29	0.79±0.26	0.048
SM.C34:1(18:1/16:0)	7.93±1.50	8.40±1.70	7.62±1.36	9.00 × 10^{-6*}
SM.C35:1(18:1/17:0)	0.47±0.20	0.50±0.13	0.44±0.11	2.00 × 10^{-5*}
SM.C36:1(18:1/18:0)	11.19±2.07	11.36±2.21	11.12±1.93	0.294
SM.C37:1(18:1/19:0)	0.52±0.14	0.54±0.14	0.50±0.13	0.021
SM.C38:1(18:1/20:0)	5.60±0.77	5.60±0.71	5.60±0.73	0.928
SM.C39:1(18:1/21:0)	0.86±0.54	0.85±0.16	0.81±0.16	0.013
SM.C40:1(18:1/22:0)	31.22±5.80	30.90±5.76	31.65±5.61	0.226
SM.C41:1(18:1/23:0)	3.94±0.58	3.91±0.63	3.94±0.53	0.557
SM.C42:1(18:1/24:0)	16.39±2.69	15.97±2.63	16.76±2.77	0.008
SM.C43:1(18:1/25:0)	0.50±0.09	0.50±0.09	0.50±0.09	0.916
presumably containing unsaturated FAs				
SM.C36:2(18:1/18:1)	0.72±0.22	0.77±0.24	0.69±0.21	0.005
SM.C38:2(18:1/20:1)	0.53±0.20	0.52±0.14	0.53±0.14	0.568
SM.C40:2(18:1/22:1)	2.00±0.45	1.93±0.40	2.05±0.46	0.008
SM.C41:2(18:1/23:1)	0.80±0.20	0.86±0.21	0.76±0.18	7.00 × 10^{-5*}
SM.C42:2(18:1/24:1)	10.70±2.59	10.90±2.43	10.61±2.39	0.348
SM.C43:2(18:1/25:1)	0.50±0.53	0.51±0.13	0.50±0.12	0.012
SM.C42:3(18:1/24:2)	1.01±0.62	1.03±0.26	0.99±0.25	0.089

*Significant with Bonferroni adjusted p-value≤0.001. Data presented as mean±SD. Values are expressed as mol% of total sphingomyelin (SM)

Supplemental Table S4. Regression of LCPUFAs containing %PCs with % FAs in the lowest and highest-FA quartiles.

Total FA	Dependent Variable (% PCs)	Independent Variable (%FAs)	R²	B (95%CI)	β	p-value
Lowest-FA Quartile(n=166)						
%PCaa.C36:4			0.095			
		%C16:0		0.009(0.003 - 0.016)	0.217	0.004
%PCaa.C38:4		%C20:4n-6		0.215(0.058 - 0.372)	0.202	0.008
		%C18:0	0.162	-0.009(-0.024 - 0.007)	-0.079	0.277
%PCaa.C36:5		%C20:4n-6		0.694(0.431 - 0.956)	0.380	5.46 × 10⁻⁷
		%C16:0	0.244	0.001(0.000 - 0.002)	0.182	0.008
%PCaa.C38:5		%C20:5n-3		0.071(0.051 – 0.092)	0.470	1.19 × 10⁻¹⁰
		%C18:0	0.256	-0.003(-0.008 – 0.001)	-0.103	0.131
%PCaa.C38:6		%C20:5n-3		0.242(0.176 – 0.309)	0.486	2.67*10⁻¹¹
		%C16:0	0.226	0.004(0.001 – 0.006)	0.223	0.001
%PCaa.C40:6		%C22:6n-3		0.049(0.034 – 0.065)	0.430	3.72 × 10⁻⁹
		%C18:0	0.180	-0.002(-0.007 – 0.004)	-0.047	0.512
		%C22:6n-3		0.078(0.051 – 0.104)	0.417	2.88 × 10⁻⁸
Highest-FA quartile (n=166)						
%PCaa.C36:4			0.100			
		%C16:0		0.007(-0.001 – 0.016)	0.127	0.090
%PCaa.C38:4		%C20:4n-6		0.390(0.200 – 0.581)	0.302	8.10 × 10⁻⁵
		%C18:0	0.148	-0.007(-0.024 – 0.010)	-0.061	0.406
%PCaa.C36:5		%C20:4n-6		0.745(0.456 – 1.035)	0.371	1.00 × 10⁻⁵
		%C16:0	0.289	0.000(-0.001 – 0.001)	0.042	0.522
%PCaa.C38:5		%C20:5n-3		0.083(0.062 – 0.103)	0.534	1.48 × 10⁻¹³
		%C18:0	0.431	-0.002(-0.005 – 0.002)	-0.058	0.328
%PCaa.C38:6		%C20:5n-3		0.338(0.277 – 0.399)	0.649	2.76 × 10⁻²¹
		%C16:0	0.538	0.004(0.001 – 0.006)	0.210	0.002
%PCaa.C40:6		%C22:6n-3		0.068(0.051 – 0.086)	0.503	2.01 × 10⁻¹²
		%C18:0	0.301	-0.004(-0.010 – 0.001)	-0.105	0.114
		%C22:6n-3		0.127(0.095 – 0.159)	0.523	3.81 × 10⁻¹³

%PCaa: %diacyl-phosphatidylcholine, %FAs: % fatty acids, R²: coefficient of determination, B(%CI): Unstandardized coefficient with 95%confidence interval, β: standardized regression coefficient.