

SUPPLEMENTARY INFORMATION

TITLE

Perinatal exposure to diets with different n-6:n-3 fatty acid ratios affects olfactory tissue fatty acid composition

AUTHORS

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Table S1: Concentrations of individual molecular species of PC and PlsC in the offspring olfactory mucosa (% of total PC + PlsC). Data are expressed as the mean \pm s.e.m. (n= 6 mice/group). *: Values are significantly different from the control group CON (Mann-Whitney U test; p < 0.05).

Molecular species	PC/PlsC species (sum composition)	Ion precursor m/z 184 [M+H] ⁺	CON		LOW		HIGH	
			mean	sem	mean	sem	mean	sem
PC(15:0/14:0)	PC 29:0	692.5	0.07	0.01	0.06	0.01	0.05	0.01
PC(16:0/14:1)	PC 30:1	704.5	0.11	0.01	0.11	0.01	0.10	0.01
PC(16:0/14:0)	PC 30:0	706.5	1.64	0.06	1.59	0.10	1.45	0.11
PC(15:1/16:0)	PC 31:1	718.5	0.20	0.01	0.20	0.02	0.18	0.01
PC(16:0p/16:0)	PlsC 32:0	718.5	0.20	0.01	0.20	0.02	0.18	0.01
PC(15:0/16:0)	PC 31:0	720.5	0.31	0.02	0.34	0.03	0.31	0.03
PC(14:0/18:2)	PC 32:2	730.5	0.25	0.02	0.27	0.02	0.25	0.03
PC(16:0/16:1)	PC 32:1	732.5	2.99	0.08	2.98	0.13	2.86	0.08
PC(16:0/16:0)	PC 32:0	734.6	13.57	0.74	13.43	0.53	14.13	0.61
PC(16:0p/18:1)	PlsC 34:1	744.6	0.24	0.01	0.25	0.02	0.20	0.02
PC(17:1/16:0)	PC 33:1	746.6	0.61	0.04	0.56	0.02	0.58	0.02
PC(16:0p/18:0)	PlsC 34:0	746.6	0.61	0.04	0.56	0.02	0.58	0.02
PC(14:0/20:4)	PC 34:4	754.5	0.22	0.01	0.28	0.02	0.18	0.02
PC(16:1/18:2)	PC 34:3	756.5	0.46	0.03	0.32*	0.02	0.39	0.04
PC(16:0/18:2)	PC 34:2	758.6	6.56	0.50	4.89*	0.36	6.60	0.66
PC(16:0/18:1)	PC 34:1	760.6	23.60	0.72	21.91	0.72	23.03	0.47
PC(16:0p/20:4)	PlsC 36:4	766.6	0.54	0.03	0.65	0.04	0.59	0.05
PC(15:0/20:4)	PC 35:4	768.5	0.36	0.03	0.42	0.02	0.22*	0.03
PC(17:0/18:1)	PC 35:1	774.6	0.32	0.02	0.24*	0.02	0.31	0.02
PC(14:0/22:6)	PC 36:6	778.5	0.15	0.02	0.07*	0.01	0.20	0.03
PC(16:0/20:5)	PC 36:5	780.5	0.77	0.05	0.38*	0.04	1.88*	0.20
PC(16:0/20:4)	PC 36:4	782.6	8.68	0.34	11.92*	0.59	7.29*	0.28
PC(16:0/20:3)	PC 36:3	784.6	3.11	0.15	2.92	0.18	3.17	0.17
PC(18:1/18:1)	PC 36:2	786.6	6.09	0.23	5.19*	0.12	5.92	0.22
PC(18:0/18:2)	PC 36:2	786.6	6.09	0.23	5.19*	0.12	5.92	0.22
PC(18:0/18:1)	PC 36:1	788.6	5.88	0.17	5.03*	0.15	5.99	0.41
PC(16:0p/22:6)	PlsC 38:6	790.6	0.35	0.04	0.21	0.07	0.42	0.07
PC(15:0/22:6)	PC 37:6	792.5	0.25	0.05	0.28	0.01	0.28	0.05
PC(18:1p/20:4)	PlsC 38:5	792.5	0.25	0.05	0.28	0.01	0.28	0.05
PC(18:0p/20:4)	PlsC 38:4	794.6	0.27	0.04	0.44*	0.04	0.23	0.03
PC(16:1/22:6)	PC 38:7	804.5	0.19	0.02	0.10*	0.02	0.23	0.02
PC(16:0/22:6)	PC 38:6	806.6	5.66	0.44	2.37*	0.27	7.05	0.70
PC(16:0/22:5)	PC 38:5	808.6	2.40	0.12	4.55*	0.18	2.72	0.27
PC(18:0/20:5)	PC 38:5	808.6	2.40	0.12	4.55*	0.18	2.72	0.27
PC(18:0/20:4)	PC 38:4	810.6	6.93	0.31	11.12*	0.77	5.11*	0.41
PC(18:0/20:3)	PC 38:3	812.6	1.86	0.12	1.86	0.05	1.72	0.13
PC(18:2/21:6)	PC 38:1	816.5	0.36	0.04	0.28	0.05	0.25	0.03
PC(17:0/22:6)	PC 39:6	820.6	0.16	0.01	0.15	0.02	0.17	0.02
PC(20:4/20:4)	PC 40:8	830.6	0.15	0.02	0.10*	0.01	0.16	0.02
PC(18:1/22:6)	PC 40:7	832.6	1.08	0.10	0.54*	0.06	1.44*	0.11
PC(18:1/22:5)	PC 40:6	834.6	2.59	0.17	1.80*	0.17	3.34*	0.20
PC(18:0/22:5)	PC 40:5	836.6	0.49	0.05	1.38*	0.13	0.47	0.05
PC(18:0/22:4)	PC 40:4	838.6	0.30	0.03	0.55*	0.05	0.21*	0.02
PC(20:4/22:6)	PC 42:10	854.6	0.04	0.01	0.02	0.01	0.05	0.01
PC(22:4/20:4)	PC 42:8	858.6	0.06	0.01	0.09	0.02	0.07	0.01
PC(20:2/22:5)	PC 42:7	860.6	0.06	0.01	0.07	0.01	0.06	0.01
PC(20:1/22:5)	PC 42:6	862.6	0.05	0.01	0.04	0.01	0.06	0.01
PC(22:6/22:6)	PC 44:12	878.6	0.03	0.01	0.01*	0.01	0.04	0.01
PC(22:5/22:6)	PC44:11	880.6	0.00	0.00	0.02*	0.01	0.02	0.01

Table S2: Concentrations of individual molecular species of PE and PlsE in the offspring olfactory mucosa (% of total PE + PlsE). Data are expressed as the mean \pm s.e.m. (n= 6 mice/group). *: Values are significantly different from the control group CON (Mann-Whitney U test; p < 0.05).

Molecular species	PE/PlsE species (sum composition)	PE: neutral loss m/z 141 PlsE: MRM transition	CON		LOW		HIGH	
			mean	sem	mean	sem	mean	sem
			PE(18:1/14:1)	PE 32:2	688.5	0.03	0.03	0.02
PE(16:0/16:1)	PE 32:1	690.5	0.23	0.06	0.19	0.05	0.25	0.06
PE(16:0/16:0)	PE 32:0	692.5	0.18	0.07	0.22	0.05	0.17	0.04
PE(16:1/18:2)	PE 34:3	714.5	0.21	0.14	0.09*	0.02	0.19	0.10
PE(16:0/18:2)	PE 34:2	716.5	1.83	0.44	1.22*	0.19	2.24	0.46
PE(16:0/18:1)	PE 34:1	718.5	4.26	0.56	3.12*	0.26	4.17	0.77
PE(16:0/20:5)	PE 36:5	738.5	0.64	0.13	0.41	0.17	1.20*	0.13
PE(16:0/20:4)	PE 36:4	740.5	7.31	0.25	8.45*	0.60	6.26*	0.63
PE(18:2/18:2)	PE 36:3	742.5	2.16	0.42	1.49*	0.50	2.21	0.86
PE(18:1/18:1)	PE 36:2	744.6	6.46	1.42	4.14*	0.74	5.97	1.03
PE(18:0/18:1)	PE 36:1	746.6	3.36	0.55	2.44*	0.39	3.44	0.56
PE(20:0/16:0)	PE 36:0	748.6	0.45	0.18	0.29	0.12	0.69	0.29
PE(16:1/22:6)	PE 38:7	762.5	0.59	0.11	0.41*	0.09	0.61	0.20
PE(16:0/22:6)	PE 38:6	764.5	14.76	1.53	6.46*	0.67	17.83	2.70
PE(18:1/20:4)	PE38:5	766.5	6.35	0.34	12.37*	0.38	5.73	0.59
PE(18:0/20:4)	PE 38:4	768.6	23.24	1.01	28.38*	1.33	20.33*	1.30
PE(18:1/20:2)	PE 38:3	770.6	1.36	0.28	1.29	0.47	1.34	0.28
PE(18:0/20:1)	PE 38:1	774.6	0.19	0.10	0.13	0.06	0.26	0.11
PE(18:2/22:6)	PE 40:8	788.5	0.46	0.17	0.42	0.11	0.60	0.07
PE(18:1/22:6)	PE 40:7	790.5	4.20	0.31	2.35*	0.23	4.73*	0.19
PE(18:0/22:6)	PE 40:6	792.6	8.77	0.80	5.57*	0.37	11.14*	0.68
PE(18:0/22:5)	PE 40:5	794.6	1.80	0.44	5.18*	0.40	1.35*	0.24
PE(18:0/22:4)	PE 40:4	796.6	1.75	0.25	2.75*	0.33	1.06*	0.18
PE(20:1/22:5)	PE 42:6	820.6	0.09	0.07	0.17	0.08	0.09	0.03
PE(16:0p/20:4)	160p/20:4	722 ->303	3.31	0.38	4.88*	0.18	2.74*	0.21
PE(16:0p/20:3)	160p/20:3	724 ->305	0.22	0.02	0.31*	0.02	0.16*	0.01
PE(16:0p/22:6)	160p/22:6	746 ->327	1.36	0.26	0.69*	0.05	1.55	0.15
PE(18:1p/20:4)	181p/20:4	748 -> 303	0.98	0.15	1.36*	0.06	0.72*	0.05
PE(16:0p/22:5)	160p/22:5	748 -> 329	0.40	0.05	1.14*	0.07	0.36	0.16
PE(18:0p/20:4)	180p/20:4	750 -> 303	1.53	0.14	2.04*	0.07	1.24*	0.11
PE(16:0p/22:4)	160p/22:4	750 -> 331	0.88	0.09	1.73*	0.10	0.54*	0.03
PE(18:1p/22:6)	181p/22:6	772 -> 327	0.31	0.05	0.15*	0.01	0.34	0.03
PE(18:0p/22:6)	180p/22:6	774 -> 327	0.34	0.08	0.16*	0.02	0.41	0.05

Table S3: Concentrations of individual molecular species of PI in the offspring olfactory mucosa (% of total PI). Data are expressed as the mean \pm s.e.m. (n= 6 mice/group). *: Values are significantly different from the control group CON (Mann-Whitney U test; $p < 0.05$).

Molecular species	PI species (sum composition)	Ion precursor m/z 271 (InsP-H ₂ O) [M-H] ⁻	CON		LOW		HIGH	
			mean	sem	mean	sem	mean	sem
PI(16:0/14:0)	PI 30:0	781.5	0.20	0.08	0.25	0.05	0.15	0.04
PI(16:0/16:0)	PI 32:0	809.5	5.65	0.65	5.23	0.66	4.56	0.50
PI(16:0/18:2)	PI 34:2	833.5	0.81	0.16	0.45	0.10	1.13	0.22
PI(16:0/18:1)	PI 34:1	835.5	4.77	0.41	3.40*	0.43	4.27	0.70
PI(18:0/16:0)	PI 34:0	837.5	4.38	0.59	4.96	0.50	4.55	0.43
PI(16:0/20:4)	PI 36:4	857.5	9.47	0.70	10.18	0.30	9.11	0.40
PI(16:0/20:3)	PI 36:3	859.5	1.17	0.35	0.82	0.26	1.00	0.12
PI(18:0/18:2)	PI 36:2	861.5	1.69	0.17	1.10*	0.17	1.26	0.33
PI(18:0/18:1)	PI 36:1	863.6	1.49	0.23	1.11	0.30	1.39	0.26
PI(18:0p/20:4)	PI 38:4	869.6	0.25	0.05	0.41	0.10	0.12	0.04
PI(17:0/20:4)	PI 37:4	871.5	0.37	0.07	0.30	0.11	0.28	0.13
PI(16:0/22:6)	PI 38:6	881.5	6.91	0.55	3.15*	0.18	8.80	0.77
PI(16:0/22:5)	PI 38:5	883.5	3.41	0.43	4.92	0.56	3.93	0.49
PI(18:0/20:4)	PI 38:4	885.5	44.06	0.82	51.72*	0.91	39.92*	0.93
PI(18:0/22:6)	PI 40:6	909.5	14.01	0.81	6.25*	0.86	18.15*	0.92
PI(18:0/22:5)	PI 40:5	911.6	0.51	0.17	4.39*	0.28	0.94	0.34
PI(18:0/22:4)	PI 40:4	913.6	0.86	0.19	1.35	0.23	0.44	0.17

Table S4: Concentrations of individual molecular species of PS in the offspring olfactory mucosa (% of total PS). Data are expressed as the mean \pm s.e.m. (n= 6 mice/group). *: Values are significantly different from the control group CON (Mann-Whitney U test; $p < 0.05$).

Molecular species	PS species (sum composition)	Neutral loss m/z 185 [M+H] ⁺	CON		LOW		HIGH	
			mean	sem	mean	sem	mean	sem
PS(16:0/18:1)	PS 34:1	762.5	2.60	0.62	5.17	2.59	3.36	1.10
PS(16:0/20:4)	PS 36:4	784.5	1.20	0.47	1.22	0.48	1.00	0.53
PS(18:0/18:2)	PS 36:2	788.5	6.61	1.15	7.02	1.98	6.59	2.36
PS(18:1/18:1)								
PS(18:0/18:1)	PS 36:1	790.6	29.28	4.56	28.72	6.75	28.00	4.17
PS(16:0/20:1)								
PS(16:0/22:6)	PS 38:6	808.5	16.54	1.88	8.29	3.12	17.32	2.10
PS(16:0/22:5)	PS 38:5	810.5	2.89	1.96	11.47*	2.12	3.68	2.27
PS(18:0/20:4)	PS 38:4	812.5	15.78	1.43	20.43	3.70	12.99	1.99
PS(18:1/22:6)	PS 40:7	834.5	0.57	0.35	0.50	0.27	1.56	0.69
PS(18:0/22:6)	PS 40:6	836.5	17.46	2.82	6.59*	1.78	20.87	3.28
PS(18:0/22:5)	PS 40:5	838.6	2.91	1.07	7.61	2.04	2.38	1.18
PS(18:0/22:4)	PS 40:4	840.6	4.16	0.54	2.97	1.53	2.24	1.15

Table S5: Concentrations of individual molecular species of SM in the offspring olfactory mucosa (% of total SM). Data are expressed as the mean \pm s.e.m. (n= 6 mice/group). *: Values are significantly different from the control group CON (Mann-Whitney U test; $p < 0.05$).

Molecular species	SM species (sum composition)	Ion precursor m/z 184 [M+H] ⁺	CON		LOW		HIGH	
			mean	sem	mean	sem	mean	sem
SM(d17:1/16:0)	SM 33:1	689.6	0.35	0.11	0.45	0.30	0.27	0.08
SM(d18:1/16:1)	SM 34:2	701.6	0.41	0.15	0.72	0.37	0.46	0.06
SM(d16:0/18:1)	SM 34:1	703.6	30.41	2.80	36.79	4.38	31.49	3.07
SM(d14:0/20:0)	SM 34:0	705.6	2.51	0.37	1.48	0.53	1.22	0.56
SM(d18:1/17:0)	SM 35:1	717.6	0.36	0.11	0.34	0.12	0.46	0.08
SM(d18:2/18:0)	SM 36:2	729.6	0.26	0.06	0.36	0.08	0.26	0.07
SM(d16:0/20:1)	SM 36:1	731.6	13.29	0.68	13.56	0.94	13.41	0.33
SM(d14:1/23:0)	SM 37:1	745.6	0.21	0.04	0.16	0.07	0.24	0.07
SM(d18:2/20:2)	SM 38:4	753.6	0.08	0.03	0.09	0.04	0.06	0.02
SM(d14:1/24:2)	SM 38:3	755.6	0.03	0.01	0.06	0.06	0.02	0.02
SM(d18:1/20:0)	SM 38:1	759.6	6.01	0.43	5.58	0.55	5.86	0.67
SM(d22:0/16:0)	SM 38:0	761.7	0.29	0.13	0.57	0.26	0.30	0.16
SM(d15:0/24:1)	SM 39:1	773.7	0.12	0.02	0.22	0.10	0.20	0.08
SM(d18:2/22:2)	SM 40:4	781.6	0.05	0.01	0.08	0.03	0.06	0.03
SM(d22:2/18:0)	SM 40:2	785.7	0.71	0.10	0.71	0.18	0.52	0.15
SM(d18:1/22:0)	SM 40:1	787.7	8.78	0.62	10.01	1.16	9.53	0.73
SM(d18:1/23:1)	SM 41:2	799.7	0.30	0.09	0.13	0.07	0.24	0.08
SM(d17:1/24:0)	SM 41:1	801.7	0.49	0.06	0.45	0.12	0.70	0.14
SM(d18:1/24:4)	SM 42:5	807.6	0.13	0.05	0.08	0.04	0.11	0.06
SM(d20:0/22:4)	SM 42:4	809.7	0.14	0.06	0.04	0.02	0.02*	0.02
SM(d18:1/24:2)	SM 42:3	811.7	2.63	0.24	2.07	0.48	1.82	0.35
SM(d18:1/24:1)	SM 42:2	813.7	20.06	2.49	17.75	2.43	19.61	1.48
SM(d18:1/24:0)								
SM(d18:0/24:1)	SM 42:1	815.7	12.04	0.69	8.27*	1.05	12.97	1.31
SM(d16:0/26:1)								
SM(d18:0/26:2)	SM 44:2	841.7	0.32	0.09	0.04*	0.02	0.17	0.07

Table S6: Concentrations of individual molecular species of LPC in the offspring olfactory mucosa (% of total LPC). Data are expressed as the mean \pm s.e.m. (n= 6 mice/group). *: Values are significantly different from the control group CON (Mann-Whitney U test; p < 0.05).

Molecular species	Ion precursor m/z 184 [M+H] ⁺	CON		LOW		HIGH	
		mean	sem	mean	sem	mean	sem
LPC(16:1)	494.3	0.37	0.22	0.48	0.19	1.53	0.64
LPC(16:0)	496.3	59.44	2.44	60.22	2.27	59.21	1.11
LPC(18:2)	520.3	2.51	0.68	2.46	0.70	2.76	0.28
LPC(18:1)	522.4	10.49	1.10	9.88	1.56	11.96	1.10
LPC(18:0)	524.4	23.63	1.70	22.79	1.36	19.18	1.69
LPC(20:4)	544.3	2.21	0.63	2.71	0.68	3.39	0.78
LPC(20:2)	548.4	0.14	0.06	0.44	0.12	0.06	0.03
LPC(20:1)	550.4	0.26	0.17	0.35	0.31	0.30	0.14
LPC(22:6)	568.3	0.95	0.19	0.66	0.20	1.60	0.33

Table S7: Concentrations of individual molecular species of PC in the offspring olfactory bulb (% of total PC + PlsC). Data are expressed as the mean \pm s.e.m. (n= 6 mice/group). *: Values are significantly different from the control group CON (Mann-Whitney U test; $p < 0.05$).

Molecular species	PC/PlsC species (sum composition)	Ion precursor m/z 184 [M+H] ⁺	CON		LOW		HIGH	
			mean	sem	mean	sem	mean	sem
PC(16:0/14:0)	PC 30:0	706.5	1.82	0.17	1.82	0.04	1.59	0.22
PC(15:0/16:1)	PC 31:1	718.5	0.15	0.02	0.18	0.01	0.16	0.04
PC(16:0p/16:0)	PlsC 32:0	720.5	0.35	0.05	0.38	0.01	0.31	0.06
PC(15:0/16:0)	PC 31:0	730.5	0.10	0.02	0.12	0.01	0.08*	0.01
PC(16:1/16:1)	PC 32:2	730.5	0.10	0.02	0.12	0.01	0.08*	0.01
PC(16:0/16:1)	PC 32:1	732.5	3.50	0.32	3.72	0.07	3.43	0.27
PC(16:0/16:0)	PC 32:0	734.6	25.28	0.43	25.49	0.25	25.36	3.43
PC(17:1/16:0)	PC 33:1	746.6	0.71	0.08	0.71	0.01	0.72	0.04
	PlsC 34:0							
PC(16:1/18:1)	PC 34:2	758.6	1.62	0.09	1.51	0.06	1.45*	0.09
PC(16:0/18:1)	PC 34:1	760.6	33.03	0.67	32.71	0.22	32.56	1.18
PC(16:0p/20:4)	PlsC 36:4	766.6	0.41	0.05	0.42	0.07	0.46	0.12
PC(19:1/16:0)	PC 35:1	774.6	0.29	0.04	0.25	0.03	0.29	0.08
PC(16:0/20:4)	PC 36:4	782.6	5.33	0.27	6.08*	0.10	4.72	0.66
PC(18:2/18:2)								
PC(18:1/18:2)	PC 36:3	784.6	0.65	0.07	0.59	0.03	0.78	0.11
PC(16:0/20:3)								
PC(18:1/18:1)	PC 36:2	786.6	2.77	0.15	2.67	0.04	2.74	0.20
PC(18:0/18:1)	PC 36:1	788.6	8.11	0.29	7.70*	0.04	8.70*	0.63
PC(16:0p/22:6)	PlsC 38:6	790.6	0.20	0.10	0.19	0.04	0.23	0.07
PC(16:1/22:6)	PC 38:7	804.5	0.11	0.01	0.09	0.01	0.13	0.03
PC(16:0/22:6)	PC 38:6	806.6	3.82	0.24	2.01*	0.10	4.51*	0.36
PC(18:1/20:4)	PC 38:5	808.6	1.87	0.14	3.69*	0.09	1.68	0.29
PC(18:0/20:4)								
PC(16:0/22:4)	PC 38:4	810.6	5.58	0.33	6.06*	0.05	5.50	0.79
PC(20:1/18:1)	PC 38:2	814.6	0.49	0.04	0.48	0.03	0.45*	0.01
PC(18:0/20:1)	PC 38:1	816.5	0.29	0.04	0.25	0.01	0.26	0.09
PC(20:4/20:4)	PC 40:8	830.6	0.08	0.01	0.08	0.01	0.07	0.03
PC(18:1/22:6)	PC 40:7	832.6	0.83	0.09	0.49*	0.02	0.87	0.12
PC(18:0/22:6)	PC 40:6	834.6	1.87	0.12	1.45*	0.03	2.31*	0.33
PC(18:0/22:4)	PC 40:4	838.6	0.49	0.06	0.65*	0.03	0.42*	0.03
PC(20:4/22:6)	PC 42:10	854.6	0.07	0.02	0.04	0.01	0.09	0.03
PC(22:4/20:4)	PC 42:8	858.6	0.07	0.02	0.09*	0.01	0.02*	0.00
PC(18:1/24:0)	PC 42:1	872.7	0.05	0.01	0.03	0.01	0.05	0.02
PC(22:6/22:6)	PC 44:12	878.6	0.04	0.02	0.02*	0.01	0.06	0.02
PC(22:5/22:6)	PC44:11	880.6	0.01	0.01	0.03*	0.01	0.01	0.01

Table S8: Concentrations of individual molecular species of PE in the offspring olfactory bulb (% of total PE + PlsE). Data are expressed as the mean \pm s.e.m. (n= 6 mice/group). *: Values are significantly different from the control group CON (Mann-Whitney U test; $p < 0.05$).

Molecular species	PE/PlsE species (sum composition)	PE: neutral loss m/z 141 PlsE: MRM transition	CON		LOW		HIGH	
			mean	sem	mean	sem	mean	sem
			PE(15:0/15:0)	PE 30:0	664.5	0.01	0.01	0.01
PE(16:0/16:1)	PE 32:1	690.5	0.12	0.03	0.10	0.02	0.13	0.05
PE(16:0/16:0)	PE 32:0	692.5	0.16	0.07	0.23	0.04	0.17	0.04
PE(16:1/18:1)	PE 34:2	716.5	0.45	0.05	0.36*	0.08	0.51	0.10
PE(16:0/18:1)	PE 34:1	718.5	5.16	0.27	4.70*	0.12	4.78	0.46
PE(18:0/16:0)	PE 34:0	720.6	0.83	0.09	0.76	0.10	0.78	0.09
PE(16:1/20:4)	PE 36:5	738.5	0.13	0.04	0.16	0.05	0.20	0.07
PE(16:0/20:4)	PE 36:4	740.5	3.26	0.27	3.85*	0.26	2.89*	0.17
PE(18:1/18:2)	PE 36:3	742.5	0.40	0.12	0.36	0.11	0.60*	0.12
PE(18:1/18:1)	PE 36:2	744.6	4.67	0.40	3.79*	0.21	5.31*	0.30
PE(18:0/18:1)	PE 36:1	746.6	3.33	0.24	3.35	0.39	3.38	0.32
PE(16:1/22:6)	PE 38:7	762.5	0.41	0.08	0.28*	0.05	0.38	0.10
PE(16:0/22:6)	PE 38:6	764.5	13.43	0.77	7.54*	0.95	15.01*	1.10
PE(18:1/20:4)	PE38:5	766.5	3.35	0.19	10.08*	0.96	2.80	0.52
PE(18:0/20:4)	PE 38:4	768.6	20.54	0.92	21.51	0.90	17.98*	0.67
PE(20:1/18:1)	PE 38:2	772.6	0.14	0.09	0.05	0.05	0.17	0.16
PE(18:0/20:1)								
PE(20:0/18:1)	PE 38:1	774.6	0.45	0.08	0.33	0.14	0.46	0.16
PE(18:2/22:6)	PE 40:8	788.5	0.34	0.10	0.41	0.10	0.32	0.08
PE(18:1/22:6)	PE 40:7	790.5	3.98	0.28	2.66*	0.13	4.74*	0.19
PE(18:0/22:6)	PE 40:6	792.6	24.09	0.48	13.98*	0.95	26.24*	0.57
PE(18:0/22:5)	PE 40:5	794.6	1.29	0.46	10.17*	0.81	0.77	0.36
PE(18:0/22:4)	PE 40:4	796.6	3.00	0.44	3.62*	0.23	2.53*	0.35
PE(20:4/22:6)	PE 42:10	812.5	0.25	0.07	0.13*	0.05	0.21	0.06
PE(22:4/20:4)	PE 42:8	816.6	0.30	0.06	0.48*	0.13	0.20*	0.03
PE(24:5/18:0)	PE 42:5	822.6	0.12	0.06	0.29*	0.11	0.09	0.04
PE(24:4/18:0)	PE 42:4	824.6	0.14	0.06	0.21	0.09	0.17	0.05
PE(22:6/22:6)	PE 44:12	836.5	0.17	0.04	0.05*	0.03	0.25	0.07
PE(22:5/22:6)	PE 44:11	838.5	0.05	0.03	0.12*	0.02	0.12*	0.06
PE(22:4/22:6)	PE 44:10	840.6	0.80	0.15	0.70	0.16	0.72	0.10
PE(16:0p/20:4)	160p/20:4	722 ->303	1.43	0.07	1.89*	0.15	1.17*	0.09
PE(16:0p/20:3)	160p/20:3	724 ->305	0.11	0.01	0.14*	0.02	0.09*	0.01
PE(18:0p/18:1)	180p/18:1	728 ->281	0.89	0.44	0.80	0.07	1.08	0.09
PE(16:0p/22:6)	160p/22:6	746 ->327	1.25	0.07	0.74*	0.06	1.39	0.13
PE(18:1p/20:4)	181p/20:4	748 -> 303	0.61	0.006	0.86*	0.037	0.48*	0.013
PE(16:0p/22:5)	160p/22:5	748 -> 329	0.23	0.005	1.05*	0.043	0.21	0.009
PE(18:0p/20:4)	180p/20:4	750 -> 303	1.55	0.017	1.69	0.072	1.31*	0.035
PE(16:0p/22:4)	160p/22:4	750 -> 331	1.30	0.018	1.82*	0.083	0.96*	0.030
PE(18:1p/22:6)	181p/22:6	772 -> 327	0.36	0.010	0.20*	0.008	0.39	0.014
PE(18:0p/22:6)	180p/22:6	774 -> 327	0.92	0.008	0.50*	0.021	0.99*	0.022

Table S9: Concentrations of individual molecular species of PI in the offspring olfactory bulb (% of total PI). Data are expressed as the mean \pm s.e.m. (n= 6 mice/group). *: Values are significantly different from the control group CON (Mann-Whitney U test; p < 0.05).

Molecular species	PI species (sum composition)	Ion precursor m/z 271 (InsP-H ₂ O) [M-H] ⁻	CON		LOW		HIGH	
			mean	sem	mean	sem	mean	sem
PI(16:0/16:0)	PI 32:0	809.5	3.44	0.56	4.02	0.59	4.29	0.22
PI(16:1/18:1)	PI 34:2	833.5	0.09	0.04	0.14	0.04	0.08	0.04
PI(16:0/18:1)	PI 34:1	835.5	1.47	0.15	2.24*	0.20	1.71	0.33
PI(18:0/16:0)	PI 34:0	837.5	4.48	0.45	5.30	0.41	4.76	0.65
PI(16:2/20:4)	PI 36:6	853.5	0.01	0.01	0.00	0.00	0.01	0.01
PI(16:0/20:5)	PI 36:5	855.5	0.13	0.04	0.11	0.04	0.38*	0.06
PI(16:0/20:4)	PI 36:4	857.5	11.25	0.67	10.91	0.28	11.69	0.81
PI(18:0/18:1)	PI 36:1	863.6	0.46	0.14	0.33	0.08	0.63	0.19
PI(17:0/20:4)	PI 37:4	871.5	0.51	0.13	0.51	0.16	0.32	0.14
PI(16:1/22:6)	PI 38:7	879.5	0.02	0.01	0.02	0.02	0.10	0.06
PI(16:0/22:6)	PI 38:6	881.5	3.65	0.13	1.53*	0.35	3.89	0.36
PI(18:1/20:4)	PI 38:5	883.5	8.50	0.68	9.66	0.73	7.68	0.43
PI(18:0/20:5)								
PI(18:0/20:4)	PI 38:4	885.5	56.52	0.94	56.79	0.71	54.13	1.37
PI(20:4/20:4)	PI 40:8	905.5	0.10	0.03	0.12	0.04	0.14	0.05
PI(18:1/22:6)	PI 40:7	907.5	0.45	0.14	0.27	0.09	0.23	0.10
PI(18:0/22:6)	PI 40:6	909.5	7.95	0.47	4.18*	0.28	9.09	0.69
PI(18:0/22:5)	PI 40:5	911.6	0.59	0.21	3.08*	0.23	0.26	0.17
PI(18:0/22:4)	PI 40:4	913.6	0.38	0.14	0.80	0.23	0.61	0.31

Table S10: Concentrations of individual molecular species of PS in the offspring olfactory bulb (% of total PS). Data are expressed as the mean \pm s.e.m. (n= 6 mice/group). *: Values are significantly different from the control group CON (Mann-Whitney U test; p < 0.05).

Molecular species	PS species (sum composition)	Neutral loss <i>m/z</i> 185 [M+H] ⁺	CON		LOW		HIGH	
			mean	sem	mean	sem	mean	sem
PS(16:0/18:1)	PS 34:1	762.5	9.53	0.78	7.10	1.47	9.54	1.07
PS(18:0/17:0)	PS 35:0	778.6	0.13	0.09	0.23	0.14	0.20	0.10
PS(18:1/18:1)	PS 36:2	788.5	10.05	1.85	8.97	2.44	11.41	1.28
PS(18:0/18:1)	PS 36:1	790.6	17.31	3.41	19.94	3.45	18.51	1.75
PS(16:0/20:1)								
PS(15:1/22:4)	PS 37:5	796.5	0.04	0.01	0.02*	0.00	0.04	0.02
PS(16:0/22:6)	PS 38:6	808.5	10.35	2.34	4.93	1.41	8.77	1.97
PS(18:0/20:3)	PS 38:3	814.6	2.16	0.88	0.10*	0.05	0.36*	0.30
PS(18:0/22:6)	PS 40:6	836.5	44.10	3.32	28.57*	1.92	42.24	3.24
PS(18:0/22:5)	PS 40:5	838.6	2.05	1.38	22.77*	4.01	3.40	1.92
PS(18:0/22:4)	PS 40:4	840.6	4.26	0.92	7.37	2.54	5.53	1.89

Table S11: Concentrations of individual molecular species of SM in the offspring olfactory bulb (% of total SM). Data are expressed as the mean \pm s.e.m. (n= 6 mice/group). *: Values are significantly different from the control group CON (Mann-Whitney U test; $p < 0.05$).

Molecular species	SM species (sum composition)	Ion precursor m/z 184 [M+H] ⁺	CON		LOW		HIGH	
			mean	sem	mean	sem	mean	sem
SM(d18:1/16:0)	SM 34:1	706.5	15.57	0.55	18.23	2.20	15.46	2.81
SM(d18:2/18:0)	SM 36:2	730.5	1.13	0.15	1.17	0.36	1.39	0.22
SM(d18:0/18:1)	SM 36:1	732.5	63.07	0.77	61.72	2.55	67.34	3.07
SM(d15:0/23:1)	SM 38:1	754.5	3.31	0.16	3.35	0.52	2.63*	0.22
SM(d25:0/15:1)	SM 40:1	768.5	3.65	0.31	3.38	0.46	2.74	0.44
SM(d18:1/24:2)	SM 42:3	784.6	0.78	0.10	0.72	0.16	0.53	0.11
SM(d18:1/24:1)	SM 42:2	786.6	10.10	0.47	9.26	0.62	7.32*	0.73
SM(d18:1/24:0)	SM 42:1	788.6	2.39	0.41	2.17	0.52	2.59	0.55

Table S12: Concentrations of individual molecular species of LPC in the offspring olfactory bulb (% of total LPC). Data are expressed as the mean \pm s.e.m. (n= 6 mice/group). *: Values are significantly different from the control group CON (Mann-Whitney U test; $p < 0.05$).

Molecular species	Ion precursor m/z 184 [M+H] ⁺	CON		LOW		HIGH	
		mean	sem	mean	sem	mean	sem
LPC(16:1)	494.3	0.56	0.19	0.69	0.23	0.74	0.28
LPC(16:0)	496.3	58.57	1.06	57.02	2.77	52.27	2.57
LPC(18:2)	520.3	0.30	0.14	1.06	0.35	1.15	0.55
LPC(18:1)	522.4	16.11	0.96	14.16	1.26	16.86	0.53
LPC(18:0)	524.4	14.38	0.78	19.24*	1.61	14.60	2.15
LPC(20:4)	544.3	5.89	1.03	6.10	0.85	7.89	1.24
LPC(22:6)	568.3	3.85	0.48	1.25*	0.29	6.13	0.99
LPC(22:4)	572.4	0.34	0.15	0.49	0.12	0.36	0.15