

Supplemental table S1 Fatty acids composition of maternal erythrocyte membrane during pregnancy grouped by neurodevelopment outcome

	ASQ-3(Mean ± SD ^a)									
	Communication		Gross motor		Fine motor		Problem solving		Personal-social	
	normal	delayed ^b	normal	delayed	normal	delayed	normal	delayed	normal	delayed
	(N=185)	(N=57)	(N=182)	(N=60)	(N=182)	(N=60)	(N=211)	(N=31)	(N=199)	(N=43)
Total SFA	29.79 ± 5.97	29.25 ± 6.20	29.40 ± 5.88	30.46 ± 6.41	29.54 ± 6.05	30.06 ± 5.94	29.73 ± 5.94	29.19 ± 6.59	29.85 ± 6.21	28.81 ± 4.99
Total MUFA	21.58 ± 3.85	22.40 ± 4.73	21.72 ± 4.32	21.96 ± 3.29	21.90 ± 4.11	21.41 ± 4.00	21.73 ± 3.59	22.07 ± 6.60	21.80 ± 4.27	21.65 ± 3.12
Total n-6 PUFA	35.18 ± 4.31	34.96 ± 4.33	35.29 ± 4.24	34.64 ± 4.48	35.26 ± 4.41	34.72 ± 3.97	35.15 ± 4.24	34.99 ± 4.82	34.98 ± 4.38	35.81 ± 3.92
LA	15.12 ± 2.40	15.00 ± 2.58	15.06 ± 2.33	15.17 ± 2.76	15.25 ± 2.53	14.59 ± 2.09	15.08 ± 2.42	15.15 ± 2.60	15.09 ± 2.48	15.09 ± 2.29
GLA	0.28 ± 0.34	0.28 ± 0.30	0.28 ± 0.34	0.27 ± 0.30	0.29 ± 0.37	0.23 ± 0.17	0.28 ± 0.32	0.28 ± 0.41	0.28 ± 0.33	0.24 ± 0.33
DGLA	2.46 ± 0.61	2.38 ± 0.61	2.48 ± 0.63*	2.30 ± 0.53*	2.46 ± 0.65	2.38 ± 0.46	2.42 ± 0.60	2.56 ± 0.70	2.44 ± 0.64	2.41 ± 0.47
AA	16.79 ± 3.06	16.74 ± 3.17	16.93 ± 3.01	16.32 ± 3.28	16.73 ± 3.12	16.92 ± 2.98	16.83 ± 3.04	16.41 ± 3.39	16.61 ± 3.10	17.57 ± 2.89
Total n-3 PUFA	9.80 ± 2.58	9.92 ± 2.96	9.84 ± 2.68	9.77 ± 2.65	9.83 ± 2.73	9.81 ± 2.51	9.78 ± 2.70	10.14 ± 2.44	9.76 ± 2.71	10.14 ± 2.46
ALA	0.41 ± 0.60	0.27 ± 0.19	0.37 ± 0.56	0.38 ± 0.47	0.37 ± 0.56	0.37 ± 0.47	0.35 ± 0.50	0.53 ± 0.71	0.39 ± 0.58	0.31 ± 0.26

EPA	0.99 ± 0.50	1.05 ± 0.49	1.04 ± 0.50*	0.89 ± 0.46*	1.01 ± 0.51	1.01 ± 0.46	1.00 ± 0.50	1.06 ± 0.51	0.99 ± 0.50	1.07 ± 0.47
DPA	1.23 ± 0.60	1.24 ± 0.60	1.23 ± 0.59	1.23 ± 0.62	1.23 ± 0.59	1.24 ± 0.63	1.25 ± 0.59	1.14 ± 0.64	1.22 ± 0.60	1.29 ± 0.58
DHA	7.48 ± 2.73	7.55 ± 2.83	7.59 ± 2.69	7.23 ± 2.92	7.47 ± 2.68	7.59 ± 2.96	7.53 ± 2.74	7.31 ± 2.86	7.45 ± 2.77	7.73 ± 2.68
n-6/n-3 PUFA ratio	3.68 ± 0.98	3.64 ± 0.92	3.63 ± 0.93	3.79 ± 1.06	3.69 ± 0.95	3.63 ± 1.01	3.68 ± 0.97	3.63 ± 0.93	3.69 ± 1.01	3.58 ± 0.74
AA/EPA ratio	20.60 ± 9.31	19.87 ± 10.09	19.82 ± 9.31	22.26 ± 9.85	20.54 ± 9.82	20.07 ± 8.47	20.63 ± 9.54	19.00 ± 9.12	20.48 ± 9.27	20.16 ± 10.53
AA/DHA ratio	2.50 ± 0.82	2.45 ± 0.74	2.47 ± 0.79	2.54 ± 0.82	2.48 ± 0.79	2.51 ± 0.81	2.49 ± 0.80	2.47 ± 0.76	2.49 ± 0.82	2.47 ± 0.67

a. SD: standard deviation

b. Children with scores lower than the 25th percentile were considered potentially delayed in that domain. Otherwise, they were normal.

*: $p < 0.05$.

Supplemental table S2 Linear association between maternal PUFAs during pregnancy and children neurodevelopment at 2 years of age

a

	[β (95%)] ^b				
	communication	gross motor	fine motor	problem solving	personal-social
Total n-6 PUFA (ref T1) ^c					
T2	0.01 (-4.18, 4.20)	-0.35 (-2.54, 1.83)	-1.76 (-4.30, 0.78)	-0.23 (-3.07, 2.62)	-3.97 (-7.68, -0.27)
T3	0.54 (-3.49, 4.57)	1.08 (-1.02, 3.18)	0.65 (-1.80, 3.10)	0.17 (-2.57, 2.91)	-2.87 (-6.43, 0.70)
<i>p</i> for trend	0.810	0.386	0.796	0.930	0.077
LA (ref T1)					
T2	-0.86 (-5.03, 3.31)	-0.46 (-2.65, 1.73)	-0.60 (-3.13, 1.93)	-1.42 (-4.23, 1.40)	-1.22 (-4.97, 2.52)
T3	2.48 (-1.60, 6.56)	0.71 (-1.43, 2.86)	2.27 (-0.21, 4.74)	1.89 (-0.86, 4.64)	-1.22 (-4.88, 2.44)
<i>p</i> for trend	0.221	0.499	0.067	0.165	0.519
GLA (ref T1)					
T2	-0.39 (-4.46, 3.67)	-0.75 (-2.87, 1.38)	-1.11 (-3.58, 1.36)	0.41 (-2.35, 3.17)	0.17 (-3.43, 3.77)
T3	-1.10 (-5.30, 3.10)	-0.78 (-2.98, 1.42)	0.80 (-1.76, 3.36)	0.73 (-2.13, 3.58)	3.33 (-0.39, 7.06)
<i>p</i> for trend	0.608	0.482	0.553	0.617	0.081
DGLA (ref T1)					
T2	-2.19 (-6.27, 1.89)	-0.24 (-2.38, 1.90)	-2.57 (-5.05, -0.10)	0.09 (-2.67, 2.84)	-2.23 (-5.86, 1.40)
T3	-1.00 (-5.17, 3.17)	0.27 (-1.92, 2.46)	-1.06 (-3.59, 1.48)	-2.46 (-5.28, 0.35)	-3.34 (-7.05, 0.37)
<i>p</i> for trend	0.619	0.818	0.385	0.092	0.075
AA (ref T1)					
T2	-2.32 (-6.42, 1.79)	0.60 (-1.56, 2.75)	-1.25 (-3.74, 1.25)	-0.34 (-3.14, 2.45)	-2.68 (-6.31, 0.95)
T3	-1.17 (-5.31, 2.97)	0.34 (-1.83, 2.51)	-2.49 (-5.00, 0.03)	-0.56 (-3.37, 2.26)	-4.33 (-7.99, -0.66)

<i>p</i> for trend	0.479	0.705	0.056	0.696	0.019
Total n-3 PUFA (ref T1)					
T2	-0.81 (-4.83, 3.22)	-0.01 (-2.12, 2.10)	-2.55 (-4.99, -0.11)	-1.46 (-4.19, 1.27)	-1.38 (-4.98, 2.22)
T3	-2.02 (-6.03, 1.99)	0.64 (-1.46, 2.75)	-0.87 (-3.30, 1.56)	-0.68 (-3.40, 2.05)	-0.38 (-3.97, 3.20)
<i>p</i> for trend	0.322	0.547	0.492	0.629	0.838
ALA (ref T1)					
T2	0.54 (-3.60, 4.68)	1.64 (-0.52, 3.80)	1.58 (-0.95, 4.10)	-0.08 (-2.90, 2.74)	1.77 (-1.93, 5.47)
T3	1.87 (-2.19, 5.94)	1.65 (-0.47, 3.77)	1.09 (-1.39, 3.57)	-0.90 (-3.66, 1.86)	1.11 (-2.52, 4.74)
<i>p</i> for trend	0.348	0.200	0.543	0.486	0.686
EPA (ref T1)					
T2	0.98 (-3.09, 5.05)	2.42 (0.29, 4.54)	0.40 (-2.10, 2.90)	1.21 (-1.58, 3.99)	0.65 (-3.01, 4.32)
T3	-3.00 (-7.29, 1.28)	1.71 (-0.53, 3.94)	-1.22 (-3.85, 1.41)	0.31 (-2.62, 3.24)	-0.87 (-4.73, 2.98)
<i>p</i> for trend	0.084	0.347	0.252	0.960	0.532
DPA (ref T1)					
T2	-1.41 (-5.52, 2.69)	0.55 (-1.60, 2.71)	-1.38 (-3.89, 1.13)	-0.19 (-2.97, 2.60)	-3.20 (-6.85, 0.46)
T3	0.99 (-3.31, 5.29)	0.44 (-1.81, 2.70)	-1.70 (-4.33, 0.93)	-1.94 (-4.86, 0.98)	-2.85 (-6.67, 0.98)
<i>p</i> for trend	0.637	0.704	0.208	0.187	0.152
DHA (ref T1)					
T2	1.96 (-2.09, 6.01)	0.19 (-1.94, 2.33)	0.22 (-2.25, 2.69)	2.74 (-0.01, 5.48)	-1.05 (-4.69, 2.59)
T3	-1.47 (-5.73, 2.79)	-0.14 (-2.39, 2.10)	-2.24 (-4.83, 0.36)	0.50 (-2.38, 3.38)	-1.64 (-5.46, 2.19)
<i>p</i> for trend	0.509	0.902	0.094	0.721	0.399
n-6/n-3 PUFA ratio (ref T1)					
T2	-0.16 (-4.36, 4.04)	0.15 (-2.05, 2.36)	1.39 (-1.18, 3.95)	-0.46 (-3.31, 2.39)	-2.76 (-6.50, 0.98)
T3	2.16 (-2.10, 6.43)	0.40 (-1.84, 2.64)	1.91 (-0.69, 4.52)	1.31 (-1.59, 4.20)	-0.39 (-4.19, 3.42)
<i>p</i> for trend	0.310	0.723	0.152	0.362	0.877
AA/EPA ratio (ref T1)					

T2	2.98 (-1.07, 7.04)	-0.68 (-2.81, 1.44)	0.51 (-1.98, 2.99)	1.41 (-1.35, 4.16)	0.13 (-3.50, 3.77)
T3	0.92 (-3.29, 5.14)	-1.65 (-3.85, 0.56)	-0.64 (-3.22, 1.94)	-0.66 (-3.52, 2.20)	-1.37 (-5.15, 2.41)
<i>p</i> for trend	0.721	0.142	0.601	0.601	0.461
AA/DHA ratio (ref T1)					
T2	-1.58 (-5.74, 2.57)	-0.82 (-2.99, 1.36)	-0.35 (-2.89, 2.20)	-0.37 (-3.20, 2.45)	-0.35 (-4.07, 3.37)
T3	0.76 (-3.52, 5.03)	-0.26 (-2.50, 1.99)	-0.59 (-3.21, 2.03)	-0.83 (-3.75, 2.08)	-1.19 (-5.02, 2.64)
<i>p</i> for trend	0.607	0.915	0.665	0.573	0.530

a. The model was adjusted for maternal age, prenatal BMI, maternal education level, per capita monthly household income, parity, mode of delivery, gestational age, GDM, child's sex, birthweight, and breastfeeding pattern.

b. CI: confidence interval.

c. Ref: reference; The fatty acids in the table were divided into T1, T2 and T3 groups according to content, with the lowest content group as reference.

Supplemental table S3 Associations between maternal PUFAs status during pregnancy and children neurodevelopment at 2 years of age^a

	[OR (95%)]				
	communication	gross motor	fine motor	problem solving	personal-social
Total n-6 PUFA (ref T1)					
T2	1.17 (0.56, 2.43)	0.79 (0.38, 1.59)	0.96 (0.48, 1.91)	0.95 (0.47, 1.94)	1.38 (0.70, 2.74)
T3	1.07 (0.51, 2.25)	0.72 (0.35, 1.47)	0.57 (0.27, 1.19)	1.07 (0.53, 2.15)	1.51 (0.77, 2.99)
<i>p</i> for trend	0.808	0.348	0.186	0.893	0.219
LA (ref T1)					
T2	0.78 (0.38, 1.59)	1.24 (0.61, 2.54)	0.70 (0.34, 1.40)	1.08 (0.54, 2.16)	0.75 (0.38, 1.49)
T3	0.71 (0.34, 1.47)	1.00 (0.48, 2.08)	0.55 (0.26, 1.13)	0.77 (0.37, 1.57)	1.12 (0.58, 2.16)
<i>p</i> for trend	0.357	0.993	0.104	0.469	0.724
GLA (ref T1)					
T2	1.00 (0.47, 2.11)	1.07 (0.52, 2.18)	0.88 (0.44, 1.77)	1.00 (0.49, 2.03)	0.72 (0.37, 1.38)
T3	1.25 (0.60, 2.59)	0.95 (0.46, 1.96)	0.63 (0.30, 1.30)	1.02 (0.50, 2.06)	0.50 (0.25, 0.99)
<i>p</i> for trend	0.540	0.883	0.216	0.962	0.048
DGLA (ref T1)					
T2	1.00 (0.49, 2.05)	0.69 (0.34, 1.37)	1.49 (0.73, 3.10)	0.76 (0.36, 1.57)	0.84 (0.42, 1.65)
T3	0.82 (0.39, 1.72)	0.56 (0.27, 1.14)	1.25 (0.60, 2.64)	1.30 (0.65, 2.60)	1.21 (0.62, 2.34)
<i>p</i> for trend	0.608	0.112	0.554	0.445	0.573
AA (ref T1)					
T2	1.43 (0.69, 2.98)	0.70 (0.34, 1.40)	0.89 (0.42, 1.84)	0.95 (0.47, 1.92)	1.55 (0.79, 3.11)
T3	1.08 (0.51, 2.29)	0.55 (0.26, 1.13)	1.14 (0.56, 2.31)	0.88 (0.43, 1.78)	1.61 (0.82, 3.22)
<i>p</i> for trend	0.721	0.099	0.796	0.731	0.148

Total n-3 PUFA (ref T1)					
T2	0.80 (0.38, 1.66)	0.92 (0.45, 1.88)	1.65 (0.82, 3.42)	1.27 (0.63, 2.60)	0.78 (0.40, 1.52)
T3	0.98 (0.48, 2.02)	0.86 (0.42, 1.76)	1.06 (0.50, 2.25)	1.12 (0.55, 2.31)	0.88 (0.45, 1.70)
<i>p</i> for trend	0.973	0.682	0.909	0.761	0.701
ALA (ref T1)					
T2	0.95 (0.47, 1.92)	0.50 (0.24, 1.01)	0.64 (0.31, 1.31)	0.59 (0.28, 1.22)	0.76 (0.39, 1.49)
T3	0.56 (0.26, 1.18)	0.53 (0.26, 1.07)	0.73 (0.36, 1.46)	0.94 (0.48, 1.86)	0.80 (0.41, 1.54)
<i>p</i> for trend	0.112	0.134	0.491	0.876	0.585
EPA (ref T1)					
T2	0.86 (0.40, 1.84)	0.41 (0.19, 0.83)	1.00 (0.47, 2.11)	0.66 (0.31, 1.37)	1.20 (0.61, 2.37)
T3	1.41 (0.69, 2.91)	0.45 (0.22, 0.90)	1.50 (0.74, 3.08)	1.22 (0.62, 2.42)	1.44 (0.74, 2.85)
<i>p</i> for trend	0.233	0.068	0.205	0.331	0.295
DPA (ref T1)					
T2	1.31 (0.64, 2.70)	0.67 (0.32, 1.37)	1.39 (0.68, 2.86)	0.82 (0.39, 1.68)	1.13 (0.57, 2.25)
T3	0.94 (0.44, 2.00)	0.84 (0.42, 1.69)	1.09 (0.52, 2.28)	1.22 (0.61, 2.45)	1.52 (0.78, 3.00)
<i>p</i> for trend	0.871	0.630	0.835	0.545	0.211
DHA (ref T1)					
T2	0.82 (0.39, 1.72)	0.84 (0.41, 1.70)	0.94 (0.44, 2.00)	0.60 (0.29, 1.23)	1.14 (0.59, 2.24)
T3	1.00 (0.49, 2.05)	0.82 (0.40, 1.67)	1.56 (0.78, 3.20)	0.78 (0.39, 1.55)	1.06 (0.54, 2.08)
<i>p</i> for trend	0.998	0.585	0.205	0.471	0.864
n-6/n-3 PUFA ratio (ref T1)					
T2	1.61 (0.79, 3.35)	1.52 (0.74, 3.16)	0.69 (0.34, 1.40)	1.22 (0.61, 2.45)	1.52 (0.78, 3.00)
T3	0.93 (0.43, 2.00)	1.23 (0.59, 2.60)	0.68 (0.33, 1.37)	0.82 (0.39, 1.68)	1.13 (0.57, 2.25)
<i>p</i> for trend	0.863	0.580	0.274	0.597	0.727
AA/EPA ratio (ref T1)					

T2	0.52 (0.24, 1.09)	1.06 (0.49, 2.30)	1.12 (0.55, 2.31)	0.57 (0.27, 1.18)	0.78 (0.40, 1.52)
T3	0.81 (0.40, 1.64)	2.00 (0.99, 4.16)	1.05 (0.51, 2.18)	0.93 (0.47, 1.83)	0.88 (0.45, 1.70)
<i>p</i> for trend	0.625	0.045	0.907	0.905	0.726
AA/DHA ratio (ref T1)					
T2	1.85 (0.90, 3.86)	1.43 (0.69, 2.98)	0.88 (0.42, 1.85)	1.24 (0.61, 2.54)	1.15 (0.58, 2.29)
T3	1.00 (0.46, 2.18)	1.32 (0.64, 2.76)	1.37 (0.68, 2.79)	1.22 (0.60, 2.49)	1.50 (0.77, 2.94)
<i>p</i> for trend	0.802	0.525	0.311	0.627	0.227

a. The model was adjusted for nothing.

b. OR: odds ratio; CI: confidence interval.

c. Ref: reference; The fatty acids in the table were divided into T1, T2 and T3 groups according to content, with the lowest content group as reference. Children with scores lower than the 25th percentile were considered potentially delayed in that domain. Otherwise, they were normal. The cut off values of communication, gross motor, fine motor, problem solving and personal-social were 50.00, 53.75, 48.75, 40.00, 35.00, respectively.